Book of

Accepted Abstracts

ACSP 2020 Annual Conference

This book includes the abstracts accepted for presentation at the 2020 Annual Conference. This book was completed and posted to www.acsp.org 06/15/20; revised and reposted 06/25/2020

Notes about this Book

This book includes only the abstracts accepted for presentation at the 2020 Annual Conference. This book was completed and posted to www.acsp.org on June 15, 2020; revised and re-posted June 25, 2020.

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Organizers of groups of authors intending to submit as a pre-organized session used the abstract submission system to provide an overview or intent of the session, the name of a proposed discussant, and the authors and paper titles of those confirmed to be part of the session. The system assigned a proposal number to the grouping of these abstracts. This number stays with the session throughout the conference. When scrolling through this book and through each track, you'll find the pre-organized session *proposals*. Each proposal will indicate which of the abstracts in the track belong to that session. After the pre-organized session proposals are all of the numerically ordered accepted abstracts within that track. The abstract will also indicate if it is related to a pre-organized session.

Indexes Available

Separate indexes for Author Name and Keywords reference the Abstract ID #. These indexes can be found at the end of this book.

Order of Abstracts within Each Track

Abstracts are first ordered by the type of abstract, then sorted numerically by abstract ID.

1) Pre-organized Session Summaries – the overview describes the intent of the session and lists the abstract ID numbers for the included abstracts.
2) Abstracts with the pre-organized sessions
3) Roundtables
4) Paper abstracts
5) Posters

Order of Authors

The abstract management system used by ACSP allows for author role declaration.

- **For papers (individual paper abstracts, and abstracts within pre-organized sessions) and poster abstracts** - Authors of abstracts in this book and in the final program will be indicated as presenting, primary, or co-authors of the paper. The presenting author is always listed first. No more than eight authors for one paper are included.
- **Roundtables** will have a moderator and participants. The names listed are confirmed participants of the discussion. Anyone in the audience can also participate in the discussion. There is a maximum of eight names listed for each roundtable.
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Multiple abstract submissions on behalf of one author will be reviewed and may possibly be accepted and included in this book. However, more than one presentation of a paper and more than one appearance as a roundtable participant during the conference will not be allowed on the final schedule of presentations. It is, however, possible to present both a poster and a paper, if both proposals are accepted.

Participants on the final program will be limited to:

- one presentation of a paper whether in a formed paper session, or involved in a pre-organized paper session;
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Requests for Edits

All abstracts in this book are unedited and published as submitted by the author(s) for peer review. It is the policy of the ACSP that the text within the abstracts will not be edited. This book is edited only for formatting consistency.

We do understand the importance of names; that paper titles change as time goes on; and authors are added or dropped. In these instances, any necessary changes for the final program should be sent to abstracts@acsp.org.

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Quick Reference

TRACK 1 - ANALYTICAL METHODS, TECHNOLOGY AND SOCIETY

TRACK 1 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS FOR THE SESSIONS

EXPERIMENTS IN PLANNING
Pre-Organized Session 12 - Summary
Session Includes 48, 49, 51, 52

HONEY-ROSES, Jordi [University of British Columbia] jhoney@mail.ubc.ca, organizer

Experimental methods remain largely underused by planning researchers and professionals. By adopting experimental research designs, scholars and practitioners can develop research programs that test theory, measure impact, build evidence, and learn about key relationships. While not all planning policies are amenable to experimentation, there is untapped potential to apply experimental approaches in many contexts. This pre-organized session will discuss recent papers that use experimental methods in planning. We follow up on a roundtable organized at the ACSP in Buffalo, New York on the same topic. Since then, our small community of experimentalist in planning has grown. This session will help consolidate an emerging group of scholars in planning that are interested in the use of experimental methods to address pressing planning questions. We would also like to organize a sister-session on "Experiments in Planning" at AESOP in Bristol in July 2020 with the goal of fostering inter-continental collaboration and knowledge exchange.

Objectives:

- Illustrate how planning scholars and practitioners are learning about planning topics such as perceptions of public space, travel behaviour and public engagement
- De-mystify the use of experimental research designs in planning
- Inspire planning scholars to consider the use of experiments in their research

THE IMPACT OF RESIDENTIAL DENSIFICATION ON PERCEPTIONS OF PUBLIC SPACE: A FIELD EXPERIMENT
Abstract ID: 48
Abstract within Pre-Organized Session 12

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Problem, research strategy, and findings: City leaders are under pressure to increase urban residential density in order to provide affordable housing and met sustainability objectives. Yet despite the advantages of urban densification, communities throughout North America persistently oppose new developments and housing projects in their neighborhood. The impact of residential densification on the quality of life for existing residents is ambiguous. We focus on measuring the impact of one key aspect of urban densification: the perceived quality of public space. We use an experimental design to increase pedestrians and stationary users in a residential street for randomly selected periods over three weeks. We collect surveys with and without our pedestrian treatment (N=504) and find that adding users to a

residential street decreased the perceived quality of the public space overall. The changes in perceptions were small yet significant, and illustrate the real tradeoffs that planners must consider when increasing urban density in cities, especially in lower density residential communities.

Takeaway for practice: Increasing the number of public users in a residential neighborhood may slightly decrease the perceived quality of the public space. We present experimental evidence showing that perceptions of women differ from those of men, and women are more sensitive to the addition of public users. Finally, we illustrate how planners may use public life experiments to anticipate how the public might respond to future changes in the public realm.

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Key Words: Experiment, Densification, Pedestrians, Public Space, Upzoning

RANDOMIZED CONTROLLED TRIAL OF COMMUNITY GARDENS: EARLY EXPLORATION OF STUDY APPROACH AND FINDINGS
Abstract ID: 49
Abstract within Pre-Organized Session 12

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Background: Consuming a healthy diet rich in fiber, fruits and vegetables, being active and less sedentary, maintaining a healthy weight, and living in supportive social and built environments are consistently and significantly associated with lower rates of cancer. Despite this, low fruit and vegetable dietary intake, sedentary lifestyle, high BMI, and less supportive environment are more pronounced in low-income communities, and among those who lack access to the social networks and physical amenities that support healthy living. Reducing disparities in cancer preventive behaviors requires theory-informed, socio-ecological approaches. Our research aimed to evaluate the impact of community gardening on BMI, health diet, physical activity and social connectedness in multi-ethnic and low-income communities in Denver, CO using a randomized controlled trial design in a community setting (Alaimo et al., 2016; Litt et al., 2018).

Methods: We randomized participants on Denver Urban Gardens' waitlists to a community garden plot or wait-list control using a stratified, permuted block randomization protocol. Dietary intake, physical

activity, sedentary time, body composition, perceived stress, anxiety and social connectedness data were collected at baseline, mid-intervention, and follow up using objective, observed and self-report data. Using an intent-to-treat analysis and general mixed models, we will present early findings on the association of garden participation with weight status, fruit and vegetable intake and physical activity.

Results: 296 participants were recruited into the study and 234 participants completed the study, achieving a 79% retention goal. We will describe quantitative outcome data for treatment and control groups including anthropometric measurements of height, weight, and waist circumference; accelerometer measured physical activity and sedentary time; repeated 24-hour food intake; and self-reported measures of perceived stress, anxiety, and general well-being.

Conclusion: This project examined the role of community gardens, an environmental amenity in neighborhoods with a strong social organization, as a way to promote positive health behavior change among low income and minority adults in a large urban metropolitan area. Results from this trial, if successful, will provide evidence for a low-cost community-level environmental intervention that supports and sustains healthy and active lifestyles, is accessible to people across social and demographic groups, and reduces cancer risk.

Keywords: health behavior change, neighborhood, randomized controlled trial, nature-contact, social connectedness

Citations

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Key Words: Community Gardens, Randomized Controlled Trial, Health Behaviors, Nature Contact, Social Connectedness

COULD CHANGING NEWS COVERAGE OF TRAFFIC CRASHES SAVE LIVES? EVIDENCE FROM AN EXPERIMENT
Abstract ID: 51
Abstract within Pre-Organized Session 12

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Car crashes kill thousands of pedestrians in the United States each year, yet have failed to generate substantial, sustained outrage as a public health crisis. We find evidence that media coverage of crashes is partly to blame and argue that simple changes to editorial practices could garner public support for road safety improvements.

This evidence comes from two studies. In a 2018 study, we reviewed 200 local news stories, each describing a car crash involving a person walking or biking. We found that crash coverage has two key shortcomings: 1) it tends to blame the victim through subtle grammatical choices and 2) it treats crashes

as isolated incidents rather than as a recurring, systematic problem.

With that foundation, we sought to measure how much addressing these shortcomings could affect perceptions. To find out, we conducted an experiment in which 999 people read three slightly different descriptions of the same crash. Next, they answered questions about who was to blame for the crash and what should be done to improve pedestrian safety.

Group 1 read typical coverage with sentences like "A pedestrian was hit" and "A pedestrian was hit by a car", both of which make the pedestrian the focus of the sentences and omit the role of the driver entirely. Group 2 read a slightly modified text which shifted the focus to the driver instead of the pedestrian or the vehicle. Group 3 also read a driver-focused text, but with added contextual details about the crash location and the number of crashes in the area.

The results confirm that readers are indeed affected by crash coverage. We find that readers of the driver-focused text were 30 percent less likely to blame the pedestrian and in turn, were 30 percent more likely to blame the driver. More promising still, we found that thematic framing had two effects on readers. First, they were much more likely to attribute the crash to "other factors" (as opposed to the driver or pedestrian) than those who read the other texts. In addition, readers who encountered the thematically framed article preferred different approaches for improving road safety. Namely, they were less likely to support a Walk Smart! Campaign to "train pedestrians to cross the street more safely" and instead were more likely to support new pedestrian infrastructure and lower speeds.

Given these results, we implore journalists to alter their editorial patterns. An easy-to-implement—albeit incomplete—fix is to shift focus away from the pedestrian and instead focus on the driver. A more complete overhaul—and the approach we recommend—is for journalists to connect the dots between seemingly isolated crashes by employing thematic framing. In particular, journalists should describe the crash setting (based on Google Street View if necessary), include local and national data on crashes, and mention strategies to improve safety.

Planning practitioners have a role to play as well. Practitioners should embrace the best practices identified above in all of their own materials. They should not assume that overstretched journalists will have the time to seek them out. Instead, practitioners should proactively reach out to journalists before crashes take place and explicitly make themselves available for comment when a crash inevitably occurs. Finally, transportation practitioners are uniquely positioned to discuss strategies for reducing road deaths such as adding pedestrian infrastructure, narrowing traffic lanes, lowering the default speed limit, and employing automatic speed enforcement.

Simple changes by transportation practitioners and journalists can help the public draw connections between seemingly disparate crashes and increase support for institutional-level changes that will save lives.

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Key Words: Traffic safety, Media studies, Experiment, Pedestrian

LESSONS FROM AN URBAN DISORDER EXPERIMENT
Abstract ID: 52
Abstract within Pre-Organized Session 12

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Housing abandonment poses a major public health burden that has grown significantly over the past several decades in the US. Understanding ways to mitigate the problems of abandoned housing with cost-effective remediation approaches is a challenge. We will discuss our efforts to address this question through a partnership between university researchers, nonprofit service providers, and city agencies in Philadelphia to conduct a citywide field experiment on hundreds of randomly selected abandoned houses. Abandoned houses were assigned at random to receive the installation of working windows and doors with minimal maintenance (n=59, full treatment); bi-monthly clean-up of graffiti and trash around housing (n=93, graffiti/trash treatment), and no housing remediation or clean-up (n=80, no treatment control). We will discuss the effort to pull off this disorder experiment in the real world, including an analysis of the legal issues that needed to be addressed and policy barriers to implementing the remediation treatment once houses were selected. We will present a qualitative analysis of the implementation of the project to assess how well the intervention changed the physical appearance of disorder around abandoned houses and their surrounding blocks. Finally, we will discuss how the experience from this urban disorder experiment provides lessons for others in urban planning interested in using field experiments to implement and test how changes to the built environment impact populations living in cities.

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Key Words: Housing abandonment, Disorder, Remediation

TRACK 1 – ROUNDTABLES

NATIONWIDE STUDIES OF URBAN FORM: EVOLUTION, INNOVATION, AND NEW OPPORTUNITIES
Abstract ID: 15
Roundtable

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The recent proliferation of urban data and computing power has allowed planning scholars to conduct nationwide, and in some cases, longitudinal studies of urban form. These studies exhibit increasing diversity in data sources, units-of-analysis, and methodological approaches. There has simultaneously been growing awareness of the many ways in which urban form affects human and environmental well-being from local to global scales. This panel comprises scholars central to this research trajectory. It first reflects on the evolution of these studies, identifying how early obstacles were later overcome. Then it discusses open challenges facing nationwide studies of urban form today. Finally, a dialogue on emerging methodologies and data sources will shed light on the future of urban form research, emphasizing how different approaches might be synthesized into more comprehensive and integrative research that better supports evidence-based planning and policymaking for a more sustainable urban future.

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Key Words: Urban Form, Big data

WHO'S PLANNING THE SMART CITY?
Abstract ID: 122
Roundtable

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WOODBURN MCNAIR, Amber [The Ohio State University] woodburnmcnair.1@osu.edu, participant
GEERTMAN, Stan [University of Utrecht] S.C.M.Geertman@uu.nl, participant

Scholarly and public debates about smart city technology have typically focused on broad issues (e.g., surveillance) or the implications of specific technologies on cities (e.g. autonomous connected vehicles). Smart city implementation--whether through citywide programs such as in Columbus, Ohio, or in smart districts such as Toronto's Quayside--have raised the question of how such initiatives should relate to established planning practices like plans and governance frameworks like zoning. This roundtable will address the question: what changes are needed to the planning process itself to substantively and ethically shape smart city technologies to meet public goals? Reflecting upon how evolving projects like Toronto's Quayside have interacted with existing planning processes, this roundtable will explore the limits of current governance regimes, planning frameworks, and tools, and seek to lay the groundwork for next-generation smart city planning.

Citations

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Key Words: smart cities

BIG DATA AND URBAN PLANNING
Abstract ID: 939
Roundtable

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LEE, Dong Kun [Seoul National University] dklee7@snu.ac.kr, participant

In 2019, a special forum about "Technology revolution and the network of spaces" was offered with Korean colleagues, which provided an opportunity about how new technologies associated with the fourth industrial revolution can affect individual locational choice, and hence, how spatial network would change in the future. As a continuing brainstorm, another forum at this ACSP 2020 will provide an opportunity to discuss how big data has been contributing to forming urban areas and what urban planners need to prepare and utilize in the big data era. Digital transformation, so called the fourth industrial revolution requires full capacity of processing unlimited data to hyper-connect us and our areas via internet. Experiencing the technical revolution and transformation of life is in maintaining super-high speed of internet so that all the data can be processed properly and correctly without any missing. Indeed, various science and technology fields, such as quantum computing technologies, AI (artificial intelligence), IoT (Internet of Things), AV (autonomous vehicles), Robotics, AR/VR (augmented reality/ virtual reality), BT/NT (bio- and nano-technologies) 3D-printing, and so on, have been evolving to figure out problems in achieving the digital revolution. To urban planners, yet, we have not realized how the digital revolution can be adapted to the urban planning process. For example, some cities already applied digital twin concept to urban areas by constructing a 3D-based city model. A common issue in the 3D model is who, what and how we can fill in each building, land, and 3D space of specific city. If considering dynamic flows of people and business by time, the mobility information would be another challenge in collecting data. This forum will be composed of three journal editors who have handled big data, urban planning, environments, and various science and technology policy issues in South Korea. They will discuss and share academic, teaching and professional experiences with urban planners. The issues will cover from research and pedagogical education. Therefore, this forum will be helpful to other planners and practitioners who are preparing a new course or research topics related with big data and digital-based development. It is highly expected to discuss land use changes in commuting, public transportation, and various urban environments, and the future of urban and regional planning.

Citations

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Key Words: Big Data, fourth industrial revolution, digital transformation, digital twin, 3D land use model

INNOVATION AND INTERVENTION IN THE QUANTIFIED CITY
Abstract ID: 1166
Roundtable

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ENGLE, Jayne [McGill University] jengle@mcconnellfoundation.ca, participant
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Cities have been revolutionized by technologies throughout history – from the sewage pipe to the shipping container – and these technologies go hand in hand with the policies that both enable and regulate them (Rip and Kemp 1998). Transform happens at the pace of public problem-solving processes (Yankelovich and Friedman 2010). What is the role of planners in deciding what new ideas are fostered, what selection criteria choose them, and how 'good' technologies are integrated into our cities?

Contemporary cities are presented with many different possible futures founded on widely varying models. The private sector sees opportunities for disruption (the startup accelerator YCombinator has a strategic focus on cities; see Yates 2017: Cheung 2016); national governments and international frameworks see opportunities for simultaneous solution-finding and economic development (Mazzucato 2017); and individuals see opportunities for citizen science or bottom-up creativity (like Pittsburgh's public library patrons, who can check out air pollution monitors to quantify and mitigate exposures specific to their communities, or Amsterdammers with 'Smart Citizen Kits' from de Waag Society).

How do these different approaches intertwine? Are they moving our cities in a desirable direction? How do we know? How do we decide? And who is included in the "we" that does the knowing and deciding? These questions will define who cities are optimized for (and habitable to) in the future, setting the terms and the tradeoffs of urban life (Greenfield 2017). This roundtable will bring together scholars of urban planning, practitioners of technology and policy, and philanthropists with expertise in outcomes-based work to discuss urban innovation as a public problem-solving process, with a focus on ideation, deliberation and incorporation (Campbell 1979). Key questions include:

1. Sensors and other digital trace data quantify individuals with unprecedented granularity -- but the usefulness of this quantification often remains elusive. How is data best put to work? How can initiatives balance outcomes-driven and evidence-based initiatives with a continued need for inductive work on more unruly yet important contemporary problems?

2. There seems to be a divergence between directed technical evolution – like the missions (Mazzucato 2017) that Europe has enthusiastically embraced – and stochastic evolution – as in civic tech ecosystems of start-ups and citizen-directed initiatives (Thierer 2017). Are these approaches mutually exclusive? Does one supersede the other?

3. Former New York City Mayor Michael Bloomberg argued "If you can't measure it, you can't manage it" (Yates 2017: Goldsmith & Crawford 2014). Critical challenges like gentrification, social justice, and equity evade easy quantification, but a dearth of adequate metrics should not be an excuse to deprioritize critical concerns. Are planning problems, by their nature, "wicked" problems (Webber & Rittel 1973) that have no clear solution; or can wicked problems be tamed with data?

4. Technological initiatives often become salient (and politicized) only when they fail – but an initiative that can only produce positive results is a performance, not an experiment (Callon 2001). When can and should people involved in this work acknowledge failure? What processes can help us to better learn from unsuccessful initiatives?

5. Critiques of the Smart City often emphasize two possible dystopian futures: an Orwellian surveillance state or a Huxleyan future in which residents cash in autonomy and privacy for technologically enhanced lives (Yates 2017; Zuboff 2019). Can we imagine alternative futures in

which the benefits of big data and sensing are realized without undermining privacy? What major legal, social, or technological challenges would need to be overcome?

Reflecting on contributors' work and case studies, we will focus on the lessons learned and guidance for future practice.

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Key Words: Wicked problems, Civic technology, Collective decision-making, Partnership, Technology equity

URBAN DATA SCIENCE BEYOND THE HYPE: UNDERSTANDING THE CHALLENGES AND OPPORTUNITIES OF INCORPORATING DATA SCIENCE INTO URBAN PLANNING PEDAGOGY AND PRACTICE
Abstract ID: 1171
Roundtable

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BOEING, Geoff [University of Southern California] boeing@usc.edu, participant
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Relatively recent advances in processing power, "big" data availability, and algorithmic development and application in decision-making have changed the way that urban planning scholars can understand cities and inform policy. Information sensed from smartphones, scraped from websites like Craigslist and Twitter, and crowdsourced are just a few examples of emerging urban data sources. Using these data, and employing some combination of advanced computing and statistical analyses, planning scholars are doing and teaching "urban data science" [1].

New data sources, computational tools, and analysis techniques can, perhaps, offer us a different or more nuanced perspective of how people interact with and within cities, and how planners can work to create more sustainable, diverse, and equitable urban futures [2], This certainly makes urban data science seem like an attractive toolkit for planners seeking insight on urban processes in order to understand and manage cities in the present and predict how particular phenomena or interventions will produce certain outcomes or achieve stated goals looking ahead [3] But is it? Under what conditions is it attractive to whom, and for what? Provided we see in early stages that there are multiple definitions of "urban data science" and plural understandings of how it's done [4], do we collectively understand what urban data science is, and importantly, how it ought to be done? How does urban data science fit into ethical conceptions of contemporary planning? [5].

This roundtable gathers together a group of distinguished scholars, experts in data science and urban planning, to discuss the challenges and opportunities that planning scholars and practitioners are facing as

they attempt to move urban data science beyond the hype. We envision this conversation will help the planning community to gain a better understanding of the opportunities and challenges of doing and teaching urban data science. We also hope that this roundtable will provoke continued reflection on whether urban data science has or needs an uncontested definition; whether urban data science lends itself well or poorly to relevant paradigms in planning that address issues of equity and justice; and what embracing urban data science means for planning as an academic discipline, and for planning stakeholders—including individuals and institutions—in practice.

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Key Words: big data, data science, ethics, planning pedagogy, planning theory

TRACK 1 - INDIVIDUAL ABSTRACTS

ANALYSIS OF HUMAN MOBILITY PATTERNS USING WIFI SENSING TECHNOLOGY: A CASE STUDY OF A UNIVERSITY CAMPUS
Abstract ID: 5
Individual Paper Submission

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Understanding how people walk and interact with their environment has been critical to urban planning, geography, and many other disciplines. Concise measurement of pedestrian movement and activities on a street enables practitioners to design and qualify policies for a lively pedestrian-friendly city. Conventional measurement has been performed manually, and is limited by cost, time and data accuracy. Furthermore, it is not easy to track a large group of people even with GPS, impeding identification of individual mobility patterns.

We developed a methodological framework which generates individual trajectories with activity patterns using WiFi tracking technology. Most pedestrians today carry smart devices equipped with WiFi network interfaces, and each WiFi packet includes unique 48-bit addresses, known as a Media Access Control (MAC) addresses, enabling a device to be tracked by multiple WiFi sensors. An attempt to count pedestrians at several points by detecting unique devices performed well; However, few studies have explored the generation of pedestrian trajectories and activity patterns, especially in outdoor environments, because sparse and irregular WiFi signals are difficult to track.

We conducted a pilot test on the campus of Ulsan National Institute of Science and Technology (UNIST) to collect WiFi and ground truth data. We deployed 42 WiFi sensors (26 outdoor and 15 indoor) for 26

days, including mid-term examination week, the campus festival period, and days reserved for university admission interviews. By covering the entire campus region (0.224 km² in total), we gathered 745,050,937 WiFi signals from 36,947 non-randomized devices. The ground truth data was obtained from 100 recruited participants who installed a GPS application on their smartphone, each of which gave us a GPS log containing time-stamped latitude and longitude every five seconds with their WiFi MAC addresses.

After joining the GPS log with WiFi data from participants' smartphone in time, we assigned the WiFi data to the sensor network by developing a model based on WiFi features (e.g., detection frequency and signal strength) and the network topology. When these assigned WiFi points were connected, WiFi trajectories were made, and a path inference model based on Hidden Markov Model was applied to predict uncertain routes. Finally, we separated the trajectories into several sections and extracted some features (e.g., speed and group status) to classify them into several types, namely: necessary activity (e.g., attending class) and optional activity (e.g., sitting and resting for a while) based on Jan Gehl's types of outdoor activities.

We created a great opportunity for identifying human mobility patterns using WiFi tracking technology in the outdoor environment. We suggested that overall activity decreased during the mid-term periods and the number of optional and social activities during the festival periods increased near the festival booths. When applied this framework in a commercial district with public WiFi infrastructure, which allowed us to find visitors' major routes, quantify pedestrian activities at street-level and then consider which elements interact and which do not.

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Key Words: Human mobility, outdoor activity, pedestrian trajectories, WiFi sensing, smart city

MAJOR QUALITY-OF-LIFE DETERMINANTS: AN ANALYSIS OF THEIR RELATIVE AND STRATEGIC IMPORTANCE
Abstract ID: 26
Individual Paper Submission

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Based on data from a quality of life survey in Seoul, South Korea, particularly its five-year data of 2013–2017 in which an item on overall happiness is included, this study attempts to evaluate the relative importance of ten happiness determinants as consistently analyzed variables in the literature or transformed from the variables (gender, age, marriage, residential location, educational level, household income, subjectively perceived socioeconomic class, pride as a Seoul citizen, and political orientation as well as survey years for statistical control of the maturation and history biases). Accordingly, the study aims at designing happiness improvement strategies. To this aim, it evaluates not only the importance, but also the current satisfaction level in order to present why a group of people is overall less happy, that is,

among the five independent happiness components (health, finance, relationship with close friends/relatives, home life, and social life), which components are equipped with high importance, but low satisfaction. The evaluation of the importance of the overall happiness determinants is conducted through partial least squares (PLS) regression and the combined evaluation of the importance and satisfaction in relation to individual happiness components through importance–satisfaction analysis (ISA).

PLS regression finds that in the order of the importance, high pride as a Seoul citizen, high perception of socioeconomic class, survey years other than 2014, high household income, and non-elderliness result in higher happiness and albeit small magnitudes, education, residence in Gangnam (affluent districts in Seoul), marriage, and political liberalism have positive effects on overall happiness. Notably, low happiness in 2014 probably reflects the history effect of the sinking of MV Sewol, followed by enormous social costs. Most variables (pride, class perception, income, education, residence in affluent areas, and marriage) turn out to have positive relationships with happiness along with the findings of Western studies. The positive relationships that non-elderliness and political liberalism have with happiness are inconsistent with the findings, but in line with those of previous Japanese and Korean studies.

According to ISA, happiness components with the highest importance are identical or different between the groups of discrete variables, but if the importance and satisfaction are considered together, those with strategic priority turn out to be similar. Thus, if the importance is the only consideration, a judgment on strategic components may be incorrect. Indeed, ISA presents that a strategic priority according to the high importance and low satisfaction is generally to increase the financial happiness of a group of people with lower overall happiness. In addition to financial care, programs on health and home life need to be considered for the older population and those on health, home life, and social life for political conservatives.

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Key Words: Happiness, Quality of life survey, Partial least squares regression analysis, Importance–satisfaction analysis

ASSESSING SEASONAL VARIATION OF URBAN PARK USAGE USING SMARTPHONE DATA
Abstract ID: 28
Individual Paper Submission

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Urban green space is an important component to achieve the goal of planning sustainable future cities, by offering health benefits to urban dwellers and providing socio-economic and environmental benefits to society. Recent literature focused on the usage of urban parks through park catchment and service areas. However, few has addressed seasonal variation of park visitors. This paper takes advantage of the smartphone data to analyze park usage and park service area in Tokyo. We applied spatial analytical methods in geographical information system using over 1 million anonymous mobile phone samples collected from January to December 2011. We chose six district level parks in center Tokyo. The results

show that (1) significant monthly variation of park service areas exists in the study area; (2) social and cultural events are highly associated with the fluctuation of park usage, as well as climate and temperature. However, extreme events are not affecting urban park usages significantly as expected. The contribution of this paper includes (1) deepening our understanding of seasonal variation of park service area using smartphone data; (2) combining smartphone data with field observation to provide empirical evidence for park planning policy making. We discuss the impact of incorporating seasonal variation of park service area in planning urban green space and we suggest that the information and methods produced can aid urban park policy-making.

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Key Words: Smartphone data, Urban green, seasonal variation

APPLYING OAXACA-BLINDER DECOMPOSITION AND JACCARD SIMILARITY INDEX TO MEASURE RACIAL/ETHNIC DISPARITIES AND SPATIAL MISMATCH: FOOD INSECURITY AND THE SNAP FOOD RETAIL ENVIRONMENT
Abstract ID: 38
Individual Paper Submission

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Food insecurity is the lack of adequate food to live a healthy life, thus contributing to malnutrition and undernutrition that lead to chronic diseases, such as diabetes. Racial minorities are disproportionately affected by food insecurity. Food deserts are more common in low-income, urban areas and often these communities face food swamps, or a higher density of unhealthy food retailers, such as convenience stores are the most common food access point among communities with high levels of food insecurity. Further, residential segregation is associated with unhealthy food retail environment and food insecurity.

The United States Department of Agriculture (USDA) Supplemental Nutrition Assistance Program (SNAP), commonly known as "food stamps", aims to improve food security by providing financial assistance on food purchases to income-eligible households. SNAP participants redeem their benefits at SNAP-authorized retailers. The USDA assist interested retailers in meeting requirements to be an authorized SNAP vendor. There is little research in the link of SNAP-authorized food retail types and their proximity to residents participating in SNAP, especially racial minorities. This study applies methods uncommon in planning research to examine racial/ethnic disparities in SNAP retail access.

From the USDA Food and Nutrition Services website, all 2018 SNAP-authorized retailers of the 48 contiguous United States were downloaded and geocoded using Geographic Information System (GIS) technology. Each retailer was codified by retail type (i.e. supermarket, pharmacy, convenient stores, etc.) and whether retailer is "healthy" or "unhealthy" using the North American Industry Classification System codes and criteria. Demographic and socioeconomic status characteristics of households, such as Race/Ethnicity and SNAP participation, were collected at the census tract and county levels from the American Community Survey.

The first analysis examined racial/ethnic differences of food insecurity in counties by performing the Oaxaca-Blinder Decomposition analysis. The Oaxaca-Blinder Decomposition distinguishes differences

between groups into a part that is "explained" in predictor variables, but it is in the "unexplained" part that is often used to measure for discrimination. SNAP retailers were aggregated to the county and each county was coded as High Black, Low Black, High Hispanic and Low Hispanic based on the national rate of Black and Hispanic populations, respectfully. With the outcome variable being food insecurity, predictor variables included Segregation Index by race, population density, Household Median Income and SNAP retail density per households participating in SNAP by county. While food insecurity is driven by median household income, preliminary findings suggest racial/ethnic discrimination in SNAP food retail type.

After analyzing racial/ethnic differences, spatial mismatch between SNAP retailers and residents who participate in SNAP were measured performing the Jaccard Similarity analysis. Using GIS software, kernel density estimate maps at 1-, 2- and 5-mile radius were created of SNAP unhealthy and healthy retailers, as well SNAP retail density and weighted household SNAP participation by census tracts. The Jaccard Index is a measurement of similarity and is determined by taking the Intersection of both raster maps divide by the union of both raster maps. The Jaccard Distance measures the dissimilarity between sets and is determined by subtracting the Jaccard Index from 1. Preliminary findings suggest spatial mismatch of retail type in all distances in urban areas. Further, SNAP participants travel further to access SNAP healthy retailers.

Local food planning is not common for planning practitioners. This study applies two methodologies that examine racial/ethnic differences in food insecurity and SNAP retail environment. These approaches provide planning researchers with alternative tools to better examine spatial differences to inform planning and policy differences and engage retailers to become an authorized vendor in needed areas. This study demonstrates the role planners have in local food planning to improve food security among the most vulnerable populations.

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Key Words: Food Planning, Spatial Mismatch, Food Security, GIS, Racial Disparities

MASSIVE LAND-USE SUITABILITY ANALYSIS BASED ON PARALLEL COMPUTING: A CASE STUDY IN ORANGE COUNTY, FLORIDA
Abstract ID: 41
Individual Paper Submission

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Research Question

Land-use planning is one of the most influential planning routines in directing and managing the development of a city. Although its introduction dates back to the late 1960s, Geographic Information System (GIS)-based suitability analysis still plays a crucial role in contemporary practices of land-use

planning. The notion of suitability wins favor with land-use practitioners because of its capacity for effectively synthesizing community values, planners' expertise, and results from GIS analysis. However, the time cost of performing such analyses conventionally—working with GIS software on a desktop computer—largely constrains land-use practitioners' ability to sift through a variety of alternative future land-use scenarios to make better informed decisions about land use. To help overcome this obstacle, I present a case study integrating parallel computing with land-use suitability modeling.

Methodology

This study chose the Land-Use Conflict Identification Strategy (LUCIS), developed by Peggy Carr and Paul Zwick at the University of Florida in the early 2000s, as a platform on which to integrate high-performance computing with land-use suitability analysis. LUCIS is a goal-driven GIS model—initially developed with ModelBuilder in Esri ArcGIS software—that supports land-use decisions through measuring and analyzing suitability based on various sets of criteria for different land-use types. To implement parallel computing in the LUCIS model, I first developed Python for Land-Use Suitability Analysis Tools (PyLUSAT), a cross-platform open-source Python package that contains a series of vector-based functions for geospatial analysis. Built on these functions, a set of analyzing modules was developed for each land-use type that: (1) transforms LUCIS from raster-based to vector-based GIS; (2) empowers the model to work across different operating systems; and (3) can be run in parallel via any pythonic and/or system-specific means.

The computational efficiency raised by parallel computing also enables fast simulation of many future land-use scenarios. Since LUCIS uses the Analytic Hierarchy Process (AHP) to perform multiple criteria decision making (MCDM), one possible approach to conduct massive simulation is through randomizing the priority vector (a vector of weights) generated by AHP. Moreover, to allow concurrent data connections and to secure high-speed data reading, the study introduced the PostGIS/PostgreSQL database as the mechanism for both spatial and non-spatial data storage.

Case Study

A job that involved 45,909 land parcels in Orange County, Florida, was assigned to the parallel-computing-enhanced version of LUCIS—pLUCIS. Specifically, I tested and compared the performance of running this job in both a symmetric multiprocessing (SMP) environment—a quad-core desktop computer—and a cluster computing environment—a computing cluster with ninety-five cores on HiPerGator, a supercomputer built and hosted by the University of Florida.

Implication

It cost roughly five and a half minutes to run the LUCIS model on HiPerGator for the study area. The substantially diminished runtime for modeling established the viability of integrating parallel computing into land-use suitability analysis, which in turn assured that the method I implemented is broadly replicable. Moreover, during these five and a half minutes, I conducted a simulation of 120 scenarios within the study area. This capacity of massively simulating alternative scenarios gives rise to a new strategy of practicing land-use planning that is based on probabilistic models and statistical inference and can be applied on multiple scales. For individual parcels, the method can be used for site search/selection. And on a regional scale, it can be used to support the formulation of land-use plans for entire municipalities. To sum up, the noticeable speed gain in rapidly simulating large numbers of land-use scenarios demonstrates a promising application of the technology in land-use planning.

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Key Words: Land use, Suitability modeling, High-performance computing, Open-source software, Probabilistic future scenarios

DEPLOYING A GIS-BASED SCENARIO URBAN PLANNING TOOL IN A GLOBAL SOUTH MEGA-CITY
Abstract ID: 74
Individual Paper Submission

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Bogotá, one of the largest cities in South America, have been unable to update its Comprehensive Plan and Land Development Code since 2004. Mayor´s with different ideologies have presented drafts in 2013 and 2019, but the City Council rejected both in frame public controversies around city expansion or densification, in the quantity of mixed uses in neighborhods, in choosing mass transit technologies and regarding public inquiries about who is benefiting from development. These failures highlight arising challenges in participatory planning of global south cities, which now resemble those present in cities of the global north. The different interests, distrust and lack of communication among authorities, developers, community activists and environmentalists immobilized the debate about the more sustainable policies and objectives of Bogotá's comprehensive planning. The introduction of new technologies in the field of Bottom-up GIS may help, in this case aiding communication among stakeholders, building consensus, and advancing the implementation of policies that are more sustainable and equitable for the city (Talen, 2000).

For this purpose, this project aims to deploy in Bogotá an open-source urban planning scenario builder software, Envision Tomorrow (ET) developed in the United States. The purpose of using ET is contributing to the local participatory planning process, rapidly presenting to authorities and the different stakeholders several planning scenarios for the city with on the fly sustainability indicators that allow their comparison (Fregonese Associates, n.d.). The process of calibrating ET for its use in Bogota includes, among several tasks, the development of a new building library that reflects the different urban landscapes present in Colombian cities, changing values of land and development costs, new sustainability indicators, and gathering the necessary local GIS databases.

Preliminary findings point to usual issues implementing planning support systems (Chakraborty, & McMillan, 2015; Pettit et al., 2018) but a rising interest about implementing GIS-based planning solutions from citizens, now more aware of their planning processes. Bottom-up GIS planning solutions in Colombia are important because authorities have traditionally drafted codes from the top to the bottom, and monopolized urban data preventing an effective citizen participation in planning. Often these obscure processes have benefited owners of wide tracts of land and large developers while harming local communities and the environment (Yunda & Sletto, 2020). In terms of local built landscapes, it is worth highlighting the quantitative sustainability indicators found in settlements developed informally; these indicators are higher in some topics in comparison with formal development. This puts into question the long-established view that cities in Latin America should incentivize the development of large mono-functional compounds with low-cost housing in peri-urban areas, instead of exploring other less formal alternatives to solve the affordable housing shortages.

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Key Words: GIS, Envision-Tomorrow, Scenario-Planning, Bogota, Land-Use

EQUITABLE TRANSPORTATION ACCESS TO COMMERCIAL AREAS: AN AUTOMATED ANALYTIC APPROACH USING GPS TRACES
Abstract ID: 124
Individual Paper Submission

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Urban commercial districts and centers provide concentrated opportunities for shopping, dining, leisure, and other services. Rapid development in these areas has made them critical for local economic development as well as exerting significant influence on urban society and culture. Investment in these areas is often shaped by local urban planning, but how these plans affect accessibility and behavior of residents living nearby and beyond is often unexamined, despite the fact that land use and transportation plans and investments have a major effect on urban mobility and accessibility. Traditionally, data for travel behavior analysis has been derived from travel surveys with limited sample sizes that impede temporally and spatially fine-grained analysis. When small sample travel survey data is applied to specific destinations, such as businesses of a specific type, or travel times, such as evenings, travel survey data often cannot supply enough information to validly assess local patterns, or to do so in a way that obscures the behavior of specific individuals. However, recent advances in communication technologies have enabled researchers to collect travel data based on ubiquitous and location-aware smartphones, with massive GPS space-time data at a fine scale. These advances hold out the promise of allowing an automated detection of trip characteristics such as the mode of transport, travel purpose, travel time, and other travel characteristics to specific districts at specific times, with sufficient data to supply statistical validity and greater protection of anonymity than typical surveys.

In this study, we develop a data fusion framework to integrate fine-grained individual GPS trace data from smartphones of a month period, land use and built environment data, and demographic data from the U.S. census to quantify residents' accessibility to specific commercial districts in the Phoenix metropolitan region. In particular, this study develops a machine learning-based approach to identify trip information, including mode of transport and trip purpose (activity), and residence based on the data fusion framework. We train and validate several prediction models to predict the trip and dwelling characteristics. Model performance compares favorably with previous studies during cross-validation.

This analysis makes two contributions to urban planning research, one regarding inequitable access to commercial districts, and the second regarding methods for using GPS traces to analyze travel behavior at specific places and times. The results show travel patterns and accessibility for Phoenix residents to specific areas at specific times of day, such as during the evening. Travel patterns demonstrate substantial implications for equitable access to locations with major economic and social opportunities. We find that this machine learning-based approach to support trip and dwelling information extraction for large and fine-scale individual travel data can be a reliable and efficient (in terms of cost and human resources) data analysis method for planners.

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Key Words: Accessibility, Travel behavior, Machine learning, Activity pattern, Smartphone

PLANNING AND TECHNOLOGICAL INNOVATION: THE GOVERNANCE CHALLENGES FACED BY ENGLISH LOCAL AUTHORITIES IN ADOPTING #PLANTECH
Abstract ID: 177
Individual Paper Submission

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Technological innovation has the potential to change how people engage with and experience their city. Multinational corporations are developing pervasive physical infrastructures, data mining techniques and predictive analytics to open the cities usually opaque, unquantified flows of information. The term 'Smart City' has become synonymous with a technologically cultivated utopia, where urban problems can be solved computationally. This approach to urban development has been touted as a method of enabling city administrations to become more proactive when dealing with issues including pollution, traffic flow and congestion, public safety, energy use and urban planning.

This trend towards using technology in urban management and planning has sparked research and development initiatives across the planet. In the United Kingdom technological innovation is a key objective of the Conservative Government. It has published numerous policy documents that aim to achieve digital transformation of the economy, including public services. Urban planning is one of these public services that has been identified for transformation and to enable innovation in this field, the government funded Connected Places Catapult (CPC) has been given a remit of stimulating research and development into technologies that can improve the efficiencies of the planning system and simultaneously deliver a better planning service and outcomes for citizens, developers and other stakeholders. The #PlanTech movement is a CPC initiative that aims to improve engagement between various actors in the planning system, including local authorities and central government, with tech start-ups and digital entrepreneurs who can design solutions to the problems currently experienced by planners, developers and citizens alike. To date this approach has achieved some modest gains yet it is characterised by piecemeal and lacklustre uptake. Despite the significant opportunities that technologies offer planning departments in city councils in terms of productivity, existing governance models could represent a significant obstacle to implementation.

This paper uses a case study analysis of two English city councils, Coventry and Leeds, to examine how the existing governance framework supports and facilitates urban planning in English local authorities. Utilising the information gained from a combination of semi-structured interviews, literature review and stakeholder engagement exercises, it investigates the growing role of technology in planning practice within the public sector and discusses the potential implications that it may have for current governance arrangements. Finally, it suggests a framework for future urban planning governance in the era of the Smart City within an English political context. This timely and important study provides an essential analysis of the challenges facing urban planning practice in English city councils during a period of economic transition and political uncertainty. It offers a critical view of how current urban planning practice and governance procedures are being quickly subsumed by digital technologies which offer novel and effective methods for professional planners yet undermine or are inhibited by current governance arrangements. Based on ethnographic research techniques, this paper proposes a future planning paradigm

based around the use of technology, that is urban planning in the Smart City.

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Key Words: Governance, Technology, United Kingdom, City Councils

SPATIAL PATTERN ANALYSIS OF PM 2.5 CONCENTRATIONS IN DENSELY-BUILT AREAS USING THE RANDOM FOREST: A CASE STUDY OF AUSTIN AND HOUSTON IN TEXAS
Abstract ID: 290
Individual Paper Submission

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Particulate matter (PM) may generate a variety of negative effects on health, such as heart or lung disease, asthma, and respiratory symptoms. The pollutants in the atmosphere primarily result from human activities, like social-economic, and industrial activities through vehicular travel (Guttikunda and Calori, 2013, Kim et al., 2015). Hence, the amount of such particles continues to elevate as population grows in urban areas. However, the poor air ventilation of urban area may cause the effects of PM worse by increasing PM concentration as air pollutants are isolated in densely built-up urban environments. As a result, high PM concentration deteriorates the quality of urban residents' lives. Therefore, it is indispensable to reduce PM 2.5 pollutants in order to achieve urban environmental sustainability. However, few studies have investigated the quantity and spatial patterns of PM concentrations in highly developed urban areas.

As an extension of our previous research (Chun, Choi, and Pan, 2020), this study explores the quantity and spatial patterns of PM 2.5 concentrations and investigates the driving forces of this formation. To do so, we employ the geographically weighted regression (GWR) and the random forest (RF) algorithms with spatial big data. Our empirical study focused on two highly built-up urban areas, i.e. Austin and Houston in the Texas Triangle region. We first estimate the PM 2.5 concentrations by using satellite images and GWR algorithms at local scale. Second, various two- and three-dimensional urban characteristics are built in the Geo-Spatial domain. Third, the RF algorithm, one of machine learning algorithms, is implemented to determine which urban characteristics has dominantly affected the PM 2.5 variations. The findings will contribute to developing and evaluating the environmental policy for achieving long-term local sustainability.

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WHO HAS ACCESS TO STREET GREENERY CORRIDORS? EVIDENCE FROM GOOGLE STREET VIEW AND COMPUTER VISION ALGORITHMS
Abstract ID: 339
Individual Paper Submission

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Urban green space is a critical amenity that promotes physical activity, mental health and wellbeing, and social interactions (Sugiyama and Thomson, 2008; Lee and Maheswaran, 2011; Astell-Burt, Mitchell, and Hartig, 2014; Thompson Coon et al., 2011). Easily accessible street greenery, including trees, grass, and shrubs, might have a higher potential to support active transportation, regular physical activity, and outdoor social engagement than distant public parks, especially for groups with limited mobility (e.g., low-income households, seniors, children, and people with disabilities). With regard to development and policy implementation, the U.S. Environmental Protection Agency (EPA) emphasizes fair treatment of all people regardless of race, color, national origin, or income in order to achieve environmental justice. Nevertheless, only a few recent studies have analyzed whether street greenery is equitably distributed across socioeconomic, racial/ethnic, and age groups (Nesbitt et al., 2019; Schwarz et al., 2015), and this is in part due to the lack of secondary datasets describing street greenery. Recently, the landscape and urban planning literature has increasingly applied computer vision techniques to analyze street-level physical elements by using publicly-available street imagery data, such as Google Street View (Li et al., 2015; Gong et al., 2018).

In light of recent shifts in the collection of street data, (1) this study presents a novel method of identifying street greenery corridors using computer vision techniques and (2) examines the distributional equity of street greenery in Salt Lake County, Utah. We hypothesize that ample greenery along neighborhood streets is more likely to be available for privileged neighborhoods that have the ability to invest in front-yard gardening and community designs.

We collected Google Street View images using Google Static Image API and the coordinates of sample point locations along streets in study areas. Scene-parsing algorithms with state-of-the-art performance (e.g., PSPNet, which achieved the highest accuracy in predicting streetscape objects as of 2017) were employed to quantify street-level greenery. The automated extraction of street greenery was validated from the results of manual extraction. Then, street greenery corridors were identified as street segments with continuous (low greenery variance within a street segment), ample (above-median greenery density), and connected (between segments) greenery. Finally, we used descriptive statistics and regression analysis to examine whether street greenery corridors are distributed disproportionately according to socioeconomic and racial/ethnic status, and different age groups. In the models, control variables included population density, land use diversity, presence of parks and trails along the street segment, and neighborhood age.

The evaluation of access to urban green space has focused primarily on urban parks and their spatial distribution, but our understanding of the distribution of easily accessible street greenery is still limited. This study will add a valuable layer to the environmental justice discussion in planning by offering a framework for understanding street-level greenery and its distributional characteristics. From a more

practical perspective, our study can inform the work of cities that are implementing long-term tree planting initiatives, such as "Million Trees LA" in Los Angeles, the 4,000-tree initiative in Salt Lake City, and the "Urban Forest Plan" in San Francisco. By mapping street greenery corridors and quantifying access to them, this study will guide proper identification of priority streets for implementing various active living and sustainability policies, including Complete Streets, Urban Trails, and Open-Street Programs.

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Key Words: Street Greenery, Green Corridors, Environmental Justice, Computer Vision

MATCHING BEHAVIOURAL THEORIES AND RULES WITH SPATIAL PLANNING METHODS
Abstract ID: 342
Individual Paper Submission

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The concept of "behavioural" approach is receiving increasing attention in many disciplines. Many academics and practitioners are interested in applying various behavioural theories in their research, however, there is yet a lack of guidance on the selection and use of appropriate theories for specific purposes. This paper addresses the following research question: Can we create a guidance on the selection and use of appropriate behavioural theories, rules and research methods for urban planning-related disciplines?

Building on "Mapping the Landscape of Behavioral Theories: Systematic Literature Review" (Kwon and Silva, 2019), this research zooms into the behavioural theories and rules used in spatial planning-related fields. First, a literature review was performed on 29 journals, composed of the top 10 journals in "Urban Studies", "Geography" and "Transportation". A total of 318 articles that contain "behavio(u)r" in the title (2010-18) were reviewed to produce a portfolio of behavioural theories by types of behaviour, key variables, rules, and research methods. Second, interview and survey were conducted on 22 international experts from various backgrounds in planning-related fields at various conferences and workshops. The survey asked experts to identify gaps in the list of behavioural theories presented and how they currently use or could use such theories linked with what kind of rules and research methods. In addition, this paper presents a diagram that summarizes types of behaviour, a flowchart that illustrates the relationship among theories and concepts, and a table that shows the use of these theories in six domains of planning related fields: 'planning and governance', 'geography and spatial analysis', 'transportation', 'architecture and urban design', 'economics, real estate and housing', and 'environmental sciences'.

Based on the literature review and expert interview/survey, this paper discusses the following six points. First, each planning-related field has different focus of types of behaviour and hence some theories can be more applicable in one field than another. Second, the two kinds of meaning to behaviour (in the sense of behaviourism and cognitive psychology) can play complementary roles for behavioural modelling. Third, a systematic approach can be useful for modelling behaviour: defining types of behaviour in detail (e.g. by agent and activity, habitual or occasional, personal or social) to select applicable determinants and behavioural theories, extracting applicable variables and gathering relevant data, and choosing appropriate research methods, which can include analysis method and use of equations or language-based rules or both. Here, using both deductive and inductive approaches can be of great benefit for setting behavioural rules for microsimulation (e.g. Scalco et al., 2017). Fourth, there has been too much emphasis on quantitative approach in modelling until now, and there is much to gain from using mixed methods where approaches like agent-based modelling (ABM) can be useful. Fifth, ABM allows researchers to deal with not only individual but also large-scale behaviours. For example, government and policy behaviour can be included as super-agents (Chang and Harrington, 2006) and certain large-scale patterns can be understood as the emergent and self-organizing property of the system, resulting from the interaction among individual agents. Finally, philosophical discussions are important as computer-based models of behaviour remain as a technical activity until we take it to public policy with value judgements. Understanding and applying various theories to behavioural modelling can help the shift from top-down, regulation-oriented and often authoritarian behavioural interventions to a more bottom-up approach that encourages individuals to make proactive and lasting behavioural change especially regarding pro-environmental and pro-health behaviour. In parallel, an empirical case study is being carried out, applying some of these theories in an ABM using data from a city of the Republic of Korea.

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Key Words: Behavioural theories, Research methods, Agent-based modelling, Urban and environmental planning

BEYOND THE SUPPLY SIDE: USE AND IMPACT OF MUNICIPAL OPEN DATA IN THE U.S.
Abstract ID: 343
Individual Paper Submission

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While the number of open government data initiatives has increased considerably over the past decade, the impact of these initiatives with respect to government accountability, civic engagement, and economic innovation is uncertain. Recent studies have been critical of the "bias toward the supply side" and lack of "sufficient attention to the user perspective" in the way that open government data initiatives are implemented. While the commitment to open data is not uniform across local governments, it has the potential to create both commercial and social value with private firms, civic hackers, and non-profit organizations as examples of key actors already leveraging these resources. Prior studies have provided limited empirical evidence, which constrains our understanding of how actors and institutions interact with open data, related technologies, and governing policies to co-produce social and commercial value. This paper focuses on these research questions: (1) Who is using municipal open government data resources and for what purposes? (2) What impact are municipal open government data having in cities

where they have been implemented?

This study relies on a qualitative analysis of 26 semi-structured telephone interviews conducted with government staff, civic technologists, and private sector stakeholders in nine cities around the United States. Each of these 30 to 45-minute telephone interviews were transcribed and analyzed to distill insights regarding the use and impact of municipal open government data and the creation of commercial and social value in the nine cities considered. We find that the array of actors within open government data ecosystems at the local level is expanding as distinctions between the public and private sectors becomes increasingly blurred. The demands of managing and sustaining these initiatives has led to changes in the services offered by local government as well as in the duties of government staff. The impact of these data resources has been primarily felt within local government itself, although the lack of monitoring mechanisms makes it difficult to systematically evaluate their broader effects. We highlight examples of commercial and social value derived, summarize best practices, and argue that a larger role for planners in the design and governance of open government data initiatives could help to more fully realize their public engagement aims.

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Key Words: open data, e-Planning, civic technology

SCENARIO DISCOVERY FOR UNCERTAINTY PLANNING: THE NEXT BIG THING OR OVERKILL?
Abstract ID: 463
Individual Paper Submission

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For half a century, urban planning scholarship has acknowledged the difficulty of planning for the deeply uncertain future. Unfortunately, the central analytic tools, particularly urban simulation models, remained tied to the assumption that the future will look similar to the present. However, in the past two decades, the environmental modeling community has introduced exploratory modeling approaches for policy making under uncertainty. Scenario discovery in particular seeks to understand the effectiveness of policy solutions under uncertain future conditions. This approach is increasingly relevant as planners cannot assume a static behavioral, environmental, economic, and political substrate for action. Scenario discovery promises to deliver robust policies, that work in all plausible futures, and contingent policies, that should be applied as circumstances dictate.

Exploratory modeling and scenario discovery are still new to urban simulation. The United States Department of Transportation Model Improvement Program is developing a tool that integrates with transport simulators to parameterize, execute, and analyze exploratory modeling exercises. The approach remains more novel in land use planning. Only one published journal article that I am aware of explores the method. Though the approach is theoretically appealing, it remains practically untested. In particular,

the several-hour run times of urban simulation models pose a challenge to experimental designs that require hundreds or thousands of runs.

This research paper explores the potential use of exploratory modeling in land use simulation. With the Simple Integrated Land Use Orchestrator, this experiment uses scenario discovery to examine policy approaches to managing the land use impacts autonomous vehicles. Value of time, fuel costs, and transportation network efficiency are all treated as uncertainties. In addition, I compare the results of this simulation to more parsimonious explorations of the uncertainty space that are designed to mimic traditional scenario planning exercises. The paper demonstrates that scenario discovery is a viable method for planning under uncertainty when the researchers limit the dimensions of uncertainty. It also demonstrates that the more parsimonious explorations of the uncertainty space provide plausibly similar results with far fewer model runs. However, they are not as useful in understanding the circumstances under which to implement contingent policies.

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Key Words: Uncertainty, Land Use and Transportation Urban Simulation, Urban Simulation Automated Vehicles, Automated Vehicles

ANALYZING TRAVEL BEHAVIOR AND BUILT ENVIRONMENT WITH DEEP LEARNING
Abstract ID: 496
Individual Paper Submission

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Researchers have been using a handcrafted feature engineering (HFE) paradigm to investigate the relationship between built environment (BE) and travel behavior (TB) for decades. However, this paradigm is limited due to measurement difficulty, information loss, incomplete prior knowledge, and low model performance. This study analyzes the relationship between BE and TB by using a wide and deep convolutional neural network (WD-CNN) and aerial images as a composite measure of BE factors, presenting a novel automatic feature engineering (AFE) paradigm. Our experiments investigate how WD-CNNs predict automobile ownership, trip purposes, and travel mode choices, in comparison to the classical choice models that use numerical indicators of BE factors, based on the large-scale national household travel survey 2017 (NHTS2017) augmented with aerial images. We found that using the aerial images and even the simplest WD-CNN can achieve about 10 percentage points higher prediction accuracy than choice models, and this higher model performance is consistent with all three types of travel behaviors. With more advanced CNN architectures, the prediction accuracy can achieve as high as 75% for automobile ownership, 85% for trip purposes, and 88% for travel mode choice when the aerial images and the individual characteristics are combined. Besides prediction, we interpret models by ranking the importance of individual features, and found that BE is one of the most important factors in

influencing TB. Overall, this study provides a new benchmark result and a new analytical paradigm to explore the relationship between BE and TB: when BE is measured by raw aerial images rather than refined numerical values, BE is highly informative for TB. The past finding of a modest relationship between BE and TB does not reflect the reality but is largely caused by the caveats of the HFE paradigm. Future studies can continue to use deep learning methods and unstructured data sets (such as images) to explore the relationship between BE and TB by interpreting CNNs for policy and planning interventions, combining the classical BE indicators and the new end-to-end AFE paradigm, and testing the generalizability of our work in other contexts.

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Key Words: travel behavior, built environment, choice modeling, deep learning

A STUDY ON THE CHANGE OF PLAN FACTORS OF DANGIN-RI POWER PLANT THROUGH THE ANALYSIS OF TEXT MINING
Abstract ID: 534
Individual Paper Submission

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The purpose of this study is to analyze the planning elements (keywords) in the 10-year big data of Dangin-ri Power Plant, a representative example of the modern industrial heritage of Korea, using the text mining research method (analysis tool: RStudio).

Through big data analysis, we look at the patterns of change (frequency and distribution of each section) according to the change in major periods (by section) and visualize the connection network between the elements through network analysis. The network analysis could help to more quantify the relationship between components.

The process of deriving the planning elements by period (section) was carried out as follows.

First, data were collected during the analysis preparation phase: For five years prior to 2013 (2008 ~ 2013), Korean journals (15 journals, 2,223 words) and research papers selected by searching as "Dangin-ri Power Plant" from Korea's largest academic research information service (RISS) (13) 6 papers, 6,807 words), For five years since 2013 (2013-2018), the 2013 Basic Initiative Report (344 pages, 42,428 words) was published by the Ministry of Culture, Sports and Tourism and published by the Expert Group, 2014 Basic Plan Report (357 pages, 48,122 words), 2015 Dangin-ri Cultural Creative Power Plant Development Plan Research Report (276 pages, 11,108 words), 2018 Cultural Space Creation and Operations Plan Report (235 pages, 32,195 words) and Space Usage Plan Report (70 pages, 11,394 words). All report PDF files were converted into text files, and natural language processing and nouns (keywords) were extracted using RStudio program. Second, in the big data analysis phase, matrix data was visualized in the order of frequent keywords, major keywords and connections were clustered using

the word cloud, and network connections were visualized using networkD3. Third, in the interpretation and evaluation stage, the process of change of major keywords was analyzed in terms of connectivity, contiguity, and betweenness centrality. Finally, the NNet package, a machine learning method, was used to derive eight high-frequency keywords (plan elements) from the first 31 keywords (plan elements) through the artificial neural network algorithm.

As one of the future research methodologies in urban planning, we hope that there will be many attempts to utilize big data methodologies (it is already used in predicting crime/disaster/climate change, analyzing tourist images (trends) and developing strategies for smart cities). Also, we hope that this research will help prevent the increasing slumming of modern industrial heritage and establish a direction for planning elements utilizing modern industrial heritage with many potentials.

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Key Words: Vacant space, Modern industrial heritage, Urban regeneration, Text-Mining, Analyzing the process of Changing Plan-Factors

EXPLORING GROWTH MACHINE USING TEXT-MINING: THE ROLE OF LOCAL NEWS MEDIA IN PROMOTING LOCAL GROWTH
Abstract ID: 552
Individual Paper Submission

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"The city as a growth machine" is one of the political economy theories that explain a locality which is constantly seeking growth and development by shaping a local growth coalition majority (Logan and Molotch, 1987). The local growth coalition keeps pursuing urban growth through land development, arguing that the benefits from the growth return to citizens with more jobs and their quality of life. In the urban growth machine, local news media, as one of the local elite groups, plays a crucial role in fostering public opinion in favor of growth and development (Scott, 2009). It is because journalists have voices to make the readers support specific positions by more exposing newsworthy events with their tones, and they are likely to support growth-inducing investment for their regions throughout the overemphasis on the relationship between improved lives and growth (Logan and Molotch, 1987; Munro, 2018; Scott, 2009). In other words, local newspapers can have hegemonic power to have a biased ideology, such as urban growth and development supported by local elite groups (Logan and Molotch, 1987; Munro, 2018; Scott, 2009).

To explore whether this growth machine theory actually works in cities in developing Asia, this study conducts an empirical analysis to examine the relationship between local new media and urban growth in South Korea. Our study areas include the three largest metropolitan areas in South Korea: (1) Seoul, (2) Busan, (3) Daegu. We assume that the trends of the housing market and urban development in the Seoul

capital region are related to the national newspapers because the Seoul capital region accounts for over 50% of the population in Korea and all headquarters of national newspapers located in Seoul. On the other hand, we hypothesize that the housing market and urban development trends in local cities are related to the local news media rather than the national one based on the growth machine theory. We test whether the tone of local news media is more positive to local growth and development by making a monthly sentiment index of local news media about urban growth and development using a text-mining technique.

For data sources, we collect headlines of news articles published in ten national newspapers, four Busan local newspapers, and three Daegu local newspapers between January 2012 and December 2018 through web crawling using a specific keywords search related to urban growth and development. And then, we conduct lexicon-based sentiment analysis, one of the useful text-mining techniques to extract polarity from a text. Also, we use only headlines of news articles, which represent the body, to quantify the tone of each news article because it is a less complex but effective method to apply the sentiment analysis (Nasssirtoussi et al., 2015). The sentiment dictionary used for the sentiment analysis is newly created to reflect words' networks that are customized to explain the urban growth and development. Finally, throughout the sentiment analysis, we develop monthly sentiment indexes of news media for three case regions. The role of the local news media in local growth and development is finally examined using the Granger causality analysis between the sentiment index and the trends of local growth and development.

The preliminary results show that the trends of the local growth are more related to local media than national media. Namely, the positive tones of local news articles towards local growth and development are likely to promote the upward trend of the local growth. This study provides a better understanding of the role of local news media in promoting growth coalition's objectives, implying planners need to be more careful in gathering public opinion on urban growth and development.

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Key Words: growth machine, sentiment analysis, local media, land development, granger causality

COMPUTATIONAL AND SIMULATION TOOLS: HOW COULD THEY SUPPORT DESIGNERS IN SHAPING A CITY-WIDE SUSTAINABLE URBAN FORM?
Abstract ID: 553
Individual Paper Submission

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The re-emergence of design as a major concern in planning has included greater environmental concern with the sustainability of development at the macro and micro scale and a more strategic view of urban design as a shaper of urban form (Punter 2007). Hence, McDonalds (2016), Schmitt (2012), and deschiller (2004) advocated for a sustainable urban design practice in which plans at a range of scales help make connections between the different elements of sustainable urban form at each scale with the planning policies, regulations, and processes. The complexity of the city, however, becomes difficult to

grasp, as the interrelations, dependencies, and connectivity between all subsystems require new pathways for sustainable urban design (Roggema2017).

Traditional methods of planning have reached their limits. Planners as such need a radical re-thinking, alternative approaches, and creative design methods to support their decisions (Schmitt2012). Some experts proposed to design the process around dynamics and scale by viewing cities within dynamic urban metabolisms that apply flow simulations to all scales whereas others recommended simpler methods (Roggema2017).

Providing designers with reliable simulation tools is essential to develop innovative solutions and to achieve a sustainable urban form (Peters & Peters2018). However, they are still in the experimental stage of development and are neither effectively nor widely used. Critical studies showed that urban planning decisions still are made without reliable methods and in many cases tend to be subjective and dependent on the opinion of decision-makers (Zagorskas and Veteikyte2012). There are few cities in the world, perhaps Portland, Seattle and Vancouver where the design dimension of planning responds fully to the challenges design principles pose to sustainable urban form.

To have a clear picture of the limitations, methods, and impact of their usage, there is a need to understand how those tools are being used within the urban design process in planning departments. This research departs from the hypothesis that simulation tools may support the urban design process and result in shaping various aspects of the sustainable urban form. Planning departments that use those tools in their practice may help to gather evidence regarding this hypothesis.

The research has addressed critical questions:

1. To what extent have planning professionals used simulation techniques and at what phases?
2. How has the usage of those techniques supported planning professionals in:
   1. Developing a city-wide design strategy across both micro and macro scales,
   2. Addressing various aspects of sustainability of the urban form.

This research consists of three phases: first, a review of the related literature has been pursued to construct theoretical propositions to which the empirical results have been compared. In the second phase, an Internet questionnaire survey has been forwarded to all planning professionals working at the Department of planning, City of Portland, Oregon. The semi-structured interviews with key informants have helped gather rich qualitative data that have been used to triangulate the quantitative data collected from the survey.

The results showed that the impact of simulation tools' usage on the planners' capabilities to design a sustainable urban form across scales is correlated with several procedural and substantive factors that were influenced by the tools' capabilities, availability, and relevance, as well as the designer's skills and expertise in their usage. The limited impact of usage was due in part, to ineffective methods and inconsistent usage across all design phases. The results did not provide any clear evidence that a new approach to designing a sustainable urban form in mainstream practice seems to exist. They suggest further research that connects emerging tools' capabilities with their methods of usage through new concepts and modes of thinking and communication.

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Key Words: Urban design process, Sustainable urbanism, urban simulation, Urban design practice in US cities, Computational urban design methods

STUDY ON THE ACCURACY OF MOBILE PHONE DATA: FOR ANALYZING RESIDENTS' TRAVEL BEHAVIOR
Abstract ID: 558
Individual Paper Submission

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Residents' travel is an increasingly concerned field of urban geography and urban transportation. The main data source of the traditional study is resident travel survey, which has problems such as difficulty in investigation and limitation of samples. Due to the large sample size, high update speed, easy access, mobile phone data has been widely used in this field. However, its reliability remains to be verified due to the limitations in spatial and temporal accuracy. It's the premise of travel study using mobile phone data, and also the main question to be answered in this study to find out the accuracy and errors of mobile phone data, the scope of application, and the methods of checking and correcting the data.   This paper conducts a comparative study of residents' travel based on both mobile phone data and resident travel survey data, and analyzes the causes of differences, so that we can understand the features, limitations and application value of these two types of data, and to reveal the characteristics of residents' travel more realistically and comprehensively, and also to provide more accurate parameter information for urban traffic planning and traffic simulation.

This study used mobile phone data and resident travel survey data to study residents' travel behavior in Shanghai, China. Firstly, we compared the difference between these two types of data from such aspects as travel volume, travel duration, travel distance, travel spatial distribution and time variation, travel patterns of different crowds, etc. Secondly, we explored reasons resulting in these differences, and measure the accuracy of mobile phone data in all aspects. Next, the travel survey data were used as the basis for checking, and the identification method of mobile phone data was optimized.

It is found that the mobile phone data has larger errors in travel duration and travel distance, and the proportion of short-distance travel is lower, but it is more accurate in travel frequency. According to the mobile phone data, the difference between peak and off-peak is smaller than that of travel survey data, so is the difference between morning peak and evening peak. The travel survey data left out some of midday travel and evening travel, and mobile phone data made up for this lack. Besides, residents' travel patterns based on mobile phone data were more abundant. The commuters' travel characteristic based on mobile phone data had smaller error, while the non-commuters' travel had larger error. The quality of the mobile phone data is greatly affected by the night shutdown. The accuracy of mobile phone data can be greatly improved by repairing the missing data at night through multi-day data combination. The accuracy can also be improved by selecting samples with high-quality records. At the end of the paper, we summarized the errors of mobile phone data in all aspects of travel study, and how these two types of data can complement and modify each other to provide more accurate parameter information for traffic planning and urban management.

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Key Words: accuracy, mobile phone data, travel survey data, error, travel behavior

MANUFACTURING SOCIAL CAPITAL: VISUALIZING SOCIAL NETWORKS THROUGH CIVIC INNOVATION INITIATIVES IN URBAN MANUFACTURING CLUSTERS UNDER DEVELOPMENT PRESSURE
Abstract ID: 563
Individual Paper Submission

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Manufacturing clusters, a concentration of manufacturing firms and businesses in geographical proximity, are known to enjoy economic benefits through reduced transportation costs, localized knowledge flows, shared economic advantages, and the flexibility to adapt to changing economic structures (Granovetter 2005,Gordon and McCann, 2000; Safford 2006). In post-industrial societies, these clusters have been displaced from cities through planning measures, fueled by profit driven development (Zukin, 1989; Rast 2001; Hamnett, 2003; Curran & Hanson, 2005). Recently, new innovation district projects emerged to connect manufacturers to entrepreneurs, designers and makers to respond to the paradigm shift towards more decentralized 'smart' processes powered by advanced technologies. Local governments invest in this 'manufacturing innovation ecosystem' (E. B. Reynolds & Uygun, 2018) to foster connections between manufacturing and R&D networks of universities and startups through extensive governance projects.

As these initiatives actively take place in the same productive space, involving overlapping actors, it becomes important to visualize how these new innovation policies connect the traditional manufacturing community with new actors to evaluate their efficacy. How do these initiatives change the social network in manufacturing clusters? And are the new spaces for collaboration and technological innovation also generating stronger manufacturing communities by connecting heterogeneous groups?

The objective of this research project is to analyze how civic engagement planning programs as part of innovation initiatives engage the manufacturing community, and characterize the community they create. The research builds on the scholarship of social network analysis to explain how urban planning programs generate 'bonding' and 'bridging ties' and create social capital to address mutual problems in heterogeneous communities (Dempwolf & Lyles, 2012; Gittell & Vidal, 1998; M. S. Granovetter, 1977; R. Putnam et al., 2004). My focus lies in understanding how innovation initiatives generated 'bonding' and 'bridging' ties, and in interrogating the new capabilities these new ties generated under persistent development pressure of these sites.

Given the informal nature of traditional manufacturing business operations, the research choses a small data approach utilizing social network data collected through a survey instrument called the name generator, originally developed for the General Social Survey (GSS) in 1984. I collect egocentric social network data through structured interviews based on the GSS name generator between the manufacturing community and the new actors which include government officials, community organizers, artists and entrepreneurs. With the network data, I use egocentric social network analysis methods to visualize and characterize the network between governance actors and manufacturing firms to measure 1) the network size, 2) the multiplexity of different networks the ego is part of, 3) the strength of the connections derived from the frequency and the duration of the bond and 4) the composition of alters based on industry types.

Measuring the composition of the ties allows me to clarify whether the programs that generated 'bridging ties' and 'bonding ties'. In addition, using the network size, multiplexity, and strength of the connections, I compare how strong each of these new ties are to characterize the change of these relation building programs.

The research fills an important gap in the planning literature of innovation, relation-building governance systems and community engagement through first making the old and new social networks in urban manufacturing communities visible. While the scholarship largely focuses on measuring the outcomes of such policies, this research takes a step back and elucidates the mechanisms through which governance actors connect to the community and foster new relationships. Ultimately, I aim to clarify the pathway of network building practices in urban manufacturing communities towards bridging heterogeneous groups and strengthening the social capital.

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Key Words: Social network analysis, urban manufacturing, manufacturing innovation ecosystems, social capital, egocentric network

THE IMPORTANCE OF STAKEHOLDER NETWORKS IN BUILDING RESILIENCE TO FLOODING
Abstract ID: 571
Individual Paper Submission

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Over the past decade there has been a rise in the use of social network analysis in planning literature. Here, we expand network analysis techniques and methods applicable to planning networks. This paper examines the structure of planning networks, which consist of organizations involved in hazard mitigation planning, in four major US cities: Boston, Baltimore, Fort Lauderdale, and Seattle. Extant research has examined planning networks to a minimal extent and have typically been focused on strategies for stakeholder selection in planning processes in a single geographic area. Efforts have not been focused on highlighting differences and similarities in multiple cities. Furthermore, only recently have stakeholder network studies been dedicated to furthering understanding of planners in hazard mitigation or emergency management situations.

The network literature highlights several reasons why networks connections are important in hazard mitigation. The argument, however, is quite simple. Individuals and organizations that are well-connected to the mitigation network have increased access to resources, such as information or tools, to reduce vulnerability to hazards and rebuild after a disaster. Access to planning coalitions and processes allows those lacking strong ties to prepare and advocate for equitable planning and infrastructure repair, which may reduce vulnerability to disasters. Less connected organizations and representative community groups may experience increased challenges in advocating or influencing city or county governments to make upgrades and changes which reduce vulnerability to flooding or other events. Those organizations with better connections to planning agencies, stakeholders, and local or regional decision-makers may be better able to influence the mitigation processes, both on-the-ground and in public policy, than less well-connected organizations. Essentially, network ties provide access to resources that may increase an organization's power and status, resulting in an imbalanced planning environment.

The data for this paper was collected with support from a collaborative NSF grant. We first examined a series of plans from each city and identified the names of organizations that were listed as implementation partners and planning participants. We surveyed these organizations as well as each city agency within each of the four cities asking them, among other things, about their level of connectivity with the other organizations identified in the plans. We asked the organizations to list other organizations that they had collaborated with on hazard mitigation efforts and sent those organizations (referred to as snowball organizations) a survey to get their levels of collaboration as well. We surveyed each city individually which resulted in a survey period that lasted between August, 2019 and January, 2020.

There are several takeaways from the network analysis in this project. The most observable is the level of connectivity of each individual actor as well as the network as a whole of those involved in the planning process. We also examine the planning networks in each city and compare and contrast them with each other. This is the first step in understanding differences between cities and also provides additional avenues for further analysis on the types of planning networks across varying geographies. In addition, we ask about the importance of each collaboration relationship in resilience building efforts. This outcome yields important information about which network ties may be higher importance from the perspective of those involved.

We conclude with a discussion about the importance of increasing diversity of actors involved in local and regional planning as well as commentary on planning uniformity across cities. This is important on multiple levels, but particularly for developing an inclusive planning process.

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Key Words: Planning Networks, Social Network Analysis, Hazard Mitigation

INCREASING GREEN SPACE TO REDUCE STREET CRIME IN TORONTO: EVIDENCE FROM A SPATIAL ANALYSIS STUDY AT THE NEIGHBOURHOOD LEVEL
Abstract ID: 591
Individual Paper Submission

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This study investigates the association between street crime rates and greenspace in Toronto while controlling for specific sociodemographic factors. Applying spatial analysis at the neighbourhood level, we aim to address two main research questions for urban planning of green space to reduce street crime:

1. Is there a variation in yearly and monthly crime trends? Does seasonal variation influence street crime in Toronto?
2. What is the relationship between street crime rate and greenspace variables after controlling for socioeconomic factors? Is the relationship consistent across the study area?

We used line graphs to explore the trends of street crime occurrences as well as seasonal variation and a spatial statistical approach on the tree inventory data to derive the greenspace variables. Street crime extracted from police records (open data) and the three street crimes were classified into property (auto-theft) and violent (assault & robbery) crime. Multivariate spatial regression analyses (spatial lag & spatial error) were carried out on the street crime rates and greenspace variables to account for spatial autocorrelation using GeoDa.

There were changing trends and seasonal variations for the three types of street crime. From the tree inventory data, we estimated three greenspace variables, namely, stem density, basal area density, and tree density. We included covariates of median housing income, unemployment rate, lone parent, high school, housing unit occupied by owner, and housing unit occupied by renter, in the regression analyses to control for socioeconomic factors. The stem density and tree density are negatively associated with the three street crime rates at the 5% significance level, but the basal area density is insignificant. All of the above socioeconomic factors have a significant association with the three crime rates.

The findings from this study reveal that greenspace deters street crime in the city of Toronto. The sociodemographic factors studied, which all have a significant association with street crime, should warrant further investigation for the reduction of street crime. The importance of green space in urban cities cannot be understated. Law enforcement planners, urban planners, and landscape architects should collaborate to achieve a collective goal of sustainable development as well as greenspace equity.

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Key Words: Street Crime, Greenspace, Tree Inventory, Spatial Autocorrelation, Spatial Regression

FORECASTING SCOOTER-SHARE TRAVEL BEHAVIOR BASED ON ORIGIN-DESTINATION LOCATION AND TIME OF USE: A MACHINE LEARNING APPROACH

Abstract ID: 618
Individual Paper Submission

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For a long time, traditional four-step modeling dominates transportation forecasting. Generally, the four-step model predicts the travel purposes by travelers' personal information gathered from community surveys and regional economic characters and then assigns the expected traffic volume to different modes based on assumptions (McNally, 2000). However, due to the rapid development of micro-mobility in the current years, such as electric scooter-share, transportation planners and engineers have found it troublesome in applying the traditional technique to exercise the same procedure in practice. There are two significant barriers to this problem. For one, micro-mobility trips are much shorter than the trips fulfilled by automobiles or transit. At a smaller geographic scale, the diversity of land use and economic status fail to indicate the travel demand. For another, given the fact that there hasn't been much personal information collected from extensive user surveys to establish trip purpose baselines, the issue of generating a possible distribution of traffic origins and destinations based on trip purposes is still unsolved. The lack of credible traffic forecasting methods in the micro-mobility prevents transportation planners, city administrators, and the private vendors of micro-mobility service from managing and adjusting the operation in the local market.

Many researchers in the smart city field have proposed to use concepts and techniques in data-rich studies as (part of) a solution to urban problems(Lim et al., 2018). In transportation, machine learning algorithms such as support vector machine (SVM) classification and artificial neural network (ANN) generation have been primarily used in predicting automobile traffic density or transit passenger ridership (Çetiner et al., 2010; Wang et al., 2018). The critical datasets used in these simulation studies are location and time of use, which have been proved to be directly associated with travel behaviors regardless of modes (Pendyala & Goulias, 2002). Unfortunately, short-distance travel modes in micro-mobility like bike-share and scooter-share are ignored continuously. To fill the research blank, this study first selects scooter trips generated between July and December in 2018 in Austin as the sample dataset. Then, we configure a recurrent neural network (RNN) model to predict the scooter-share traffic flow between origins and destinations of interest based on their location information and the time use. Finally, this study complements other datasets such as weather and special events to improve model performance. Results show that RNN is a valid computationally-efficient model to predict scooter-share travels with an average precision rate of over 75%. The study contributes to the current transportation planning by proposing a tangible travel demand management methodology during the operationalization of micro-mobility in cities. The method can be used in practice, such as controlling the fleet size or optimizing redistribution strategy when the survey-based forecast is inapplicable.

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Key Words: Micro-mobility, travel forecast, recurrent neural network, machine learning

THE PROSPECTS FOR ARTIFICIAL INTELLIGENCE IN URBAN PLANNING
Abstract ID: 621
Individual Paper Submission

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Since the late 1960s, urban planning has encountered a variety of advanced analysis methods with greater and lesser degrees of adoption. Geographic Information Systems (GIS) is probably the most notable, with others such as database management systems (DBMS), decision support systems (DSS), planning support systems (PSS) and expert systems (ES), having mixed levels of recognition and acceptance (Han and Kim, 1989; Pettit et al, 2018). The adoption of GIS, some will argue, has been primarily related to its cartographic capabilities and less so for sophisticated spatial analysis techniques. More recently there has been a re-emergence of artificial intelligence (AI) related methods. Applications of AI have been rapidly increasing, especially with respect to consumer goods and services. Amazon, Netflix, Google, and other companies have invested significant sums in these technologies to gain insights on consumer characteristics as well as improve supply chains and distribution.

This paper reviews the literature (1960s to current) on AI-related methods to assess how language and perspectives have changed over time relative urban planning applications. Several interviews with urban planning methods experts were also conducted to add further nuance to the discussion and identification of the primary challenges involved. Increased data availability, increased processing speeds, and increased accessibility to AI methods have the potential to reconnect with urban planning processes and decision-making. But will it be different this time? The paper also draws on Lee's assessment of large-scale models from 1973 as a lens for evaluation. While it is only possible to speculate about the prospects of AI in urban planning, familiar cautions remain alongside optimism for new opportunities and possibilities.

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Key Words: planning, methods, artificial intelligence, data science

PREDICTING HEALTH OUTCOMES AND HEALTH BEHAVIORS FOR FOUR MAJOR CITIES IN TEXAS: A MACHINE-LEARNING APPROACH
Abstract ID: 647
Individual Paper Submission

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Promoting urban health has been a core mission of urban planning since the birth of the profession more than a century ago. In the scholarly field of city planning, many studies have been conducted to analyze the impact of the built environment on health. There has been increasing evidence that the built environment can influence people's lifestyle and level of physical activity which can lead to poor health outcomes such as obesity, cardiovascular disease, and diabetes (Ewing & Cervero, 2010; Schulz, Romppel, & Grande, 2016; Villanueva et al., 2013). Existing research, however, mostly focuses on the relationship between features of the built environment and a narrow set of physical activity behaviors or related health outcomes based on traditional, inferential statistics methodologies, with few studying the issue with novel AI technologies such as machine learning which can accurately predict a broad range of health outcomes and health behaviors based on the increasingly available large-scale urban datasets.

In this study, we use machine learning techniques to predict a wide range of health outcomes and health behaviors at the census tract level for four major cities in Texas—including Austin, Dallas, Houston, and San Antonio—based on a broad set of features that characterize different social, physical, and perceived neighborhood environments. The outcome variables include not only the common physical health outcomes but also variables indicating mental health and unhealthy behaviors such as smoking and binge drinking. In acknowledging the possibility that, in addition to the physical and social environments, the perceived neighborhood environment could also have played a role in affecting the different health outcomes and behaviors, we used the relative frequencies of 311 service requests of different issue types aggregated at the census tract level to capture important features of the perceived neighborhood environments. Eight different machine-learning algorithms are compared based on their predicting accuracy with their defaulting setting of hyperparameters, including ridge regression, lasso regression, elastic net, support vector machine, decision tree, random forest, extra trees, and gradient boosting. We further fine-tuned the lasso regression models for predicting the health outcomes and behaviors and show the important features selected by the lasso regression models. Lasso regression was used for understanding the potential factors affecting the health outcomes and behaviors because: (a) in our study, after the lasso models are fine-tuned, their performance is often boosted to a great extent, sometimes even outperforming the more sophisticated models such as random forest and gradient boosting; (b) the results of the lasso models, presented as standardized coefficients, are easier to interpret than the more sophisticated non-parametric and ensemble-learning models.

Our findings suggest that the socioeconomic variables are the most important predictors for many health outcomes and behaviors, followed by the built environment variables. In some cases, the relative frequencies of 311 service requests of certain types have also significant predictive power, although the reasons for such connections are not always clear. We map and compare the predicted and the true prevalence of obesity in Austin for the census tracts included in the test set to show the potential of our models to be used as a robust tool for evaluating health risks for existing and future developments. The predictive models can be implemented as interactive tools for government officials and the public to understand how changes of certain factors can increase or decrease health risks and help the planners evaluate and improve the potential health outcomes through planning.

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Key Words: Public health, Built environment, Perceived environment, Machine learning

REGIONAL LAND SET-ASIDES FOR FORESTATION, AND THEIR EFFECT ON REGIONAL EMPLOYMENT LOCATION: A DYNAMIC MODEL FOR EXPLORING SCENARIOS

Abstract ID: 662
Individual Paper Submission

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We plan for complex social-ecological systems which change constantly, whether or not we intervene. Along with governmental agencies, numerous individual and organizational actors make self-interested, unilateral decisions in the regional space (Alberti 2005). Some of the outcomes are unexpected and undesirable. Actions in any sector are intertwined, with system consequences—some unanticipated—in other sectors. Planners prefer to be forewarned, to prevent or mitigate some of the unintended consequences. However, the joint outcomes of unilateral and planning decisions are often difficult, if not impossible to predict with the accuracy necessary for action. To avoid costly or irreversible mistakes, planners need to explore region-wide consequences of plans both on targeted and non-targeted system components. Increasingly, scenarios are used to anticipate ranges of some of the system-wide responses to ranges of specific planning interventions.

Adaptive and mitigating responses to climate change exemplify both the complexity of social-ecological systems, and the difficulties planners encounter in anticipating results of plans and in avoiding negative surprises. We focus here on regional land set-asides for forestation, which may affect the number of jobs at locations losing development space. Forestation mitigates climate change in the long run by sequestering carbon, while in the short run sustaining and enhancing ecosystems' diversity, and providing other desirable ecosystem services and recreation. However, forestation for climate change and ecosystem services requires specific locations (Matthews et al. 2014). For instance, new trees at the edge of existing forests grow faster (Briber et al. 2015) and counter fragmentation, contributing to ecosystem health (Reinmann & Huitra 2017).

We propose to use a dynamic model we devised for generating anticipated numbers of jobs in time in a region's municipalities (Kaufman et al. 2018). Based on the number and location of jobs in a regional space in two initial years, the model yields the regional spatial configuration of jobs, with only four nonlinearly estimated parameters, using publicly accessible data. We have applied this model to Northeast Ohio (NEO) and Dallas-Fort Worth (DWF) data (2001-2015). We compared actual and predicted municipal proportions of the total number of jobs in each region. By 2015, we obtained actual-predicted correlations of .98 (NEO) and .99 (DWF). We generated scenarios for policies directly targeting the number of jobs in selected municipalities and discovered the consequences for proportion of jobs in other municipalities in the two regions.

Here we consider a regional forestation plan expected to indirectly affect the number of jobs at different locations in Northeast Ohio. We have found the existing forests in NEO, to which the plan would add forest in adjacent places that would enhance the likelihood of generating healthy, sustainable and diverse ecosystems. We also identified forest-adjacent clusters of vacant commercial and industrial land (2013 data, the most recent available) that could be set aside for forestation. In the absence of a set-aside plan, these areas would likely be redeveloped with similar uses, which would provide employment. We have explored the NEO relationship between percent commercial and industrial area and respective percent jobs in a locality. We have found that—in a first approximation—it is safe to assume that they are similar.

We generate a non-intervention regional jobs scenario, and two scenarios with various levels of set-asides for forestation. We estimate model parameters with data from 2012 and 2013. Beginning in 2014, we set aside the vacant commercial and industrial land available in each municipality, to explore at two levels the effect on jobs location in the region for 2014-2040, including 2015-2018 for which we have actual data. Our results can inform regional plans and help communicate with regional stakeholders.

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Key Words: anticipatory network models, regional employment location, spatial dynamic location model, planning scenarios, forestation for climate change

REIMAGINING TRAFFIC SAFETY DISCOURSE: CIVIC TECHNOLOGY AND VISION ZERO
Abstract ID: 683
Individual Paper Submission

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Over the past decade, smart city planning discourse has been accompanied by a counter thread: civic technology (Wilson and Chakraborty 2019). Civic technologies engage communities. For communicative planners, civic technology can mean using new participatory approaches such as crowdsourcing and local open data platforms (Seltzer and Mahmoudi 2013; Schweitzer and Afzalan 2017). Yet the "civic hackers" who engage with these processes may also be activists who reveal "the hidden workings of abstract systems" (Schrock 2016) in relation to or even in opposition to the efforts of planners (Maharawal and McElroy 2018). In this article, we build upon recent explorations of civic technology by considering its role as a network of citizen knowledge production in service of a particular public good. In short we ask: can civic technology actually move the needle on government decisions within a particular policy area? And in doing so through the involvement of the public, in what ways does civic tech present a counter to the dominant smart cities paradigm as suggested by Wilson and Chakraborty (2019)? What are the implications of this for planning practice?

To explore these questions we conduct a case study of the role of civic technologies in the traffic safety discourse surrounding the implementation and assessment of Vision Zero in New York City. The Vision Zero approach was originally developed in Sweden in the late 1990s. Its ambition to achieve zero fatalities in a transportation system demands a strategy that goes beyond top-down analysis and provision. In 2014, New York City's mayor released a Vision Zero Action Plan in partnership with the City Council, varied city agencies and private sector organizations. In subsequent years the program has seen a reduction in speed limits, increases in bike lanes, street design changes, and new legislation. While overall traffic fatalities have declined for most years, pedestrian and cyclist deaths have experienced increases. Meanwhile, an expanding community of activists and media actors have engaged with the language, policies, and politics of Vision Zero in NYC through civic technologies that enable users to report and share their experiences, as well as conduct analyses and assemble their own evidence of progress or failure in traffic safety. The civic technologies our case study considers include How's My Driving NY, Reported NYC, On the Bike Lane, Crashmapper, and Vision Zero View among others, most of which emerged out of New York City's civic tech ecosystem or that depend on its open data platform, NYC Open Data.

Our findings, based on discourse and document analysis, demonstrate how civic technologies have supported new forms of safety activism, albeit alongside problematic forms of everyday surveillance. They have also contributed to policy decisions, such as the passing by the New York City Council of the 2020 Dangerous Vehicle Abatement Law requiring drivers to take a safety course based on their number of traffic violations. On the other hand, the prevalence of fatalities in recent years indicates there are basic infrastructural and institutional challenges for which local activism cannot fully compensate. This is where local government--including the nature and quality of the interaction between planners and civic technologies--becomes important. A comparison between an advocacy online mapping tool and a government-developed tool is central to our analysis. We contend that in the smart city, planners need activists, and activists need planners to collectively produce knowledge towards confronting urban problems. We conclude by considering the broader theoretical implications of this case for other applications of civic technology in planning practice.

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Key Words: Civic Technology, Vision Zero, Smart Cities, Traffic Safety

ESTIMATING THE CAUSAL EFFECT OF UBER & LYFT CARPOOLING ON PARKING VIOLATION IN NYC
Abstract ID: 748
Individual Paper Submission

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Introduction

Carpooling is supposed to reduce parking demand as many more auto trips will not require vehicle parking at the trip end. This argument is one of the major social benefits of Transportation Network Companies [1]. However, it has not been well proved. This paper aims at exploring Uber & Lyft carpooling impact on parking violations in New York City. It leverages the power of machine learning and statistics to proves the causal effect. The most effective way of establishing causality is controlled study [2]. In this paper, it is estimated by Difference in Differences (DID) within a natural experiment [3], and cross k-means clustering was implemented to pair up homogeneous taxi zones as control groups and treatment groups respectively. The results show a negative causal effect between the number of Uber & Lyft carpooling trips and parking tickets, indicating that Uber & Lyft help reduce parking violations and likely parking demand in NYC. Given the controversial issues around carpooling services, this paper sheds light on the impact of Uber & Lyft, offers policy insight to the NYC Taxi and Limousine Commission regulation, and provides a proxy to understand parking demand [4].

Methodology

Difference in Differences (DID) is conducted to explain the causal effect of Uber & Lyft Carpooling on parking violations. A natural experiment was studied using observational data from 2014 to 2018, taking the treatment of Uber & Lyft starting carpooling in NYC in December 2014. Homogeneous taxi zones are cross-paired to be 'treatment groups' and 'control groups' mutually, using cross k-means clustering in terms of demography, economy, transportation, parking, etc. The intervention effect is calculated by comparing the change over 4 years in parking violation for the control and treatment the groups. And Pearson correlation analysis between the intervention value and intervention effect is applied to measure the strength of causality.

To check whether the result is concrete and not sensitive to method selection and model parameter, Fixed Effect Model (FEM) is built, and different k-means model parameters of n_clusters and random_state are tested. If the estimated effect is changeless with different methods and different parameters, the result will be solid and reliable.

Results

As a result of DID, Uber & Lyft Carpooling rides significantly reduced parking violations in Manhattan from 2015 to 2018. The average estimate of causal intensity for Manhattan is -0.037, which indicates that every increase of 27 Uber & Lyft Carpooling trips causes a decrease of 1 parking ticket. As a validation, Fixed Effect Model (FEM) results show that the average effect Uber & Lyft carpooling has on parking violation is 0.0264, with a confidence interval of (-0.029 to -0.024) and a p-value under the statistical significance level. This significant result is consistent with that of DID. In addition, the parameter robustness test shows that the causal effect is stable. In conclusion, at least in Manhattan, the result that Uber & Lyft carpooling has a negative causal effect on parking violation is reliable with an average effect intensity of approximately 0.03.

Conclusions and Discussion

This paper demonstrates that Uber & Lyft Carpooling can reduce parking violation in NYC. It serves as an example to combine causal inference and machine learning methods to prove unnoticed potential effects of ride-share services. Reducing parking violation can be regarded as a positive impact, and also have the following effects such as the reduction of parking enforcement pressure for the city. In this aspect, Uber & Lyft could be beneficial to NYC, and potentially to other major cities in the world.

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Key Words: Carpooling, Parking Violation, Causal Inference, Natural Experiment, Difference in Differences

UNVEILING URBAN STRESS USING TWEETS: MODELLING THE IMPACT OF BUILT ENVIRONMENT STRESSORS ON MENTAL WELLBEING
Abstract ID: 765
Individual Paper Submission

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Nearly one in five adults experience some form of mental health issues, and one in 24 has severe mental illness in the United States (APA, n.d.). World Health Organization (WHO) have pointed out that globally slightly more than one in ten people live with mental health disorders (Ritchie & Roser, 2018). The suicide rates in the United States have increased to 24% between 1999 and 2014 (Curtin, Warner, & Hedegaard, 2016). The rise in mental wellbeing is more often than not attributed to Urban Living that comes with opportunities like access to better jobs, health care facilities, education, etc. However, rising inequalities, lack of affordable housing, lack of restorative environment, and rampant crimes, have raised the risk factor of psychopathologies in the cities. As the burden of mental health disorder continues to rise, it becomes pertinent for urban planners to understand how the built environment impacts the mental –wellbeing of its residents. Early detection of stress, and understanding its relationship to the built environment can allow planners and policymakers to take necessary steps. Vulnerable residents can be helped through placemaking strategies or by innovative community organizing campaigns, making them aware of their stress, and various stress mitigation strategies. With the constant progress in the public discourse online, more public health officials and stakeholders are inclined to use new mediums to assess mental health (De Choudhury, Gamon, Counts, & Horvitz, 2013). Online medium allows early detection of stress or mental wellbeing of residents across larger geographies, and cultures, e.g., Twitter is one such online medium where people can share their experiences and tie them with locations (geo-tags).

This research explores the association between people's mental wellbeing and the built environment of communities where they live, work, and play. Machine learning techniques are used to identify the stressed and de-stressing tweets of individuals. The built environment surrounding the locations of the tweets is assessed by the streetscape, land use diversity, points of interest, access to parks and green spaces, access to public transportation, and accessibility by biking and walking. Finally, through spatial clustering techniques, we identify the set of built environment variables that are associated with stressed and de-stressing Tweets (Chu, Thorne, & Guite, 2004).

Through this research, we intend to widen the scope of mental wellbeing and urban planning research from the scale of isolated urban developments and neighborhoods to cities (Halpern, 1995). As the factors affecting the mental wellbeing of people often vary across cultures and geography, the stress threshold varies for people living in different cultures. Integrating the use of big crowdsourced data will not only expand the research horizon but also allow researchers to unveil the complex relationship between mental wellbeing and the built - environment(Plunz et al., 2019).

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Key Words: Stress, De-stressing, Tweets, Built environment, Machine Learning

A QUANTITATIVE PERFORMANCE EVALUATION OF URBAN REGENERATION PROJECTS USING BIG DATA IN KOREA: CASE STUDY OF 13 URBAN REGENERATION FLAGSHIP PROJECTS
Abstract ID: 768
Individual Paper Submission

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Since the 1960s, Korea has seen a steady influx of large population into cities due to rapid industrialization and urbanization. To renew a number of housing complexes built during the period, numerous urban renewal projects including redevelopment and reconstruction projects, have been implemented. Large-scale renewal projects, however, caused many social problems such as the collapse of community and the discrimination of housing welfare among income brackets. With criticism of renewal projects lasting more than 50 years, new paradigm of urban regeneration emerged. Since the enactment of the regeneration act in 2013, the central government has implemented 13 urban regeneration flagship projects in 2014 and 33 regeneration projects in 2016. After setting urban regeneration as one of the national agendas. the present government has been pushing for 100 urban regeneration New Deal projects every year.

In terms of assessing the achievements of the projects, a set of performance indicators and measures is presented when a local government establishes a regeneration action plan. When the local government submits an annual performance report, the authority conducts a comprehensive evaluation. The evaluation of most projects makes the objectives of the projects feasible by monitoring the performance indicators and feedback the results to the management entities. However, studies are insufficient of the performance assessment of urban regeneration projects in terms of the composition and measurement of the indicators and evaluation method. Ho (1999) argued that the performance evaluations of the urban regeneration projects in the UK were neither objective nor valid because they did not consider the outcomes of various relevant studies. Also, it was claimed that the assessment of the urban regeneration projects completed in Western Europe has not been fully made although they were critical for enhancing the vitality and viability of cities (Guimarães, 2017).

Recent studies offer new ideas on how to evaluate and monitor urban regeneration projects. The concept of sustainable urban regeneration, establishment of the set of indicators, hierarchical model and multicriteria analysis has been proposed (Hemphill et al., 2002). It is suggested that selecting and measuring relevant performance indicators, evaluation models and analysis methods are important to ensure sustainable urban regeneration projects (Hemphill et al., 2004a, 2004b). In order to monitor and evaluate their performances, it is important to use instant and quantitative data, such as big data and real-time data, along with a set of measures (Marsal-Llacuna et al., 2015; Jung et al., 2017).

We first set up the indicators to measure the performance of urban regeneration projects by utilizing big data such as mobile communications and credit card data. This study aims to analyze the temporal changing patterns of the urban regeneration flagship projects from 2013 to 2019 in terms of performance evaluation. A set of indicators is compared between the project area and the municipalities on a monthly basis. It is also examined if the cross correlation and granger causality are significant between them. Based on the concept of urban regeneration and sustainability, the indicators are divided into social, economic and physical and environmental sectors. The social sector considers the indicators of settled population and moving population using mobile phone data. The economic sector consists of the measures of credit card sales, newly established companies and small businesses. Also, the physical and environmental sector encompasses the measure of building permits.

In the preliminary results, despite the implementation of the projects, the number of settled population continues to decrease in the project areas, and credit card spending also decrease in small and medium-

sized cities. In addition, credit card spending decreases although the number of moving population increases.

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Key Words: Urban Regeneration, Flagship Project, Monitoring and Evaluation, Quantitative Indicator, Big Data

PLANNING AND THE CHALLENGE OF SPATIAL DATA PRIVACY
Abstract ID: 779
Individual Paper Submission

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The emergence of new data sources and analytical techniques enables the collection, recording, and analysis of unprecedented amounts of information, both online and offline, by planners and other city administrators. As cities attempt to capitalize on these new developments in pursuit of smarter urban governance and socio-economic progress, they encounter growing data privacy challenges, which can impede data sharing, cause economic harm, and exacerbate social inequity (Whittington et al., 2015). In particular, recent research and prominent court cases highlight the ease with which spatial trace data can be used to identify individuals (Carpenter v. United States, 2018). While such challenges are prominent in law and information science and pervasive in city administration, they are still quite foreign to the field of urban planning. This paper introduces the challenge using the theoretical frame of transaction cost economics, and demonstrates the empirical measurement of privacy risk from spatial traces of people in the built environment, as in mobility data.

As a form of government intervention, planning often finds its intellectual support in the argument of market failure and transaction costs. Planning research and practice have primarily relied on theories and empirical studies of land and infrastructure, though the same theories are applicable to information and the study of privacy (e.g., Whittington and Hoofnagle, 2012). From a transaction cost perspective, people are increasingly exchanging information with public and private organizations, presumably to benefit from improvements in services. However, without governance structures to protect their interests, people may never know the extent to which the data is used to harm them, or benefit others at their expense. Such vulnerability can be estimated by the asset specificity of the transaction, or in other words, how unique a consumer's information is when compared with other users. Planners are already keenly aware of the aggregation and disaggregation of people, but may be less aware of the implications for the privacy.

Studies have showed that anonymized spatial traces remain uniquely distinguishable due to the high

dimensionality of spatial data, created by the tuple of coordinates and time stamps (De Montjoye et al. 2013; Sweeney, 2002). This paper demonstrates how variation in the built environment heightens privacy risk, and highlights the tradeoffs between data utility in urban planning and the use of privacy-preserving algorithms. Utilizing a GPS mobility dataset, this paper measures the risk of re-identifying individuals from anonymized datasets with common privacy measurements, such as k-anonymity, and investigates associations between measured privacy risks and built environment characteristics, including urban density, property value, and walkability. The paper also applies Shannon entropy, and estimates the tradeoffs between privacy risk and information loss at spatial and temporal aggregation levels common to planning.

The results demonstrate that, due to differences in consumers' accumulated location traces, privacy vulnerability is heterogeneous across built environments. Furthermore, with an understanding of how privacy risk can vary, planners can play a proactive role in the design of privacy policy and location choice of sensors and location-based services, with direct impacts on privacy.

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Key Words: Data Privacy, Transaction Cost, GPS Mobility Data, K-anonymity, Shannon Entropy

LISTENING TWEETS OF GROWING AND DECLINING CITIES: AN EVIDENCE FROM DENVER AND DETROIT
Abstract ID: 796
Individual Paper Submission

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The level of subjective well-being—often called as happiness— has long been measured by expressed preference (e.g., survey or interview) in the previous studies (Park 2017, De Jong et al. 2012). These measures are useful, while there are several barriers to collect the data such as small sample size, return rate, survey types, time, and budget. To compromise these obstacles, there has been an increasing interest in using big data, particularly data retrieved from social network service (SNS) as a form of social listening. Even though there are several downsides of using SNS data including biased age groups, inconsistency in data collection, or privacy issues, SNS can be useful data resource to identify the level of subjective well-being, in particular emotions. With the intrinsic limitation of using SNS data in mind, this study attempts to identify the association between sentiments as a surrogate of happiness and the neighborhood conditions including demographic, socio-economic status and built environment using Twitter posts. This research also highlights the sentiments of people in declining cities where the vitality of the whole city has constantly declined. It is not always true that people in declining city would be less happier than those in growing cities, but declining, depopulating, or shrinking often implies unhealthy, undesirable, or unhappy (Hollander 2010). In order to explore this assumption, this study examined whether the patterns of positive and negative sentiments were consistent in both types of cities with the comparison between Detroit, MI and Denver, CO in the U.S.

This research collected the sentiment data—only geo-coded—from Twitter posts for 14 months from January of 2016 to December of 2017. Username, text, longitude and latitude of each mention were

retrieved using the Twitter developers' APIs. The tweet posts from Bots that share automated messages were filtered out using the complete automation probability (CAP) score. 31% of the original data whose CAP scores with 0.5 or greater that generally implies the Bot accounts (Levente et al, 2019) were removed. The final size of tweets was 123,144 for Detroit and 171,126 for Denver. The sentiment analysis was done by using AFINN lexicon dictionary developed by Hansen et al. (2011){Hansen, 2011 #24}{Hansen, 2011 #24}, which is able to classify positive, negative, and neutral words. Since their dictionary has been used in several studies (Lowe et al. 2011, Koto and Adriani 2015, Markovikj et al. 2013), authors assumed that AFINN lexicon was already validated for the academic research. Cluster and hot spot analysis were done to identify the spatial patterns of sentiments by using the geo-coded point data. Python 3.7.0 and ArcMap 10.4 software were used for Twitter data collection and mapping. The Ordinary Least Square Regression (OLS) models were ran to identify the association between neighborhood conditions and sentiments.

The preliminary outcome of this study indicated that 1) the proportion of positive and negative tweets was higher in Denver (positive: 34.5% and 32.0%, negative: 12.5% and 11.3%), but not substantially high; Most tweets were concentrated around downtown; 3) neighborhoods with more people of higher education and less minority were likely to be happier; and 4) people in neighborhoods located closer to the CBD in both Detroit and Denver. Interestingly, neighborhoods with higher unemployment rate in Detroit tend to be happier. The outcomes are expected to contribute to the usage of big data in planning field and also being a basis for the improvement of social and physical conditions of unhappy spots and push those neighborhoods in a priority, if aids are necessary.

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Key Words: SNS, Sentiment, Twitter, Shrinking Cities

DELINEATING FINE-SCALE URBAN FUNCTIONAL USE FROM POINTS OF INTEREST DATA WITH WORD EMBEDDING MODEL
Abstract ID: 804
Individual Paper Submission

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Urban function has been studied in both urban planning and geographic information science for decades. Understanding urban functional use not only provides a geospatial feature for urban modelling but also helps to detect urban problems, evaluate planning strategies and support policy-making especially in highly urbanised and densely populated metropolitan areas (Batty, 2012; Arsanjani et al., 2013). Different from the traditional studies focusing on physical environment with remote sensing data such as land use classification and land use boundary detection, studies now focus on socio- economic characteristics of land/building functional use with detailed and fine-scaled crowdsourced data, i.e. social media data, points of interests and other open-source and volunteered datasets (Crooks et al., 2015; Frias-Martinez

and Frias-Martinez, 2014; Zhi et al., 2016). Among these sources, points of interest (POIs) are popularly applied in understanding urban functional use (Niu and Silva, 2019). POIs refer to point-based locations such as commercial property, public spaces, transportation facilities, etc. associated with detail including location, name, postcode, address, and so on. The distribution of POIs and combination between POIs varies in different urban areas. This variation reflects the preference of urban activities and indicates the pattern of urban functional use at a larger scale. Moreover, POIs are highly disaggregated data with precise location and can be applied at a variety of scales. However, previous work neither frequency-based approach nor neural word embedding such as Word2Vec considered the spatial relationship between POIs in the context of the first law of geography. In this paper, we recognised the capabilities of neural word embedding in delineating urban functional use from POIs and introduce neural network model (Doc2Vec) with sentence/paragraph feature input in the context of geographic space.

This paper chooses the metropolitan area of London as the study area. This paper employs POIs from Ordnance Survey, which is the national mapping services in for Great Britain. This taxonomy is three levels, including nine groups and 52 categories and 582 classes. For each item in this POI dataset, it contains information such as Identified code, name, coordinates, address, postcode, telephone number, brand, and so on. Specifically, the dataset used in this case study is updated in March 2019 with 420,559 POIs throughout the London metropolitan area. Since this paper recognised the advantage of Doc2Vec model in term of presenting the relationship between POI categories with considering the spatial heterogeneity, we apply the model to POIs data by conducting nearest neighbour query of POIs based on London road network (40,000 random points), POIs sequences construction with local tags, vectorisation for POI categories by cosine distance, evaluation of Doc2Vec and clustering urban functional areas with K-means. The contribution of this paper is to introduce a new data source and a new tool for understanding the dynamics of urban functional use from bottom-up and provide a tool to predict and monitor the impact of urban dynamics.

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Key Words: Urban Functional Use, Points of Interest, Word Embedding Model

PLANNING SUPPORT SCIENCE: BEYOND PLANNING SUPPORT SYSTEMS (PSS)
Abstract ID: 825
Individual Paper Submission

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Never has there been a more important time for communities, planners and policymakers to work together with researchers more closely and to make use of Information and Communication Technologies (ICT) to address the pressing issues facing the cities in which we choose to live in increasing numbers. We are faced with major challenges such as increasing number of people living in slums or conditions of multiple deprivation, increases in extreme climatic events, and global health crises. These major global challenges sit alongside the more routine requirements to produce solutions to physical, economic, social problems associated with urban and regional development and the drive towards more sustainable environments.

Yet several encouraging signs have emerged in this current age of digitization, big data and smart cities indicating that new ICT and data driven approaches (data science and informatics) may be brought to bear to support researchers, planners and policy-makers in confronting some of the grand challenges as well as the routine tasks, many of which might be undertaken more effectively. Planning Support Systems (PSS) are computer-based tools which can assist planners to more effectively undertake their day to day planning-specific activities.

PSS came into being in the late 1980s as described by Harris and Batty (1993). They arose through a convergence of efforts being undertaken in the areas of GIS, large-scale urban models and decision support systems (DSS). In the 1990s, a number of PSS were developed which enabled planners to interact and use these tools themselves through graphical user interfaces (GUIs). Early PSS included systems for modelling land use such as What if? and UrbanSim, systems for measuring conditions and change such as INDEX, and systems for encouraging community participation such as CommunityViz (Brail 2008). Several of these PSS, and others, have stood the test of time and, in their various incarnations, are still used in planning practice 20 years on.

However, as Vonk et al. (2005) and others have noted, the implementation of PSS has not been without its challenges with the adoption in practice not being as widespread as the PSS developer community might have hoped for (Geertman and Stillwell 2003). Yet with the emergence of the smart city, digitisation, big data and the opening of government data repositories, there are new opportunities for PSS to embrace this shift towards the digital paradigm and increase its visibility and uptake as a geo-information toolkit which can support a number of urban planning tasks. It is due to this much widened perspective on PSS that we prefer to speak of an upcoming scientific field of 'Planning Support Science' with an emphasis on the goal of support instead of focusing just on the system-side of PSS (Geertman 2013).

For their acceptance in planning practice, PSS developed in the 'computer laboratory' need to be adapted to the specifics of planning practice, to the intended application, and to the context of that application. This adaptation, its needs and its associated methodology have become a field of research in its own right. In addition, the upcoming concept of smart city has blurred the distinctions between systems, tools, instruments, apps, social media, big data, et cetera, that by itself can fulfil an ICT-based supporting role in planning practice. It is for these reasons too that we prefer now to use the term Planning Support Science. The intersection of Planning Support Science, city or urban science and data science is offering exciting new possibilities in data driven approaches to city planning.

In this contribution we will elaborate on the transformation of PSS into PSScience, its preconditions, consequences, and recent applications (Geertman and Stillwell 2020).

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Key Words: planning, support, science, pss, smart

CLIMATE'S SILENT KILLER? EAST BOSTON EXTREME HEAT MAPPING PROJECT
Abstract ID: 835
Individual Paper Submission

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Central theme/Research Hypothesis

In large dense cities, unshaded roads and buildings absorb heat during the day, then at night, radiate back into the surrounding air creating "urban heat islands" .With Climate change and increasing global temperature, local temperatures are increasing in both frequency and intensity. On the days when local temperature is high, additional heat emitted by paved and concrete structures can produce dangerously hot areas within specific city neighborhoods. In addition, building without adequate cooling systems have the potential to retain heat, even during non-extreme events. Heat held inside infrastructure like buildings may be higher than outside temperatures for up to 72 hours.

Mainstream planning strategies have relied on open spaces, parks, green infrastructures, waterfronts, cooling stations or emergency shelters to combat urban heat. However, not all resident has equitable access to these interventions nor can afford air conditioning People living in densely populated residential housing, those who lack mobility, reliable transportation, or are disabled, medically ill, the old and very young, are dis-proportionally impacted by the lack of realistic or accessible remedies.

This collaborative, participatory pilot research is an attempt to bridge science and community activism through a simple data collection and analysis system which identifies critical threats to well-being and climate resilience. Our research seeks to understand: How can transdisciplinary approaches and methodologies "place" data to develop just, equitable and humane approaches to climate adaptation? How might the residents of East Boston neighborhoods' leverage the process of narrative and geospatial mapping to promote holistic understanding that includes all people for whom the city is "home".

Research Approach

This pilot project synthesizes people-of-place narratives and stories with participatory GIS using mobile phone applications to create "story maps". Story maps create new forms of data (which communities own and control), a pathway toward deeper understanding the layered challenges of "lived experiences". Story maps might be used as a political capital for climate activism, agency, advocacy and adaptation. Neighborhood residents create their own maps, elevating voice to local needs and priorities, and political projects of resilience and resistance.

Findings

The research contributes to both technology-mediated citizen involvement and urban planning participation methods to advance inclusive planning with readiness to incorporate unfamiliar areas, its understanding and ways to effective management for climate change. This pilot also evaluates space and relevance of different age group participation for the effective data collection, interpretation, data ownership and advocacy of community need to inform planning/policy for mitigation of extreme heat.

Relevance

This research is a step towards problem solving by integrating communities, science and policy during the time when climate change is becoming new "normal" and communities need to come together in combating it. The research builds on a foundation that every urban resident brings a unique objective, perspective, history, and set of needs determining the identity and location of the high concern areas that would have missed from traditional approaches.

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Key Words: Vulnerability, Urban Heat Islands, Extreme Heat, Storytelling, Participatory GIS

SMART CITY AS PLATFORM, SMART CITY AS INFRASTRUCTURE, SMART CITY AS CONVENOR: A COMPARISON OF HOW SMART CITY TECHNOLOGY POSITIONS 'THE CITIZEN'

Abstract ID: 870
Individual Paper Submission

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On trade show floors and city halls worldwide, vendors pitch their smart city technology with promises of more efficient, inclusive, sustainable, and accountable cities. While it is still relatively early days in terms of smart city activity, many jurisdictions are moving ahead with developing plans and policies. Vendors are selling, governments are buying, decisions are being made and the built form is being shaped all under the rhetoric of deploying technology to help local governments and their cities become more efficient, transparent, accountable, and inclusive.

Ultimately, the decision to use this technology has real implications for the role(s) of citizens in local governance (Greene, 2019; Johnson, Robinson and Philpot, 2020). There are concerns about citizens being unitized as data points, monetized as data sets, their citizenship being reduced to the role of a consumer and/or units of economic or data production, and their actual agency being erased by the platformization of city hall (Robinson and Biggar, forthcoming). At this pivotal point in the planning of cities using new technologies, before technology is deployed at a large scale, this paper examines early stage smart city platform deployment to evaluate how these platforms position citizens in relation to traditional democratic actions of city hall.

This paper presents findings from an evaluation of nine urban technology platforms that are being used in North American cities. These platforms provide services and gather data related to municipal infrastructure problems, active transportation, multimodal mobility, waste management, street furniture and public wifi, last mile mobility, and citizen engagement. For each platform we consider how the vendor is positioning its role in quality of life improvement for urban residents; who the user groups are of each platform; and the mechanics of how the platform operates and what kinds of data it requires or gathers. Using these inputs we then deploy Johnson et. al's type, tap, tweet, pass framework for evaluating citizen roles in smart cities to evaluate which kinds of citizen-platform interactions are intended to serve which goals and what are the implications of these actions citizens and governments.

The results of this evaluation are used to answer the following questions: Is there 'citizenwashing' taking place where vendors make claims of transformational change, but in reality they are selling a transactional product? To what extent do these technologies empower/marginalize citizens or even empower or marginalize government? And how is the introduction of these technologies impacting citizen-government interactions? Ultimately, this research will provide practicing planners with feedback about the deployment of these platforms might influence their work with community members (Desouza et. al, 2014) while also making a contribution to planning scholarship about smart cities and citizen engagement

and participation efforts (Arnstein, 1969).

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Key Words: smart city, citizen engagement, public participation, technology

BIG DATA FOR CITIES IS NOT NEW
Abstract ID: 903
Individual Paper Submission

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Data is a medium to construct and convey ideas, just as a collection of words makes a story or an artist who uses paint to provide an image of the world. Data analytics and the resulting insights communicated through visualizations have done tremendous good in the world, from easing and stopping disease to exposing exploitation and human rights violations. At the same time, data analytics and algorithms all too often exclude women, the poor, and ethnic groups. How do we reconcile the potential of data to marginalize people and reinforce racism with its ability to end disease and expose inhuman practices? These two realities remind us that the same data in the hands of different people can produce wildly different outcomes for society. That is what is at once so exciting and alarming about using data to change the world. For many city planners, their relationship with technology, data, and its use in communities is an uneasy one for just this reason.

"Big Data for Cities is Not New," positions the reader within this larger narrative, providing examples of the ways those in power have used data to shape our cities. How they have reinforced structural racism, and how data has helped enforce the marginalization of various populations. However, at the same time, the article illustrates the many benefits analyzing data has afforded societies, such as the provision of social services and stopping the spread of disease. The juxtaposition of these two outcomes reminds the reader that the use of data is defined by the person analyzing it.

This article reminds as that data is as old as civilization itself. The earliest forms of data collection recorded property rights, land production, assets—largely to determine taxation. During the Victorian era society's increased fascination with using scientific methods to understand social processes launched what might be considered the first open data movement. The excitement of these early statisticians helped to promote the release of census data, vital statistics, and the development of maps and data analysis. Their work helped to create the field of public health and epidemiology. Early activists, such as W.E.B Dubois', used data visualizations to explain the African American experience at the turn to the 20th century. St. Louis' first Director of Planning in 1917, Harland Bartholomew, used data analytics to segregate, and his early work helped lay the groundwork for the development of the Home Owners Loan Company (HOLC) redlining maps. Postwar America was fascinated with applying data analytics developed during the war

towards urban planning, and the results often led to the marginalization of the poor. These experiments among other examples provided in the book caused data to fall out of fashion with urban planners. However, the popularity of big data and civic technology have created a renewed interest. Learning from these historical successes and failures will equip us to apply data towards policy development more ethically and responsibly.

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Key Words: Big Data, Data Visualizations, Power, Data Science, Ethics

REDEFINING 'CIVIC MEDIA' THROUGH THE LENS OF AN URBAN PLANNER
Abstract ID: 935
Individual Paper Submission

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Information communication technologies have transformed over the last thirty years, including the invention and commercialization of the Internet, the creation of interactive social media, the rapid spread of mobile phones, digital imaging and instant audio making (Allen and Light, 2015). These innovations have allowed individuals to easily increase their stock of knowledge, as well as share their perspectives on various political, social, and economic issues leading to the rise of "civic media." Civic media is the practice of designing, building, implementing or using digital tools to intervene or participate in the public sphere, and the umbrella term encompasses mediated activities initiated by those in power and by non-state actors (Gordon and Mihailidis, 2016).

Existing research explores how planners use social and mass media (Flyvbjerg, 2012; Schweitzer and Stephenson, 2015), how new media is changing users perceptions of cities (Park and Evans, 2018), and how planners use new media tools for public participation (Goodspeed, 2008). Thus, as a field and profession that prioritizes community engagement, participation and collaboration, Civic Media should be at the forefront of contemporary planning practice. This research asks how can planners utilize the tools of Civic Media toward that end.

To answer our question, through content analysis we examine multiple case studies concerning the nexus of Civic Media and planning practice found across academic literature, journalism, and Civic Media itself. Civic Media as currently defined is used to describe disparate practices, from 311-type interfaces to report pot-holes and other minor civic-maintenance and quality of life issues, to coordinating regional relief efforts such as occurred after superstorm Sandy in New York, to national movements such as #MeToo and #BlackLivesMatter, to internationally engaged movements such as the Zapatista uprising and the Arab Spring. While these all represent innovative civic uses of technology that planners should be fluent in, the breadth of the practices is so wide that it endangers the term Civic Media of becoming another empty signifier.

We find that Civic Media, rather than conceived as a general term, is more productively understood when considered from three distinct lenses: one, the primary scale of its use--Local, Regional, National, or

International; two, its power-position (place along a top-down vs. bottom-up continuum); and three, its position along a spatial-virtual continuum. This taxonomy of the specific qualities Civic Media manifests will help planners as they navigate how to best integrate these new technologies into their practice and research. We analyze the potentials and pitfalls of Civic Media use for planners along each category of our taxonomy. The broad cases we examine provide new categories for future planning research.

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Key Words: Civic Media, Social Media, Planning Practice, Community Engagement

DOES OPEN DATA OFFER OPPORTUNITIES TO INFORM COMMUNITY HEALTH? THE CASE OF USING LOW-COST SENSORS TO DEVELOP URBAN AIR QUALITY MODELS
Abstract ID: 953
Individual Paper Submission

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As an effective strategy to develop healthy cities, improving urban air quality is often highlighted by urban planners and environmental scientists (Northridge et al., 2003). Developing air pollution models is commonly used to assess human exposure to air pollutants at locations without air pollution measurements (Jerrett et al., 2005). Among them, land use regression (LUR) models effectively characterize neighboring geospatial features and enable predicting air pollution concentrations nationwide (Hoek et al., 2008). However, existing national LURs are often trained with limited and expensive ground-level regulatory monitors (e.g., Environmental Protection Agency Air Quality System [EPA AQS]) and may fail to capture within-city spatial variability (Kim et al., 2020). Emerging big and open data from community-based air quality monitors allows for opportunities to improve existing model development and supplement locations where regulatory monitors are not available (Kaufman et al., 2017).

PurpleAir is a low-cost sensor network that offers publicly available real-time and historic air pollution data worldwide (e.g., $PM_{2.5}$: particulate matter with a diameter of less than 2.5 micrometers). This open data source provides more community-level air monitors with increased spatial resolutions as compared to traditionally limited number of regulatory monitors. In particular, it measures $PM_{2.5}$ concentrations in different microenvironments including traffic segments, university facilities, and suburban environments. While this dense network has been deployed, few studies have integrated it into LUR models to help estimate national-scale exposures. In this study, we use the PurpleAir sensor network to develop national LUR models for $PM_{2.5}$ in the US with the goal of assessing whether such community-based open data could improve model performance and inform community health.

We retrieved and calibrated the annual average $PM_{2.5}$ concentrations from the low-cost sensors (i.e., PurpleAir sensors) from 6 urban areas (i.e., core-based statistical areas) in the US where at least 7 EPA and PurpleAir sensors were available. Our independent variables included 11 categories (n = 339) of geographic features (e.g., traffic, population, land use, and satellite air pollution measurements). We developed both low-cost sensor-based LUR models (using only the PurpleAir sensors) and hybrid LUR models (using both the regulatory and low-cost monitors) for predicting annual average $PM_{2.5}$ concentrations; we applied a partial least squares-universal kriging approach. Finally, we compared the long-term concentration estimates derived from exposure assessment of different LUR-derived population-weighted predictions.

Our results showed that LUR models using only the PurpleAir sensors showed reasonable performance: 10-fold CV $R^2 = 0.66$, mean absolute error [MAE] = 2.01 µg/m^3. However, the external evaluation using the EPA monitors suggested that the PurpleAir-only LUR models may consistently over-predict $PM_{2.5}$ concentrations. We observed that the hybrid LUR models performed better as compared to the PurpleAir-only LUR (R^2: 0.85, MAE: 1.02 µg/m^3) indicating that regulatory monitors and low-cost sensors could be integrated to refine LUR models. We also noticed that both the hybrid LUR and PurpleAir-only LUR were spatially correlated with the regulatory-based LUR (e.g., Los Angeles: R^2: 0.82, MAE: 0.77 µg/m^3). Likewise, the LUR-derived population-weighted predictions suggested that integrating low-cost sensors into LUR may help catch hot spots of higher $PM_{2.5}$ concentrations.

We found that LUR model development using low-cost sensor network is feasible to capture spatial variability that maybe missed by the regulatory monitors and obtain promising performance where regulatory monitors are unavailable. Our study uses the 6 urban areas to explore the integration of community-based open data into urban air quality modeling. As such, national-scale low-cost sensor-based LUR models could be developed to track exposures more accurately and inform planning policies towards health-promoting communities.

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Key Words: crowdsourced data, urban air quality, human health, environmental planning

DATA FEMINISM: IMPLICATIONS FOR PLANNING
Abstract ID: 979
Individual Paper Submission

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As data are increasingly mobilized in the service of cities, governments and corporations, their unequal conditions of production, their asymmetrical methods of application, and their unequal effects on both individuals and groups have become increasingly difficult for data scientists--and others who rely on data in their work--to ignore. But it is precisely this power that makes it worth asking: "Data science by whom? Data science for whom? Data science with whose interests in mind? These are some of the questions that emerge from what we call data feminism, a way of thinking about data science and its communication that is informed by the past several decades of intersectional feminist activism and critical thought. Illustrating data feminism in action, this talk will show how challenges to the male/female binary can help to challenge other hierarchical (and empirically wrong) classification systems; it will explain how an understanding of emotion can expand our ideas about effective data visualization; how the concept of invisible labor can expose the significant human efforts required by our automated systems; and why the data never, ever "speak for themselves." The goal of this talk is to introduce the data feminism framework, along with its implications for planning, urban science, and smart cities.

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Key Words: Data Science, Feminism, Equity, Quantitative Methods, Gender

ASSEMBLING URBAN CONSERVATION IN THE COLD SEASON OF TEHRAN
Abstract ID: 990
Individual Paper Submission

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Economic and political crises have, in many cases, contributed to the opening of space for more participation in planning. However, crises can have different scales and dimensions, and participation as a planning strategy can work differently within different social, geographical, and temporal contexts. Therefore, neither crisis nor participation is used as a general term in this paper. My aim is to look at the particularities of participation in urban conservation during the recent critical months in Tehran. In the last two decades, the traditionally rigid and centralized planning apparatus in Iran has shown a slow but growing tendency to cooperate with private investors and civil activists. Together with other challenges, economic sanctions have put unprecedentedly enormous pressure on Iran. This pressure has reached a peak between November 2019 and March 2020. I map the state of urban conservation assemblage in Tehran with an eye on the multiple challenges that rose during the recent months. I observe the interplay of planning instruments and concepts, organizations, human actors, and internet-based social media in the presence of the economic sanctions, the possibility of war, and the coronavirus. Research material for this paper is mainly collected through the ethnographic observation of online social media, academic publications, public events, as well as personal interviews. The findings show how the current circumstances have led to the formation of a tamed, territorialized space of social involvement on the periphery of the official conservation planning assemblage.

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Key Words: Urban conservation, assemblage, participation, crisis, Tehran

ALL THE WAY FROM MACRO TO MICRO: DO MICROSCALE FACTORS OF STREETSCAPES MATTER FOR WALKING?

Abstract ID: 1012
Individual Paper Submission

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The built environment characteristics that influence walkability range from macro-scale urban forms to micro-scale design details (Harvey and Aultman-Hall 2016), but much of the literature focused on macro-scale factors. In our previous studies, we showed the effectiveness of using computer vision and street view images for measuring meso-scale (i.e., a mid-scale between macro and micro, which relates to the overall size and scale of streetscapes) walkable streetscapes and the potential generalizability of the findings. To expand the scope of measurements all the way from macro- to micro-scale, this study turns to micro-scale walkability factors, the most fine-grained features of streetscapes pertaining to the presence and the quality of pedestrian-related physical features such as street furniture, streetlights and traffic signals, crossings, and sidewalks. Despite their potential influence on walking behavior in the empirical and theoretical literature (Alfonzo 2005; Cain et al. 2014), measuring such features is a resource-intensive task as there have been few options other than manually measuring them using, for example, walkability audits.

In this study, we use computer vision and street view images to automate a pre-validated walkability audit tool designed to measure micro-scale pedestrian environment. We combine this measurement with macro- and meso-scale walkability features to construct a comprehensive measurements of the built environment for Atlanta, GA. We first examine the correlations among various scales of measurements. Next, we use a travel survey data to evaluate the standalone, relative, and interactive contributions of various walkability features measured in different scales on walking behavior after controlling for demographic characteristics. We demonstrate the relative importance of measurements in various scales on explaining walking behavior. We show that the image-based measures can capture not only the presence and configuration of the physical features of the built environment but also the perceived quality of the features, offering an opportunity to expand the scope of data-driven research substantially.

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Key Words: walkability, microscale streetscapes, computer vision, Google Street View images

IMPROVING SMALL-AREA POPULATION AND HOUSING ESTIMATES USING ADMINISTRATIVE AND SPATIAL DATA
Abstract ID: 1029
Individual Paper Submission

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Neighborhood-level population and housing forecasts are useful in a variety of settings in demography, public policy, and planning. Although forecasts for large geographies – such as counties – are carried out using complex demographic models, small-area (i.e., neighborhood) forecasts typically rely on a simpler modeling framework. For sub-county projections, the Hamilton-Perry model has been established as a reliable forecast model that requires minimal data inputs. The only information required for the Hamilton-Perry method is the age distributions in the two preceding time periods. However, regardless of the technique used to carry out the population and housing forecasts, small-area projections still suffer from some notable limitations, including the instability arising from the incorporation of small numbers, the unboundedness of the forecasts, and a lack of spatial cohesion.

In this paper, we examine several modifications to the existing Hamilton-Perry method to improve the accuracy of small-area forecasts. In particular, we consider the propensity for any single parcel of land to develop, the maximum density that might be supported within a given neighborhood, and the spatial autocorrelation in the forecasts in computing our small-area projections. To test how the incorporation of these additional data sources affects the accuracy of the method, we generate 10-year forecasts using census tract-level data from the 1990 and 2000 Decennial Censuses. These forecasts are then compared to the actual 2010 Decennial Census counts to produce several measures of numerical and distributional accuracy.

In carrying out our forecasts, we utilize ancillary information available in land parcel databases, infrastructure networks, and other publicly available local data sources. This paper thus contributes to an existing research literature that explores the utility of administrative data in complementing or supplementing population and housing data from other sources, such as the U.S. Census Bureau. The forecasting methods that we derive are important to planners at the local and regional levels, as accurate population and housing projections are necessary in modeling future transportation and housing needs, the implementation and location of community service facilities, and in emergency and disaster planning.

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Key Words: forecasting, neighborhood, population, projections

UNDERSTANDING LONG-TERM LAND VALUE PROSPECTS IN PLANNED NEW URBAN CENTRES
Abstract ID: 1057
Individual Paper Submission

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Land value capture (LVC) is a prevalent approach enabling local communities to recover and reinvest public-induced land value increment, especially in relation to large-scale urban development. However, the state of the art in LVC is considered fairly restricted to the short-term prospects and existing centres of high land values. This leads to many missed opportunities – for instance, planned new centres if successful may well have good prospects of long-term land value uplift (LVU), but such opportunities are off the radar for existing methodologies.

This research aims to develop a new method to measure, model and predict the long-term, comprehensive land value effects and related socio-economic benefits/costs pertaining to new urban sub-centres. Specifically, three research questions are addressed: (1) What is the relationship between investments in housing, jobs and transport infrastructure in creating land value uplift (LVU)? (2) How to create higher LVU in new sub-centres in order to better perform LVC over the long run? and (3) What are the trade-offs between LVU and socio-economic benefits/costs?

To answer these policy-cogent questions, a novel analytical model has been developed, which is able to pinpoint the causes and effects in terms of land values and their implications for value capture and urban growth. This combines spatial equilibrium modelling of business and resident activities with recursive dynamics of land use and transport supply. The key inputs of the model are the changes in the macro economy, demography, technology, infrastructure and land provision. The key outputs are where businesses and people locate, building and land rents, wages and prices of goods and services. The spatial equilibrium and dynamic models interact over decade-long periods for 15 years in the past (i.e. from 2000, for model calibration and validation) and another 20 years into the future (for predictions up to 2035).

Greater Shanghai has been chosen as a fair representative case for sub-centre development for its long tradition in planned polycentricity and large-scale urban investments induced by rapid urbanisation. Despite the paucity of reliable and disaggregated data therein, this research has made systematic use of multi-source urban data (i.e. official statistics, novel online data and proprietary big data) to calibrate and validate the models. Three scenario sets (i.e. trend growth, spatial mismatch and coordinated polycentric derivations) have been tested to explore the possible ranges in potential outcomes regarding future sub-centre development.

As opportunities for LVC are fundamentally market-driven, this research reveals that coordination between different types of development (i.e. jobs, housing and transport) is essential in generating positive externalities that are realised and capitalised in land rents. Following the trend growth, the balance between jobs and housing provision appears to be lost, which will dampen the long-term prospects of LVC in the sub-centres; they are insufficient job opportunities rather than any lack of housing development that will lead to the loss of this balance. In addition, trade-offs between LVC and capitalisation of other socio-economic benefits/costs do exist. The localised circumstances are crucial in determining the location of newly planned developments in order to maximise the potential economic gains (from more value uplift to capture) and socioeconomic benefits (indicated by higher consumer surplus).

The model findings provide new insights for city leaders, developers and other stakeholders in a quantified range of market impacts that are induced by investments in infrastructure and public services. Such an approach would materially improve local governments' abilities to explore LVC options, not only as a financing instrument within current property hotspots, but also as part of a wider policy toolkit that can be utilised to promote social equity, environmental sustainability and business productivity.

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Key Words: Land value capture, Urban spatial structure, Polycentricity, Spatial equilibrium modelling, Urban simulation

LANDSCAPE SHAPE ADJUSTED COMPACTNESS INDEX FOR URBAN AREAS
Abstract ID: 1078
Individual Paper Submission

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It is of significant interest to characterize urban form and its change for various cities (e.g. Schnieder and Woodcock, 2008; Seto et al., 2011) and to study their effect, among other things, on air qual- ity, transportation behaviour and relationships with environment (e.g. Kaza 2020; Stone et al., 2007; Jones and Kammen, 2014). One dimension of urban sprawl is the compactness of the urban area as measured by dispersed fragmentation. In this paper, I illustrate some challenges associated with measurement of this compact urban form especially when using raster datasets and landscape metrics.

Conventionally compactness is defined for a single shape and there are number of metrics that have been proposed over the years. (For reviews see, Maceachren, 1985; Gustafson, 1998; Angel, Parent and Civco, 2010). Angel et al. (2010) extend these concepts to characterize different notions of compactness of a shape by looking other aspects such as dispersion, girth and range. All these metrics are susceptible to issues of resolution and accuracy of the perimeter and area as well proper treatment of holes and other non-simple features that are often found in urban areas. In particular, many of these metrics are designed for a single polygonal or contigu- ous/connected shapes. However, urban areas are often polynucleated and characterized by fragmentation especially at the edges. Similarly, urban growth is often characterized by simultaneous processes of dispersion, coalescence and infill. Shape compactness metrics are local compactness metrics and for urban form we need meso level compactness metrics that take into account multiple distinct and discontinuous shapes at different distances. Li.et. al (2013) proposed ratios of area moment of inertia (MI) as a measure of compactness. Two features of this measure makes it particularly attractive. 1) MI is decomposable individual parts 2) Parallel Axis Theorem. While IMI_u is a good metric for measuring compactness, it has some problems associated with the landscape boundary and urban suitability. I propose an adjustment to this compactness index.

In this paper, I demonstrate that identifying compactness of urban area is complicated by landscape shape and other restrictions. Using 2016 land cover data, at the county level, I demonstrate the effect of these adjustments. Only 14% of the counties see their IMI go up by more than 0.1 and 2% see changes that are more than 0.2. Most of these counties are located in the heavily urbanized North eastern corridor, in the hilly regions of Appalachia, Bayous in the Gulf coast of Louisiana. In the Pacific coast where compactness score is improved, it is due to mountainous and irregularly shaped counties. Another distinct cluster can be observed in counties along the Rocky mountains in Idaho and Colorado. Coastal counties that are con- strained in their development patterns by water in South Carolina and Florida also experience modest changes.

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Key Words: Compactness, Sprawl, Urban form, Landscape Metrics

BEHAVIORAL INTERVENTIONS TO ENSURE EQUITY IN SHARED MOBILITY FOR LOW-INCOME COMMUNITIES
Abstract ID: 1096
Individual Paper Submission

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East Oakland, California has been the victim of racially motivated government policies that identified majority non-white neighborhoods as risky investments, thereby depriving them of essential resources such as housing and transportation infrastructure. Innovations in shared mobility that have given users short-term, on-demand access to cars, bicycles, or scooters have emerged as a possible strategy to alleviate the transportation problems facing these neighborhoods today, such as poor public transit accessibility and lack of vehicle ownership [1].

Despite the potential for shared mobility to address transportation barriers, the demographics of users are not entirely inclusive. Just 8-24% of bikesharing users are non-white, while 29-39% earn a household income greater than $100,000 per year [2]. In a survey of seven U.S. cities, researchers found that college-educated and affluent individuals adopted Uber and Lyft at twice the rate of less-educated and lower-income individuals [3].

While some companies, notably Ithaca Carshare and Indego Bikeshare, have made strides to address these barriers [4], in a review of these efforts to increase equity in shared mobility, I have identified two major shortcomings: few projects conducted a needs assessment to understand what target populations actually wanted, and the majority failed to follow up with participants to determine whether sustained behavioral change occurred. As a result, initiatives to increase equity often fall short of stated goals.

My research targets this gap in the literature by posing two research questions:

1. How can shared mobility meet the specific transportation needs of low-income residents of East Oakland?
2. What are the most effective strategies that can facilitate the access, awareness, and usage of shared mobility by low-income groups?

To explore these research questions, I will conduct a 9-month long pilot project starting in April 2020 with 60 low-income households in East Oakland. I designed the pilot using input from expert interviews (n=9) with local planners, policy directors, and program managers at non-profit agencies. I also completed three focus groups (n=24) with low-income East Oakland residents. Data from focus groups indicated high levels of interest towards shared modes but hesitance towards assuming financial risk for the shared vehicles. Focus group participants also identified potential use cases for shared mobility, in particular as a back-up option for when a personal vehicle was unavailable or for connections to public transit. Data from focus groups were also used to determine which behavioral interventions to explore further in the pilot project.

I will randomly place pilot participants in either a control group or one of three treatment tracks. Treated participants will receive some combination of the following interventions:

1. One-on-one travel training

2. One month-long free trial for micromobility
3. Discounts on trips taken with shared mobility

I will measure the behavioral change of all participants by combining quantitative activity data (miles driven, trips taken on public transit or shared modes) with qualitative responses from before and after surveys and in-depth interviews. I will compare changes across treatment and control groups to identify the impact of behavioral interventions on use of shared mobility.

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Key Words: shared mobility, transportation equity, behavioral science

THE AGING POPULATION'S PERCEPTION OF AND ATTITUDE TOWARD SMART CITY INITIATIVES
Abstract ID: 1103
Individual Paper Submission

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This research project explores the aging population's perception of, and attitude toward, a range of exemplary smart city initiatives, primarily weighing on: (1) their perception of the initiatives likely in helping them age in community; and (2) their willingness vs. reluctance to accept those initiatives as actual policies. By surveying older Americans age 55 and older in the Northeast region, this project intends to provide practical implications for planners and city officials who contemplate proposing the smart city initiatives in the near future for their municipalities. Our population is rapidly aging, primarily driven by the aging baby boomer cohort, and it is imperative that our cities and communities need to help them age in community since it is their dominant preference (American Planning Association 2014). Although smart home technologies have generally been regarded as beneficial for older adults to age in place (Peek, et al. 2014), there is a lack of studies whether smart city initiatives, with much larger scale and probably bigger impact, could possibly help the older adults age in community. While there is no simple definition of a smart city, the exemplary smart city initiatives can be characterized as actively utilizing ICT, IoT, Sensors, GIS, A.I., and blockchain technology to promote efficiency and sustainability of city- or community-wide systems, ultimately to enhance the quality of resident's life in general. However, there is no shortage of concerns about the potential abuse of the pervasive technologies (Peek, et al. 2014; Demiris, et al. 2008), namely the possibility of invading privacy with the "omnidirectional" personal data collection. Population aging is a reality, and there has been a significant number of policies and movements to facilitate aging in place/community throughout the U.S. (American Planning Association 2014; Scharlach 2012). The smart city has not only been a buzzword at this critical juncture of the 3rd and the 4th industrial revolutions but also been an actual policy goal, particularly in the West Coast cities with high-tech industry bases. This study, by shedding a light on the aging population's perception of and attitude toward a range of smart city initiatives, aims to support our cities and communities to take one of the early steps toward a smarter future, especially for our aging population.

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Key Words: Smart City, Aging in Community, Technology

DIVERSIFICATION IN THE CITY SCIENCE BASE: EXPLORING THE CONNECTIONS BETWEEN KNOWLEDGE LEADERSHIP AND DIVERSITY IN CITY SCIENTIFIC EFFORT
Abstract ID: 1146
Individual Paper Submission

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As cities and the larger regions of which they are a part, are increasingly central to innovation, the important question about how much specialization and how much diversity is good for their growth prospects must be pursued in new ways. The characterization of a trade-off between what was regarded as efficient and valuable specialization and inefficient and impractical diversity in the economic functions of the city, was famously made by Jacobs (1969: chapter 3 in particular). There is ample historical evidence to demonstrate that cities with dominant industries have experienced prolonged stagnation and decline as a result of economic restructuring, including technological change, affecting that industry (Bluestone and Harrison, 1982), including in financial and advanced producer services (Sassen, 2012).

The present paper is rooted in the reciprocal relationship between science and its links to growth and innovation, on the one hand, and in arguments about the long-term merits of capitalizing upon urban-centered diversity, on the other. Diversity in this context is taken to mean primarily the nature of scientific activity, its link to the renewal of technological opportunity and to broad-based economic growth and development. The set of questions that guide this effort are of two sorts. First, in what ways can we say diversity is connected to city scientific leadership? Second, given the growing significance of global scientific collaboration, how may it contribute to a city's structure of diversity in scientific activity?

Our data collection and analysis is centered on highly cited scientific publications from the Web of Science database covering the period 2014 through 2018.[1] From this global data set we focus our analysis on the top 200 cities in terms of volume of highly cited scientific publications. This is consistent with scholarly work seeking to examine what the structure and content of scientific output in cities across the globe (Matthiesen et al., 2009; Grossetti et al., 2013) looks like, how it is changing, creating new centers of scientific knowledge production, and leading to innovative capability development.

Fractional counting methods and using the Google API have been combined to achieve a high degree of consistency of author addresses and institutional affiliations and in turn to apportion scientific publications to particular cities owing to substantial national and international collaboration. We have condensed the data of over a hundred scientific fields into 15 'macro-disciplines' in order to aggregate fields into more manageable categories that still provide enough granularity to indicate city specialization in a particular area. The Herfindahl-Hirschman Index is used as a high-level measure of diversity across

the range of a city's scientific output while statistical pattern analysis is used to examine other key facets of diversity in the science base of cities and how these differ across different regions of the world. We make an attempt to provide a diversity-based categorization of these top 200 cities in the global system of city scientific production. We conclude by discussing what our analysis implies in terms of optimal pathways toward scientific diversity and its meaning for planning at the city level in terms of the cohesiveness and relatedness of local innovation systems.

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[1] Highly cited papers are defined as those with the number of citations placing them within the top 1% of publications based on a threshold in their scholarly fields for the year of publication.

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Key Words: cities, science, innovation, economic development

CAN CROWDSOURCING CREATE THE MISSING CRASH DATA? ADDRESSING ROAD SAFETY IN DATA POOR ENVIRONMENTS
Abstract ID: 1200
Individual Paper Submission

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One of the biggest issues for many rapidly developing cities is road safety. Solving the problem has become so vital to urban environments; it has been included in the 2030 Sustainable Development Goals. In Kenya, road-related accidents account for more deaths than heart attacks. Road traffic crashes (RTCs) in much of the global south are the primary cause of death among children and young adults. Data on the spatial location of accidents and their cause is often extremely hard to obtain. This makes it challenging to determine planning policies that could be developed to address safety issues. This research project sought to test whether Twitter data could be used to determine the location of RTCs in data-poor environments. In order to test our hypothesis, 850,000 tweets were scraped from Twitter accounts discussing traffic-related issues in Nairobi, Kenya. A machine-learning algorithm was applied to the data to geolocate RTCs using reverse geocoding and semantic analysis. Motorcycle drivers were dispatched in real-time to the site of the presumed accidents to verify the validity of the geolocated Twitter data. This ground-truthing process allowed us to determine the performance of the algorithm, which identified the unique location of 72% of the data points. These results show that it is possible to use Twitter to identify safety issues in cities that do not already collect this data. A spatial clustering algorithm was applied to the data to highlight areas where accidents were significantly clustered. Analysis of these clusters often highlighted poor road design, with a lack of sidewalks or proper bus stops, among other issues. The results can be used to prioritize the redesign of these areas to improve their safety. Ultimately, the research shows that

Twitter is a viable data source for identifying RTC in data-poor environments, such as Nairobi Kenya. The methods laid out here can be applied to other cities that lack RTC data, giving these cities the means to make important policy decisions to improve street safety.
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Key Words: Machine Learning, Transportation, Road Safety, Sustainable Development Goals, Social Media

THE APPLICATION OF NIGHT-TIME LIGHT IMAGERIES TO IMPROVE THE EVALUATION OF URBAN AND RURAL RESILIENCE
Abstract ID: 1202
Individual Paper Submission

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The resilience of cities and villages in relation to climate change and natural hazards has gained increasing attention in planning policy and practice. The level of resilience even become an important element to evaluate government performance. Hence, several well developed matrices and indexes are proposed, such as Social Vulnerability Index (SoVI) (Cutter et al.'s 2003) and Disaster Resilience of Place model (DROP) (Cutter et al.'s 2008), to guide and support urban and rural planning. However, when those index and models are applied to remote and rural areas, especially in low- and middle-income countries, the availability and accuracy of datasets are constraining the accuracy of resilience evaluation, and thus hindering the application of such results in informing planning decision and policy making in urban and rural space.

In this case, we found that high resolution night-time light imageries are a useful tool to fix this problem of data missing and low accuracy. Many researchers have tested the correlation between intensity of night-time light and population density, as well as the level of economic development and urbanisation (Chen et al., 2019, Duque et al., 2019, Stokes and Seto, 2019). Therefore, we believe, such datasets could be used to generate variables and enhance the metrics of resilience. In our specific methodology, we will first apply Cutter et al.'s (2008) DROP model to measure the resilience of all the cities, towns, and villages in Hunan province, China. Then, we calculate the intensity of light in each city and town, and village with Luojia-1 night-time light imageries. With the light images, we will also extract the roads that are active during night and calculate the density of active roads in each city, town, and village. Third, evaluate the resilience again with enhanced DROP model with light intensity and density of active roads at night. At last, compare the resilience measured by DROP model and DROP enhanced by night-time light imageries.

With the new technology and datasets, will not only improve the technology in disaster studies, but also helps to could get a better and broader picture of the region in terms of their level of resilience to climate change and natural hazards. The findings hight the most vulnerable areas, which are omitted because of

missing datasets, and draw attention to decision makers in such areas and guide planning for more resilient rural and urban system.

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Key Words: Night-time light imagery, resilience evaluation, urban and rural planning, natural hazard

USE OF DEEP LEARNING TECHNIQUES TO ASSESS STREETSCAPE CONTRIBUTORS TO PEDESTRIAN SATISFACTION
Abstract ID: 1235
Individual Paper Submission

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Background: A body of literature has identified various environmental factors contributing to pedestrian activities. While studies have generally suggested that high dense, well-connected, and diverse neighborhood environments are significant for promoting pedestrian activities such as walking, studies have been required to examine micro-scale features of streetscape, which might directly affect a pedestrian's perception (Ewing et al., 2016). Previously, studies have attempted to audit street environments using Google Street View (Rzotkiewicz et al., 2018), but rapid advances in computer vision technology to detect, classify, and segment image data enable efficiently to transform street view images into learning datasets. A recent research is applying such a machine learning approach to assess street environments and examine their associations with social and health outcome variables (e.g. Wang et al., 2019; Yin & Wang, 2016; Naik et al., 2017). Yet, there has been little research examining the associations that the various streetscape features assessed by deep learning models may have with pedestrian satisfaction.

Methods: This study used the survey data administered in 2016 by the Seoul city government, which includes the 5-Likert scale item measuring pedestrians' satisfaction at 1,000 random locations in Seoul, South Korea. The survey data also provided personal factors such as gender and age. Using the geographic information systems (GIS), initial heading values of view at the 1,000 locations were identified, and then using Google Street View application programming interface, streetscape images from four angels (0, 90, 180, and 270) were extracted. Two trained assistants annotated the street view images for building training datasets. After a series of testing, YOLOv3 and HRNetV2 were selected as the deep learning models to detect the objects and segment the images. Various features of streetscape were assessed including illegal parking, fence, speed bump, street sign, pedestrian priority sign, crosswalk, braille block, bus stop, street tree, street furniture, traffic light, stop sign, bicycle lane, bus lane, pedestrian, car, wide sidewalk, broken curb, etc. After controlling for personal factors, pedestrian satisfaction was regressed on a list of streetscape features. Statistical significance was determined at

p<0.1.

Findings: Preliminary results showed that the presence of wide sidewalk, crosswalk, obstacles, and fence was significant for pedestrian satisfaction with street environments. Findings from this study highlighted the potential of deep learning approach to assess streetscape contributors to pedestrian activities and further discussion on policy guidelines will be promised for promoting pedestrian activities.

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Key Words: Streetscape features, Deep learning, Google street view imagery, Pedestrian satisfaction, Walking

ANALYZING THE EFFECTS OF GREEN VIEW INDEX OF NEIGHBORHOOD STREETS ON WALKING TIME USING GOOGLE STREET VIEW AND DEEP LEARNING
Abstract ID: 1279
Individual Paper Submission

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Previous research has reported that green is an important factor in walking activities, with greenery existing in various forms, including trees, gardens, green walls, and other examples. However, traditional methods of measuring urban greenness involve limitations in coverage of various forms of green and do not reflect the actual degree of exposure to pedestrians. The relationship between green and walking activity can depend on how these green areas are measured, individual characteristics, and purpose of walking. Accordingly, this study examined the street Green View Index (GVI) and its associations with walking time by different income groups using the survey data on walking behaviors in 2,350 residents in Seoul, Korea.

To examined this research question, this study utilized Google Street View (GSV) and semantic segmentation as one of the deep learning technique to calculate the GVI, referring to greenness from the visual perspective of pedestrians. To make a model suitable for segmentation, a deep learning model was trained using a 'Cityscape' dataset containing a urban street view. The study also controlled self-selection to clarify the relationship between the neighborhood environment and walking behaviors. Correlation analyses between traditional green variables and GVI were conducted to examine differences, and multiple regression models were applied to identify the relationships between walking time and green variables from multiple angles.

The results of this study show differences between traditional green variables (green area, the number of

street trees) and GVI, even in the same neighborhood, in terms of including specific green forms and perspectives. Specifically, GVI was found to be able to consider vitality of green, small green forms, private green located along a street that traditional green calculation methods cannot consider. As hypothesized, GVI was more closely associated with walking time than the traditional green variables. However, the relationship between green and walking activities had changed according to the purpose of walking. Also, this study found that the low-income residents generally lived in low GVI neighborhood, but their utilitarian walking time was more sensitive to GVI compared to the high-income group. These results were because GVI represents the actual green exposure to pedestrians, and there was a difference between income groups in the degree of vehicle usage in daily life. The results of this study indicate that, when analyzing the relationship between urban greenness and walking behavior, it is necessary to examine the relationship from multiple angles and to investigate the importance of eye-level street greenery. Our findings provide useful insights for public policies to promote pedestrian walking environments.

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Key Words: Walking Time by purpose, Green View Index (GVI), Google Street View (GSV), Semantic Segmentation, Deep Learning

ENCODING ACCOUNTABILITY: THE TRANSPARENCY ASPIRATIONS OF OPEN GOVERNMENT
Abstract ID: 1309
Individual Paper Submission

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Transparency in government is a fundamental prerequisite for accountability, or the obligation of public officials to answer to the public and be responsible for how they perform their duties in relation to those they represent. Transparency has long been a democratic political ideal, and in the U.S. has taken the form of legalistic rights and freedoms, such as the freedom of information laws born out of campaigns for a free press in the post-war period (Fenster, 2012), and later a normative goal that is expected to be implemented voluntarily in governmental agencies and non-governmental organizations. Transparency is now at the core of a global open government movement, and the rapid growth of open government reforms may foreshadow transparency as the next major paradigm in public management (Piotrowski, 2017).

City governments are now investing heavily in data transparency initiatives that they say will promote accountability of government to the public. These initiatives take the form of online disclosure of budgeting and planning documents, data portals publishing information about government operations and

expenditures, and web platforms that aggregate and visualize open government datasets. My research asks "how is data transparency enrolled in the politics and management of public expenditures, and what are its implications for governmental accountability?", and focuses on the changing practices of transparency as mediated by technology and operationalized through data sharing and circulation. This research improves on existing studies of governmental transparency by extending the focus to open data policies and citizen engagement processes, and will assess how new transparency policies, practices, and products are transforming the capacity for government accountability to taxpayers. This research is a well-timed contribution to local governments that are adapting traditional methods of economic development and fiscal management to the opportunities and challenges of big data and new transparency standards.

Different motives for transparency – such as political goals of openness and democracy as well as entrepreneurial goals of efficiency and monetizing public data – influence what policies cities adopt and products they create, complicating the assumed link between transparency and accountability. There are also internal debates over the role of government in furthering transparency – should cities primarily invest in proper data management practices to enable analysis, mining, and application development by researchers and civic hackers? Or should they also do the work of interpreting data for non-technical users?

City government employees and civic tech activists are actively constructing transparency policy and open data infrastructure in Chicago, IL. Public data producers grapple with these competing visions of what transparency means. As a result, they take different approaches to constructing data, transforming and publishing datasets, and building and managing platforms. They operationalize assumptions about data users, and encode expectations about how data will be used, which ultimately shape and limit what forms of accountability are possible.

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Key Words: transparency, open data, civic tech

WHEN NEIGHBORHOODS OVERLAP: SEEING LIKE A FLICKRER
Abstract ID: 1317
Individual Paper Submission

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How do you see your neighborhood? Administrative and institutional entities, such as planning departments and census bureaus, often define neighborhoods in line with street grids and census blocks. Regarding planning processes, these methods of defining neighborhood allow for easy demographic and site analyses. However, these neighborhood boundaries may not necessarily capture the nuances of how residents perceive space. Acknowledging the utility of using administrative and institutional data to collect data, we also want to propose that the easiest way to represent, abstract, and partition space, a methodology with roots, as James C. Scott cites in Seeing Like a State, in real estate practices, may not actually produce the best planning units to think about community identity and cohesion. With no universal method of defining neighborhood, and a number of scholars arguing that neighborhood boundaries should vary by local context, the method by which to define neighborhood remains ambiguous. Rather than beginning with resident-generated boundaries, planners often rely on pre-defined

boundaries from planning departments and the U.S. Census. Given that neighborhoods, however ambiguous, are important to planning processes and policy decisions, should there be a more user-generated and experiential way of defining neighborhood to complement existing knowledge? We want to propose a new methodology that asks how on-the-ground occupants of a city might define neighborhood boundaries.

Inspired by the studies in geography and computer science, this study presents a workflow for utilizing user-generated datasets to identify the perceived neighborhood boundaries. In specific, textual and geographic coordination tags and geotagged photos from a publicly-available Flickr dataset were utilized to map neighborhood boundaries in the borough of Manhattan. As an initial step, we gathered a list of neighborhood names in Manhattan from conventional sources such as the New York City Department of City Planning (NYC DCP) and curated online real estate guides to Manhattan neighborhoods. Next, we mined the dataset to find photos tagged with the neighborhood names that were located inside the boundaries of Manhattan and mapped their geographical location. A density-based clustering algorithm (DBSCAN) was then utilized to remove the geo-tagged points located outside the high-density cores of the neighborhood. Finally, we drew a bounding polygon around the clusters of points to generate new neighborhood boundaries.

In this study, we mapped neighborhood boundaries using the geo-tagged Flickr photos in order to draw user-generated neighborhood boundaries. We found these user-generated boundaries challenge the traditional, administratively-defined neighborhood boundaries. While boundaries defined by the New York City Department of City Planning present a neat, gridded map of neighborhoods, boundaries generated by Flickr data created messier, overlapping boundaries. Using user-generated data to complement existing methodologies, this study proposes multiple neighborhood typologies that counters flattening data across place in the unwieldy attempt to generalize neighborhoods in a one-size-fits-all model. More broadly, we push planners and architects to do the following: First, to expand how they might use existing and available bottom-up forms of data to create more nuanced and localized representations of space. Second, to acknowledge the imperfect nature of user-generated datasets, including biases and gaps, and determine how to both develop measures to counter and openly use the data's imperfections as in the overall narration of a place.

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Key Words: Neighborhood, Boundaries, Data, User-Generated, Social Media

THE SPATIAL DISPARITY IN TRANSIT ACCESSIBILITY INCORPORATING THE TEMPORAL DIMENSION
Abstract ID: 1320
Individual Paper Submission

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Background:

Mobility of people has always been the issue in transportation planning since transportation dependents (TD) tend to rely more on public transportation. Especially in the U.S, where people highly dependent on personal cars than other countries cause more problems in mobility. Inequality in the spatial distribution of transportation services found among different socio-economic status. Not only the service provision such as frequency and headways of public transportation affect the whole travel time. Therefore identify the spatial gap considering the temporal dimension throughout the day is needed. However, the general methods to measure accessibility were mostly static measurement, which assumes that the accessibility remains the same throughout the day. This research presents changes in the spatial disparity between need and supply, considering the temporal component.

Study Design:

This study develops a modular geospatial model to identify transit accessibility by different times of the day. The model is consists of three modules: transit need, public transportation supply, and gap. The transit needs modular account for multiple socio-demographic variables to estimate the need. The demand calculation is based on the attributes from census blockgroup. The supply modular creates a layer of accessibility for different travel time: peak and off-peak hours. The calculation involves a gravity model, an Origin-Destination (OD) matrix, and network analysis using travel time based on the GTFS (General Transit Feed Specification) data. Finally, two layers are combined into a gap layer that represents the spatial disparity of transportation accessibility. The study applied to Alachua County in Florida, where the below the poverty population has been growing steadily.

Expected Results:

These results will help identify the area where the gap between need and supply and is significant during different times. This research will contribute to transportation planning by suggesting options such as on-demand or supplementary public transit that operating only at a particular time based on the result. These results will eventually improve the mobility for TD population and reduce the disparity throughout the time and space

Conclusion/Contribution:

The findings demonstrate that the model was successful in determining areas that lack accessibility. The contribution of this research is twofold: 1) methodological – identify the spatial disparity considers various socio-demography and 2) The model can be used as a tool to assist planners and policymakers in their efforts to reduce spatial gaps in transportation services, especially for populations unable to travel by private automobile.

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Key Words: Transportation accessibility, temporal accessibility, Alternative transportation service, GIS modeling, Transit Accessibility

ANALYZING SPACE-TIME DYNAMICS OF AN URBAN SYSTEM TO SUPPORT PLANNING APPLICATIONS: A CYBERGIS-BASED APPROACH
Abstract ID: 1327
Individual Paper Submission

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Despite wider availability of urban big data, thanks to rapidly advancing sensor networks and mobile technologies, urban planning practices are still highly dependent on census-based authoritative data. By relying on such static demographic data for dynamic urban systems, our planning and zoning regulations inherently ignore the uncertain geographic context problem (UGCoP) (Kwan, 2012). While the growth of big data is shifting our focus from long-term strategic planning to short-term thinking about how cities function (Batty, 2013), it can also help gain urban insights that might be absent from the authoritative static data. Big data can be used to visualize and analyze urban systems across multiple spatial and temporal scales. Such analysis of space-time dynamics of cities can help to better evaluate the efficacy of different planning and zoning regulations. But there is yet to have enough study exploring how to harness urban big data for such planning applications and what additional insights can be gained by this approach for evaluating social equity compared to census-based data. For gaining insights on patterns and dynamics of an urban system, data should be archived over time, enabling multi-scale and longitudinal spatio-temporal analytics (Thakuriah et al., 2017). CyberGIS is conceptually well positioned to enable such analytics through high-performance, distributed, and collaborative computing approaches (Wang, 2010). In this paper, we propose a novel CyberGIS framework for analyzing space-time dynamics of urban systems by integrating data from multiple sources (e.g., urban sensors, social media, Google map, transit data, etc.). The framework also synthesizes authoritative socio-economic and land use data for plan evaluation and formulation. We took the city of Chicago as a case study to apply this CyberGIS framework and demonstrate how multi-scale space-time analytics can be incorporated into several planning applications of the city.

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Key Words: Big Data, CyberGIS, Space-time analysis, Urban dynamics

EXPLORING SPATIAL-TEMPORAL DEEP LEARNING ALGORITHMS IN URBAN EXPANSION PREDICTION AND SCENARIO PLANNING
Abstract ID: 1355
Individual Paper Submission

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Urban land-cover change exaggerates the threats of climate change through loss of natural habitat and increases in carbon emission. However, little is known about future patterns and rates of urban expansion. Deep learning (DL) algorithms have emerged as a promising tool for large-scale urban land-cover change predictions. Among the variants of deep learning algorithms, Convolutional Neural Networks (CNN) and Recurrent Neural Networks (RNN) are particularly advantageous for geographical information extraction and change prediction because of their superior capacity to recognize patterns across space and over time. Combining the advantages of CNN and RNN, a convolutional LSTM (ConvLSTM) was proposed for capturing spatiotemporal correlation (Xingjian et al., 2015). Given the path-dependent nature of land-cover change, ConvLSTM presents an opportunity to improve the performance of land-cover change prediction.

In this study, we aim to 1) compare the performance of three spatial-temporal models in urban expansion prediction and 2) optimize the performance of ConvLSTM by leveraging ancillary data (including socioeconomic data, institutional contexts, and cultural structures) and geospatial constraints, which also serves for scenario planning. We choose Mckinney, TX as our study site, which is among the nation's fastest-growing cities from 2000 to 2010. A series of urban maps for the year 2001, 2003, 2006, 2008, 2011 will be used to train the DL models and test their performance in predicting an urban map in 2016. All the urban maps will be reclassified from NLCD. Candidate models for the comparison include a traditional CA-Markov model, fully connected LSTM (FC-LSTM), and ConvLSTM. We expect to identify the best-performed models and offer guidelines for deep learning algorithms application in urban expansion predictions. By unlocking the potential of ancillary data and innovating on deep learning algorithms, the proposed research will contribute to the study of urban land-cover change by not only predicting future urban development but also constructing potential scenarios under different policy interventions.

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Key Words: deep learning, machine learning, land-cover change, remote sensing, scenario planning

UNDERSTANDING CONSUMERS' SPATIAL BEHAVIOR IN URBAN COMMERCIAL ENVIRONMENT BY EXTRACTING TYPICAL PEDESTRIAN ROUTES
Abstract ID: 1360
Individual Paper Submission

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This paper proposed two approaches to extract typical pedestrian routes from consumers' multi-stop spatial behavior, which is quite complex but undoubtedly essential for urban design of commercial space. The first approach is to conduct a cluster analysis for individual routes. The degree of similarity of each pair of routes is measured by Levenstein ratio, and affinity propagation algorithm is applied to the similarity matrix to generate exemplars as typical routes, from which different patterns of spatial behavior could be revealed. The second approach is to simulate a route with the maximum probability. For this purpose, two models, namely convolutional neural network (CNN) and discrete choice model (DCM), are adopted to predict the probability that a consumer will choose a specific place as the next destination. Based on that, a typical route is simulated step by step using beam search. These two approaches are applied on a dataset consist of 323 individual routes observed in a commercial complex in Shanghai, China. For the first approach, six typical routes are derived to represent different patterns, such as task shopping, fashion-oriented shopping, and so on. For the second approach, three sets of explanatory variables, namely functional attractiveness, spatial impedance, and go-home indicators, are used for both CNN and DCM. It is found that CNN performs slightly better than classical DCM in terms of cross-validation accuracy, but it is much more prone to overfitting and could hardly provide intuitive understandings of spatial behavioral mechanisms. By contrast, the results of DCM are easy to interpret and provide satisfactory accuracy. The typical route simulated by beam search suggests that consumers are mainly focusing on anchor stores, while smaller stores will also be patronized in the link between anchor stores.

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Key Words: spatial behavior patterns, commercial environment, typical routes

A DEEP LEARNING APPROACH TO URBAN MODEL ADAPTABILITY AND REPLICABILITY: THE CASE OF LAST MILE ACCESSIBILITY
Abstract ID: 1409
Individual Paper Submission

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End-chain accessibility in public transit, generally called the 'last mile', refers to the final leg of a journey from a public transit stop. The last mile problem can play an important role in determining how transit systems are perceived and subsequently used (Zellner et.al., 2016). Prior urban modeling work in this area has focused on walking, biking, or feeder bus strategies for improving the last mile experience (Tight et.al., 2016) – although these approaches are typically of neighborhood scale and highly contextual. Standardized approaches that can be replicated, applied to multiple places at a regional scale, and that implicate strategic or design interventions are fewer. Such regionally scaled models that operate at a fine spatial resolution however, are generally very computationally expensive – in this case, due to complicated travel behavior simulation processes. In addition, not all cities have sufficient open-source data for these types of models, making replication and multiple applications difficult. Decreased run times and improved computational efficiencies would open these types of urban models to many different user groups and applications.

Machine learning techniques that can 'train' a model and model data holds promise for addressing scale, replicability, multiple application, and data collection problems in large scale urban models. Deep transfer

learning is one form of machine learning. It refers to the process of storing knowledge gained while solving one problem and applying it to a different but related problem (Tan et al., 2018). Similar to analog knowledge transfer techniques, the transfer learning process addresses efficiency and data problems by assuming the training data is not independent nor identically distributed (Tan et al., 2018).

In this paper we explore the role of deep transfer learning techniques in developing a regional, fine scaled urban model that is easily replicable and computationally efficient in different urban settings. We first explore the role of various urban form and socio-economic factors in predicting last mile scores - the relative value of how well an area performs given specific variable attributes. We test and 'train' the model in Chicago, IL considering several machine learning methods in the process: Bayes, Support Vector Machine, and Random Forest. We then test the replicability of the trained model with an application to Stockholm, SE using transfer learning techniques. We evaluate the application using 2 main criteria: i) an ability to predict last mile scores, and ii) interpret last mile performance using a small local sample.

More specifically, a map-based deep transfer learning method will be used to map the training data from Chicago and Stockholm to a new data space (typically a reproduced kernel Hilbert space) for a deep transfer learning process. A joint maximum mean discrepancy, measuring the joint data distribution, will be used to adjust the data to the new domain (Long et al., 2017). This will help increase model accuracy.

This approach can improve regionally scaled models, help evaluate model performance in data poor environments, and improve computational efficiency for wider user interactions. This research also generally represents an approach for improving the replicability and adaptability of other large-scale urban models. We suggest the process is important for numerous planning support system applications.

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Key Words: Urban modeling, Machine learning, Deep transfer learning, Planning support systems

TRACK 1 – POSTER ABSTRACTS

REFINING MEASUREMENT OF METROPOLITAN SYSTEMS USING NLCD DATA
Abstract ID: 27
Poster

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Consistent, conformable land cover data is a relatively new tool for planners. Such data is needed to accurately measure the physical growth of cities since political boundaries introduce a wide array of biases (Landis, 2017). Fulton et al (2001) was an early national study that used land cover data. Their study used metro regions as a unit-of-analysis to assess changes in density derived from developed land

instead of census-derived areal measures. Their approach has been replicated by others (e.g. Landis, 2017), though current scholars typically use the National Land Cover Database (NLCD)(Yang et al, 2018). Unlike earlier data, the NLCD is not aggregated to counties, instead it is available as 30m raster data. In theory, this allows metrics to be calculated across a wide range of units-of-analysis; however, few studies leverage NLCD to conduct national studies of urban form built on units-of-analysis below the metro or county scale. To fill this gap, this poster asks the following question: how can NLCD be leveraged at the census block scale to better understand urban growth of all US metros from 2001 to 2016?

Though NLCD is widely used, it is rarely leveraged systematically at finer scales. McDonald et al (2010) provide an important precedent. The authors calculate developed land by census block, leveraging it to calculate land consumption (the inverse of density). This data allowed the authors to analyze the distribution of urban land patterns within metro regions, synthesizing their findings into a Gini index measuring the inequality of land consumption across metro regions. While innovative, their approach yielded a single synthetic metric for a single time period. This study leverages the 2001, 2006, 2011, and 2016 iterations of NLCD to calculate several metrics. These include land inequality (McDonald et al, 2010) and density gradient slopes and intercepts (Landis, 2017). In addition to metrics built using developed acreage, NLCD also contains data on imperviousness and tree canopy. Hence, this study also leverages these NLCD layers, calculating inequality and gradient metrics for each. These metrics are examined longitudinally, and by geographic region and metro size.

Early findings from this analysis yield a diverse set of findings. Land inequality showed a similar distribution as McDonald et al (2010), though longitudinal change shows that inequality tends to be widening in most metros. Analysis of density slope gradients show some evidence for systematic recentralization, especially after 2010. This aligns with the findings of Landis (2017), as well as the tendency for US metros to consume less land in general, as identified by Richter (2019). Imperviousness and tree canopy inequality and gradients show more varied patterns that perhaps are driven by metro specific regional geography or land use regulations.

Accurate measurement of urban phenomena is crucial to effective planning. Landis (2017) demonstrates how inaccurate metro population densities are when calculated using census areal measures. The anomaly between census and land cover-derived metrics likely diminishes as the unit-of-analysis shrinks; however, by how much is uncertain. Therefore, the first contribution this poser makes is to provide clarity regarding biases of census block level densities. Second, this poster leverages synthetic metrics built from census blocks to better understand the physical structure of metropolitan regions. That this study does so longitudinally provides valuable data on urban growth. Finally, the use of NLCD imperviousness and tree canopy layers provides significant refinement in the physical measurement of metro regions. Analyzing land as "developed" or not is a false binary that this poster begins to eliminate.

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HISTORIC RESOURCES SURVEY USING DEEP CONVOLUTIONAL NEURAL NETWORK
Abstract ID: 418
Poster

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The classification and evaluation of the images are essential tasks in a historic resources survey. These are very time-consuming tasks since a large number of images usually require sorting. The availability to use automatic techniques to facilitate these tasks would play an important role in the digital documentation of historic resources survey. The purpose of this study is the application of deep learning techniques, especially Convolutional Neural Network (CNN or ConvNet), for the classification and evaluation of architectural housing styles in the United States when establishing a local historic district. Correct classification and evaluation of the images in historic resources survey will allow researchers to find out if a particular structure or feature of a single house retains the historic character and significance, and identify all contributing properties and non-contributing properties as a part of the nomination process for designating a historic district.

The work related to the classification of architectural styles can be mostly found in the computer science field and few studies have examined the application of automatic architectural housing style identification in neighborhood planning and historic preservation. Zhao et al. [1] described using a feature extraction module based on Deformable Part-based Models (DPM) to classify the architectural style. Xu et al. [2] used a Multinomial Latent Logistic Regression method that also adapts DPM methods for classification. Zhang et al. [3] proposed a hierarchical sparse coding of blocks to recognize architectural styles. Obeso, et al. [4] proposed a CNN to classify Mexican buildings according to the architectural styles. Llamas, J., et al [5] also applied deep learning techniques to the classification of architectural heritage images. However, some of these works lacked character-defining features of architectural styles. In most cases, the samples did not identify the typology of buildings or differentiate types of buildings that were mixed-use under the same style. Without clearly distinguishing the relationship between architectural styles, any advanced methods or algorithms will comparatively reduce the robustness of the classification. Thus, it is important to choose carefully which images should be used to represent an architectural style and acknowledge the role of architects or historians in order to identify building types more accurately and show there is a clear relationship between styles.

In this study, we chose one of the local historic districts designated as the Los Angeles Historic Preservation Overlay Zone (HPOZ), which helps protect the authentic and unique character of a neighborhood. In designating a neighborhood as a local historic district, it is important to determine which building retains its original design features as contributing structures and what percent of the properties are contributors in the neighborhoods. In this respect, we first focused on identifying architectural styles to avoid redundancy as we were interested in concentrating on a single house as an architecture type. Seventeen styles of single house architecture were identified and categorized in this study to reduce the complexity and to find a clearly distinguishable difference between styles. We compiled two new datasets: one was collected data from the web without organizing by a proposed house style definition and the other was an organized image dataset based on the proposed house style definition. The two image datasets were passed through image processing to filter and edit into the same format, that then could be used for the prediction model using Deep Convolutional Neural Network. This study is the first of our attempts to utilize image recognition algorithms to predict house style in neighborhood planning and historic preservation. Furthermore, this study still demonstrates the usefulness of the deep learning techniques for historic resources survey in designating a neighborhood as a local historic district.

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Key Words: Convolutional Neural Network, Historic Resources Surveys, Local Historic District

A STUDY ON SPATIAL DISTRIBUTION OF MUNICIPAL WASTE COLLECTION POINTS AND SOURCE SEGREGATION STRATEGY FOR DHAKA
Abstract ID: 777
Poster

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A city's sustainability in terms of health, environmental, aesthetic, land-use, resource, and economic aspects may be posed with serious threat if the solid waste generated cannot be handled in a systematic and technically sound manner (Ghani et al., 2013; UN-Habitat, 2010). Dhaka, one of the biggest cities in global south, is faced with serious problems with its solid waste management because of the rapid city growth in terms of population and spatial extent and the resulting huge volume of wastes that remain unmanaged and untreated.

The waste flow chain in Dhaka is a complex one involving various phases and stakeholders. The system of solid waste collection in Dhaka is usually secondary waste collection point (SCP) based and the primary waste collection from home to these SCPs is mainly operated by NGOs or community-based organizations or private sectors. The secondary waste collection from these SCPs to landfill sites are handled by Dhaka North City Corporation and Dhaka South City Corporation (Matter et al., 2013).

However, there are many flaws associated within these waste transfer chain. Constraints of institutional capacity, financial resources, NIMBYism and efficient technologies create severe gap between the demand and supply between SCPs. The result is the overflow of SCPs and dumping on open streets causing environmental degradation, susceptibility of health hazard and contamination of the land and water bodies (Shuvo et al., 2013). Another problem is the absence of source separation of wastes, the key activity to successful 3R initiative. The conventional trend is giving the collectors the commingled waste. Sorting and cleaning of commingled and deteriorated waste entails substantial time in subsequent phases and low-grade product and less price is obtained thereby (Matter et al., 2013). In absence of source separation practice in Bangladesh, a considerable portion of waste goes unused now, at least 80% of which can be recycled (DoE, 2010).

This research examines these flaws of waste management system of Dhaka from generation point to disposal at SCPs by assessing the capacity and spatial location of SCPs and the existing scenario and perspective of different stakeholders about source separation.

In order to evaluate the optimality of spatial distribution of SCPs, the Indian standards for spatial location of dustbins is used given the similarity of dustbin-based collection system with Bangladesh. The location and capacity of the 292 SCPs are collected from all the 10 municipal zone offices and their position is

demarcated using ArcGIS. Results show that only 30% of the total area of Dhaka is conveniently served considering a walkable distance, 70.5% of the area can be served by waste van conveniently and the only 24% of the total area of Dhaka city is served by the capacity of the SCPs in Dhaka.

For understanding the existing practice of waste separation and the view of stakeholders involved in the primary waste collection phase, questionnaire survey of 384 households and focus group discussion with waste collectors, scavengers and housing societies in eight areas of Dhaka and interview with experts in concerned field are conducted. The findings indicate that nearly 50% households do not possess any knowledge regarding source separation. Waste collectors and scavengers who need to be trained and incentivized for proper handling and transporting of segregated waste to SCPs, are lagging behind in government's strategies.

Based on the findings and review of policy documents, the research finally provides recommendations on spatial standards and location of SCPs and some policy guidelines for an integrative chain for source separation and recycling. We believe that the findings and recommendations would be helpful for planning practitioners in developing countries who are facing similar challenges as Dhaka.

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Key Words: Solid Waste Management, Waste Collection Points, Source Segregation of Waste

UNTANGLING THE DIGITAL PUBLIC DISCOURSE IN SOCIAL MEDIA: EXAMINING THE ROLE OF CROWDCULTURE TO ADVANCE THE RIGHT TO THE CITY IN DALLAS, TX
Abstract ID: 875
Poster

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The growing role of social media in the digital public sphere has led to the formation of crowdculture (Holt, 2016) and the emergence of mass-self communication. Being a powerful vehicle for social change, social media shapes the urban experience and could be a potential tool for participatory democracy (Fuchs, 2017). Aided by the Internet and social media, cities may bask in their positive images as promoted through place brands or endure negative territorial stigmas associated with their past or most vulnerable distressed places (Audirac, 2018).

This research uses tweeted data to decipher how the City of Dallas is projected in the social media and the way crowdculture has shaped the digital public discourse of the city. To accomplish this, the authors draw

on the classification and sentiment analysis of tweeted hashtag data collected from the city's official Twitter outlets during two time periods—March 5 to April 30 and September 23 to December 3, 2019. Dallas is particularly an interesting case since, during the past two decades, the city has promoted a world-class image of itself that is business-friendly to create a "geography of buzz" (Currid & Williams, 2010). However, preliminary findings suggest that what manifests in tweeted data by crowdculture has challenged this image and somewhat presents an opposite thesis according to which the city is dealing with racial tension, poverty, and violence.

This research contributes to planning scholarship in two ways: First, following Schweitzer (2014), social media has the ability to influence decision making in planning processes and offers policymakers and planners an innovative methodological approach to reach out to the public and identify critical issues facing communities. Second, this research inspires community-based actions because social media opens the possibility of forming new digitally produced public spheres wherein communities and grassroots can reinforce their identity and claim their rights.

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Key Words: Social Media, Twitter, Sentiment Analysis, Place Branding, Stigma

A CONCEPTUAL FRAMEWORK FOR THE INTEGRATION OF ENVIRONMENTAL SIMULATION MODELING AND STAKEHOLDERS' KNOWLEDGE TO IMPROVE ADAPTIVE CAPACITY TO HEAT STRESS
Abstract ID: 902
Poster

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Severe heat stress resulting from exposure to the urban heat island effect exacerbated by extreme heat waves can cause intolerable thermal conditions for residents. Many physical, social and economic factors modify the magnitude, frequency and severity of such events. In order to address such a multidimensional problem and increase the adaptive capacity of crowded cities that face extreme heat events, participatory approaches that nourish both technical and societal knowledge are needed. The purpose of this study is to explore how (1) physical environmental simulation conducted through global sensitivity analysis and (2) stakeholder modeling processes conducted through fuzzy cognitive mapping can be effectively integrated. The purpose of this integration is to identify effective solutions for heat stress risk reduction that are co-produced with communities, and therefore more likely to be effective.

Global sensitivity analysis (GSA) explores how the variability of input factors in numerical models can cause variation in output factors (Pianosi et al., 2016). The GSA process examines both parameter uncertainty and scenario variability by examining a multitude of scenarios. In this study, GSA will help us to answer the following questions: which physical factors cause the largest variation in thermal conditions (e.g.: building aspect ratio, vegetation density, surface albedo, etc); what are the magnitudes of variation associated with various parameters and combinations of parameters; and which factors interact

with other factors to minimize or maximize the variability of thermal conditions. We show how, by capturing the physical variation of urban environments, GSA can help improve understanding of extreme heat exposure risks.

However, GSA is useful only within the narrow context of the physical parameters being modeled. Comprehensively identifying community risks from heat stress and the appropriate responses requires understanding of physical and social determinants of risk and policy efficacy. Fuzzy cognitive mapping (FCM) can be a helpful tool for deriving socio-economic scenarios and adaptive strategies grounded in stakeholders' knowledge. For example, community responses to heat exposure risk may include subsidizing air conditioners, building cooling shelters, identifying socially isolated people, or street watering (Olazabel, 2018). All of these options have all been shown to be effective under some circumstances but would be completely excluded in physically based heat-transfer models. FCM may be used to quantify residents' perceptions of the efficacy of such interventions. The FCM process can be useful not only for researchers seeking better understanding of community perceptions of risk and risk reduction; the process itself facilitates social learning (Henly-Shepard et al., 2015). The application of FCM in our proposed framework can augment the raw modeling results of GSA processes.

The co-production of knowledge through integrated GSA and FCM processes can better link the often separated worlds of modeling and perception. Therefore, our study will answer the following questions:

- What are the outcomes of GSA and FCM models, and how can those results be categorized and merged to build a structured framework?

- In what ways is the integration of data from these models useful in support of the adaptive actions communities may take?

Addressing these questions will allow us to form a stratified two layer yet interrelated framework that can leverage the results of modeling and deep knowledge from the public. In our proposed framework, all the casual relationships derived from both CFM and GSA processes would be reflected on an integrated map. This map would allow decision makers to project the tradeoffs of various heat exposure adaptation strategies for minimizing physical and social vulnerabilities. This approach can also make the decision-making process more transparent, enhance social learning, and improve the legitimacy and acceptance level of adaptation strategies (Korfmacher, 2001; Voinov et al., 2018).

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DOES CHOICE OF DAY-TO-DAY ACTIVITY LOCATION IMPACT MENTAL WELLBEING? MAPPING PEOPLE'S ACTIVITIES AND ASSOCIATED STRESS LEVELS FORM TWEETS
Abstract ID: 909
Poster

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There is a rising burden of urban mental health disorders that are attributed to urban living (Peen, Schoevers, Beekman, & Dekker, 2010). Apart from economic inequality, noise, and pollution in cities, studies have shown that increased urban density (often measured by population density) and crowding may have an adverse impact on mental wellbeing. Lack of control over one's environment in dense urban areas and lack of social contact in high-rise residents are some of the causes of stress in dense urban areas (Chu, Thorne, & Guite, 2004). Mental health surveys have often shown conflicting results on the impact of density and crowding.

Urban theorists on the other hand have encouraged density. William White, in his book 'The Social Life of Small Urban Spaces, mentioned: "For the foreseeable future, the opportunities in the center city are going to be for small spaces (p101)" (H.Whyte, 1980). He emphasized on the inclusion of small spaces and spaces marked by a high population density in urban spaces. His theories are backed by the naturalistic observation in New York City in 1969, and the early 1970s. Jacobs further reinforced his views. She highlighted the importance of smaller blocks and diversity of uses. She states, "wherever lively and popular parts of cities are found, small much outnumber the large p.147 (Jacobs, 1961)."

 The contradiction in theories surfaces when the concepts of crowding and density are muddled. Crowding is defined as the lack of personal space, associated with an increased sense of confusion, aggression, sense of vulnerability in people who inhabit those spaces. A design fallacy can cause crowding. While crowding is often measured by population density, a more appropriate description of crowding would be a condition where demand for space exceeds supply, and there is a lack of control on one's privacy. Thus, the sense of voluntary control over one's surrounding impact perception of crowding and the stress tied to this perception. Also, an individual's perception of space is critical in determining the level of stress from crowding. The same person may feel stressed when he has to space in the lift with strangers while he may feel relaxed in the same proximity with people while watching a musical performance.

A desirable urban density that urban theorists have described is complemented by land-use diversity and the diversity of points of interest. Urban areas with dense building footprint without adequate diversity of land use may appear dead, and result in social isolation for people. Also, inhabiting such areas would increase travel time and cost to access any 'escape facilities' for relaxation or engage in any social activity. However, dense urban areas with adequate diversity give people a chance to socialize and engage in constructive social activity. Our hypothesis is, easily accessible, and dense urban areas with diverse uses encourage relaxation (de-stressing). In this research, we identify people's stress levels in their day to day de-stressing activity from Twitter microblogs (Abbasi, Rashidi, Maghrebi, & Waller, 2015). We evaluate the built environment density and diversity of people's home and work location as well as the shortest distance (cost) to their activity locations. We aim to find a relationship between people's choice of activity locations and their stress levels. Further, we aim to show if the choice of activity location varies by people's demographic attributes, such as length of residency (resident or tourist), socio-economic status, and gender.

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Key Words: Activity space, Mental well-being, Land use Diversity, Crowding vs. density, Tweets

SMART CITIES AND DIGITAL INCLUSION: A CASE STUDY OF MACON-BIBB COUNTY'S SMART NEIGHBORHOODS PROJECT
Abstract ID: 1044
Poster

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Digital inclusion is a key criterion to ensure that Smart cities will be able to live up to their full potential in addressing equitable and sustainable communities. Successful Smart city projects will need all individuals to have access to the Internet, be able to use the Internet and be digitally literate to consume digital information (Brooks and Schrubbe, 2016; National Digital Inclusion Alliance). There is a wide spectrum of methods by which different places implement digitally inclusive processes. Equally varied are the inclusivity of programming and integration of digital inclusion within the local regulatory environment. This paper presents a case study of one communities' effort to improve digital inclusion for their most vulnerable populations.

Macon-Bibb is a consolidated city-county in middle Georgia with an estimated population of approximately 155,000 and is the fourth largest city in the state of Georgia. The US Census Bureau estimates that one in three households in Macon-Bibb County currently have no access to broadband internet. Additionally, one in five households have no access to a computer or smart device. Smart Neighborhoods MBC, a Macon-Bibb County (MBC) Government Smart City Initiative will extend existing efforts to inform and engage the community through integrative technology, information solutions and stakeholder engagement community involvement to engage the public in new ways as well as bridge the digital divide for underserved populations. Smart Neighborhoods MBC was one of four projects to win the 2019 Georgia Tech Georgia Smart Challenge, a competitive program that helps local governments implement Smart City ideas by providing grant funding and access to research partners.

The projects' primary goal is to promote digital equity by deploying a Smart Kiosk system in underserved and at-risk areas of Macon-Bibb County. A key component of the Smart Neighborhoods MBC project is to develop a collaborative platform with a digital applications interface and broadband access for citizens and government to collectively address community challenges around education, health, employment, etc. and develop innovative models of reciprocal data-sharing to nurture civic engagement.

The research component of the project seeks to answer the following questions: 1) What are the optimal locations for the kiosks? 2) How do we design stakeholder engagement for underserved neighborhoods around Smart City initiatives? 3) What types of technology interfaces and applications are best suited for the needs of the community? 4) What metrics are appropriate to evaluate the short-term and long-term outcomes of these types of Smart City projects? The presentation will provide an overview of the project planning and development phase in year one. Additionally,
the research components, including the development of the "smart location" index to inform kiosk locations, stakeholder engagement strategies, analysis of usage data from the kiosk prototype and design

of the evaluation plan will be discussed. This will include an overview of methodological instruments and techniques including spatial analytics, surveys, logic models and development of key performance indicators. Collectively, the aim is to create an evidence-based roadmap for phase 2 of the project, namely, deployment of an extended network of kiosks and evaluation of long-term changes in community disparities.

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Key Words: Smart Cities, Digital Inclusion, Community Development

EXPLORING MULTI-SOURCE NIGHT-TIME LIGHT DATA TO EXAMINE SCALING LAWS IN SOUTH KOREA
Abstract ID: 1090
Poster

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Emergence of night-time light data provides opportunities for researchers to investigate various types of urban dynamics (Mellander et al., 2015). Given the sources of night-time lights, the data were primarily used as a proxy for regional economic activity (Doll et al., 2006). The increased application of night-time light in urban planning required more accurate data, which led to the development of post-processing techniques. Three types of datasets are publicly accessible: (1) Uncalibrated Defense Meteorological Satellite Program Optical Linescan System (DMSP-OLS), (2) Calibrated DMSP-OLS, and (3) Visible Infrared Imaging Radiometer Suite (VIIRS). The objective of this study was to compare the effectiveness of night-time light datasets to test urban scaling laws by investigating the relationship between population, urban development patterns, and night-time light in South Korea. Although economic activity has been proven to correlate with the urban development in the literature, only a few studies have been conducted to investigate the relationship between night-time light and urban development patterns based on urban scaling laws (Kang and Jung, 2019).

A pre-processing protocol was developed to integrate three types of night-time light data, land cover data, population data, and urban area boundary data. Since the extents, resolutions, and formats of these spatial data were different, grid cells located within the boundary of urban area were set as the unit of analysis. The population size was computed to test the urban scaling relationship. In addition to the demographic factor, physical urban development patterns were identified by introducing four landscape metrics: percentage of landscape (PLAND), aggregation index (AI), fractal dimension index (FRAC), and Shannon's diversity index (SHDI). Thus, a grid cell with corresponding three night-time light values, four landscape metrics, and population size was used to estimate the relationship between them. Since all grid cells were clustered within cities, we applied random intercept mixed-effects models to account for the correlation between grid cells in the same city.

A stepwise approach was applied to compare the relationship between night-time light, population, and landscape metrics. Twelve single landscape metrics models and twelve combination models were selected as final outcomes. The population was included in all models to test the urban scaling relationship. Each night-time light data (uncalibrated DMSP-OLS, calibrated DMSP-OLS, and VIIRS) has four single landscape metrics models. The population coefficients were positively related to all night-time light

datasets, but the values were higher in calibrated DMSP-OLS and VIIRS models. Similarly, all landscape metrics were positively related to night-time lights and uncalibrated DMSP-OLS models had the lowest coefficient values. The combination models included multiple landscape metrics to test the relationship between complex landscape characteristics and night-time light. In calibrated DMSP-OLS combination models, the population coefficients were similar to the coefficients in the single landscape metrics models, but some landscape metrics were not statistically related to the night-time light. In the VIIRS combination models, most of the landscape metrics were positively related to night-time light except for the AI.

Urban development and night-time light had similar relationship patterns regardless of data sources, but the magnitudes were varied across datasets. This result has some implications. First, sub-linear urban scaling relationships were observed in all models, which indicated diminishing returns to scale. We concluded that the economic activity level does not catch up with the population size in finer-grained regions. Second, positively related landscape metrics indicated that the composition and configuration of physical land attributes have effects on regional economic activity. Lastly, the different magnitudes of coefficients mean that selecting a proper night-time light dataset is needed when estimating regional economic activity. The effectiveness of datasets that we tested in this study could provide valuable insights for further studies.

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Key Words: urban scaling law, night-time light, city size, landscape metrics

TRACK 2 - COMMUNITY DEVELOPMENT

TRACK 2 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS FOR THE SESSIONS

RADICAL PLANNING 1: PRACTICE IN SHIFTING NARRATIVES
Pre-Organized Session 16 - Summary
Session Includes 436, 437, 438, 439

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While planning offers hope for better cities, decades of radical scholars and planners have exposed a troubled history of the complicity of planning in perpetuating spatialized injustice and domination. Frequently overlooked or silenced are the traditions and emerging actions of communities caught in these spaces of struggle, along with their capacities to imagine and to enact spaces of difference, spaces of resistance, and spaces of refusal. As part of the collective ongoing Spaces of Struggle project, these sessions help us to radically rethink what constitutes planning and who has the power and expertise to engage in city-making. By challenging dominant narratives, introducing alternative perspectives, sharing difficult and untold stories, and making space for stories to transform, scholars in the "Practice in Shifting Narratives" session show how the struggles of planning is partially based in who controls the narrative.

Objectives:

- Lessons from scholarly traditions in radical planning for contemporary movements in equity and social justice planning
- Lessons on how to bring theoretical insights from other disciplines, specifically those that have a much longer history of engaging with communities
- Lessons on how to bring practical insights from communities actively engaging in transformative and insurgent collective placemaking practices

LESSONS FROM A CARISHINA: CYCLING INFRASTRUCTURAL IMAGINATIONS FROM QUITO, ECUADOR
Abstract ID: 436
Abstract within Pre-Organized Session 16

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Sustainable transport policies that favor the bicycle have traveled around the world, pushing cities to adopt cycling measures in an attempt to a low carbon emissions. Global policy actors and trans-national policy networks have facilitated how the 'best practices' associated with cycling plans, programs and infrastructure mobilize (Montero, 2017). In particular, a sustainable mobility paradigm establishes a global imagination of who benefits from cycling and how cities who are pro-bicycle are usually also democratic. These global processes often embrace certain achievements, leaving aside the work of local actors whose voices often do not get translated into global planning circles(Miraftab, 2009). In 2019 at the World Urban Bike Forum in Quito, Ecuador, these tensions between translation and reality became evident. Local groups and event leaders embraced a feminist agenda through a series of solidarity actions like weaving in public space and calls to end sexual violence which are subjects that go unaddressed in

bike policy planning circles. The Forum itself ended with the ratification of new operating bylaws that promote actions against machismo, a dominant form of sexist masculinity. Such actions were deeply influenced by the work of Quito's women's bicycle collective, Carishina en Bici (CEB), which translates ironically from Quechua as "Bad Housewives that Cycle". This group establishes a cycling agenda that does not make it into global planning circles—spaces still dominated by scientific rational approaches that leave out situated knowledge (Haraway, 1988). CEB is a cycling collective that promotes an agenda to end violence in public spaces of the city while also pushing the limits of what feminist interventions in public space can look like (Gamble, 2019). This paper draws on ethnographic evidence collected between 2012-2019 in Quito, Ecuador that focuses on the events and efforts of CEB. It demonstrates how feminist cycling actors leverage activist and educational events to envision a future, non-sexist city(Hayden, 1980).

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Key Words: Cycling, Cycling Infrastructure, Public Space, Feminist Activism, Right to the City

DISASTER COLONIALISM: HOW COLONIALITY OPERATES THROUGH DISASTER IN PUERTO RICO
Abstract ID: 437
Abstract within Pre-Organized Session 16

RIVERA, Danielle [University of Colorado Boulder] danielle.rivera@colorado.edu, presenting author

Disasters are often viewed as singularities, without consideration for the impacts of continuously-poor and incomplete post-disaster reconstruction. However, disaster studies scholars in sociology have identified the concept of procedural vulnerability to explain the weaponization of planning procedures that support structural erasure (Veland, Howitt, Dominey-Howes, Thomalla, & Houston, 2013; Woods, 2017), generally by leveraging relational injustices (Hsu, Howitt, & Miller, 2015). These practices represent "deep colonizing" (Rose, 1996), whereby institutional structures are used to entrench colonization, even when the processes are intended to decolonize. From this, the term disaster colonialism (colonialismo desastre) describes the leveraging of procedural vulnerability to deepen coloniality (Rivera, Forthcoming).

Recentering this work in the United States, this paper illustrates the mechanisms through which disaster colonialism thrives in post-disaster Puerto Rico. Using the disaster events from the first twenty years of the 21st-century, specific planning mechanisms (particularly from the Federal Emergency Management Agency (FEMA)) are examined to demonstrate how disaster colonialism is occurring in Puerto Rico. Additionally, these mechanisms are discussed in the context of U.S. post-disaster reconstruction more broadly, identifying how they operate across multiple communities of color (Rivera, 2019, Lincoln Institute of Land Policy report). Ultimately, the paper points to a growing movement in the U.S. to address procedural vulnerabilities and relational injustices such as disaster colonialism.

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50 YEARS OF PRIDE: QUEER ORGANIZING AS RADICAL URBAN PLANNING
Abstract ID: 438
Abstract within Pre-Organized Session 16

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Parades have long been a vibrant yet often overlooked practice for consolidating and expressing grassroots power in public space (Davis, 1988). This paper argues that the historical struggle to develop pride parades have been a key site of radical planning which intervene in the urban imaginary to create space for queer bodies to exist in the city.

This year, Los Angeles celebrates the 50th anniversary of its pride parade yet the narrative around pride has shifted from a struggle for recognition and existence to a space of commodified celebration. We examine and analyze archival data from the ONE National Gay & Lesbian Archive and other related archives to identify the planning processes used in early LA Pride events compared to today, focusing especially on how these historical forms of community organizing have been especially powerful in reducing social isolation among queer people who may not have felt able to exist in public space.

Planning scholars have discussed the historic role of planning in repressing queer people (Frisch, 2002) as well as the importance of understanding the history and experiences individuals in the LGBTQ community to encourage dialogue (Forsyth, 2011), but our study goes beyond "inclusion" to demonstrate the sophistication of the queer planning at work in the development of pride. Through the lens of insurgent planning (Miraftab, 2009), we analyze the historical planning of LA Pride as a grassroots means for community organizing, building social capital and connection, and creating queer urban space—illuminating a powerful set of tactics for planners seeking spatial justice.

We thus ask the following research questions: How did the historical planning of LA pride demonstrate a queer planning praxis in comparison to standard planning practices of the time? And how did this planning praxis interface with concerns around social isolation among queer individuals? Critically, given how white, gay male narratives have often dominated LGBTQ histories, we focus on unearthing and analyzing materials that center women and people of color as an act of "archival justice" (Rawson, 2015). These narratives point toward the potential for a queer planning praxis as one which can create space for people who have historically been excluded from urban planning. These narratives can also reclaim the possibility of pride as a space of radical planning in contrast to the corporate-sponsored celebrations that they are often critiqued as having become.

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Key Words: spaces of struggle, queer urbanism, social isolation, community organizing, insurgent planning

PUNKING THE COMMON URBAN NARRATIVES
Abstract ID: 439
Abstract within Pre-Organized Session 16

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Planning participates in a kind of storytelling that "is not simply persuasive. It is also constitutive" (Throgmorton 2003). The capacity of planning to persuade and to constitute through stories, depends upon the socio-political structures that privilege the stories it has to tell and the futures it envisions. The stories planning tells work to shape both material outcomes but also ways of being, ways of knowing, and ways of evaluating. In order to radically rethink planning praxis, we need to consider and value stories not only as accounts of past events. We must critically position stories as reflections of the present, and evaluate the power they reproduce into the future. When we understand planning documents and planning processes as social narratives, we must also consider how they participate in the dominant narratives of that society, who they benefit, and who they continue to burden and exclude even in the stories that tell us otherwise. For Sandercock (2003), not only does planning learn from stories, "planning is performed through story." In this paper, I invert the statement to also call attention to which stories are performed through planning. I adapt performative narrative analysis (Reissman, 1993) to the analysis of three case stories of marginalized and alternative group placemaking events in Ottawa, Canada. These are the designation of Le/The Village, the construction of the Charlie Bowins Skateboard Park, and the production of the Ottawa Music Strategy. Each notably contribute to guiding principles of the Ottawa 2020 Official Plan towards being "a caring and inclusive city," "a creative city rich in heritage and unique in identity," and "a city of distinct and liveable communities." A key finding of this research is how each of the three case stories and the Official Plan draw upon and participate in "common urban narratives" (Finnegan, 1998). I identify three such narratives: the dangerous city in decline; the city as site of opportunity; and the city as site of injustice. Performative analysis considers not only the content of the narrative but also the role of the authors, characters, and audience. This method invites us to interrogate how these stories implicate each participant in "doing their identities" (Reissman, 1993). These case stories of the struggle to renew, build, access, legitimate and present a more desirable city each notably present the city as in need of a protagonist. I argue that these narratives allow the different participants to perform and conform to their respective foundational stories in order to reinforce identity, belonging, and morality. Ottawa as capital form, planning for the public, and grassroots DIY-ethos, are each heroically performed through the planning process. With an overarching desire to present democratic, progressive, and community-oriented city-building, these three case stories manage to reconcile the roles of its three protagonists, resolve conflict, and improve the "City for All." They tell us a good story. They tell us a story we want to hear. That is, except for those popularly represented as the antagonists of the city, those who interfere with the noble pursuit for the good city. Through critical autoethnography of punk placemaking in the city, I hope to disrupt the performance of good city-building through common urban narratives. I present an alternative urban narrative with punk as neither antagonist or protagonist, adopting instead an agonistic position and perspective to placemaking.

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Key Words: subculture, narrative, spaces of struggle, radical planning, inclusive

PROMOTING THE SUSTAINABLE DEVELOPMENT GOALS IN NORTH AMERICAN CITIES: CASE STUDIES & BEST PRACTICES IN THE SCIENCE OF SUSTAINABILITY INDICATORS
Pre-Organized Session 41 - Summary
Session Includes 148, 149, 151, 460

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In September 2015, the member countries of the United Nations adopted the Sustainable Development Goals (SDGs), which form a cohesive and integrated package of global aspirations with a clear set of quantifiable targets. The intention was for individual countries to commit to achieving the SDGs by 2030. However, since 2015, several North American cities have embarked on localization processes. In this session authors will present case studies from cities in the US and Canada on common themes for future adoption: 1. The ability to tailor the localization approach is a hallmark feature of the SDGs. When localization has occurred, the impetus has predominantly come from and with bottom-up efforts. 2. The SDGs represent a new way to communicate the comprehensive themes in urban development. Local jurisdictions are strategically implementing SDGs to further adoption and implementation of long-sought policies. 3. Tracking progress during localization has been able to leverage existing local data and indicator systems as well as identify data gaps. 4. Low awareness about the SDGs and lack of leadership in cities will hamper future attempts to localize them.

Objectives:

- Understand successful elements of localizing the SDGs in urban areas
- Learn about tracking systems and frameworks for measuring city-level progress towards sustainable goals

LOCALIZING THE SGDS IN BALTIMORE: CHALLENGES AND OPPORTUNITIES OF THE USA SUSTAINABLE CITIES INITIATIVE
Abstract ID: 148
Abstract within Pre-Organized Session 41

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In 2015, when member countries of the United Nations adopted the Sustainable Development Goals (SDGs), many cities in the US like Baltimore were in the grips of civil and racial unrest at a level not seen in urban America since 1968. So when the UN Sustainable Development Solutions Network (SDSN) selected Baltimore as one of the first cities in the US to localize the SDGs for the USA Sustainable Cities Initiative (SCI), the city had many challenges to overcome to potentially take advantage of a set of yet-unknown benefits. Given this backdrop of significant local upheaval, the SCI-Baltimore process focused on engaging multi-sector stakeholders to connect existing local, quantifiable targets and goals to the

global framework as well as using the SDGs to identify and coalesce around data gaps that might prevent continuation of business-as-usual and stave urban unrest in the future. This paper assesses these engagement techniques used for 'mapping' local data and priorities to the global goals, in terms of both technical considerations as well as translating grassroots efforts to the global framework. This translation between local and global became critical for ensuring Baltimore saw the localization effort to fruition instead of abandoning the process. Three main methods were used in Baltimore to make linkages with governmental plans and projects, local data repositories, and advocates and nonprofits. The first method involved the review of a broad range of plans and policies to assess whether existing strategies and goals were already aligned with the SDGs. This stocktaking effort identified: a) partner organizations that could share tacit knowledge about sustainable development in Baltimore; b) natural allies who would (and resistors who would not) collaborate on the SDG localization effort, and (c) indicators and measurement data for SDG target tracking. The second method drew on open data resources in Baltimore to identify a preliminary set of 56 indicators across the 17 SDGs. Participatory methods engaged a broad community to rank, add and remove indicators for final selection. Lastly, given the particular timing of the SCI-Baltimore initiative after the period of unrest, review of the SDGs revealed the glaring lack of locally available quantitative measures to track progress towards a more just city. The SDG localization process galvanized the collection of common data to track legal awareness among the public, equal access to justice, and fair outcomes for all who encounter the civil justice system. Over the course of a year, the SCI-Baltimore effort yielded insights for urban leaders and planners to use the SDG localization process to furthering inclusive, coordinated sustainable development efforts for cities. Key lessons include the need for leadership at all levels of government to value and promote the value to linking local priorities to shared global goals, for raising awareness in the US about the benefits of SDG-localization among local civil society stakeholders engaged in sustainability efforts, and the value of local data integration to track progress towards the global goals. From this paper, planners will better understand how connecting local efforts to global goals can help build broad coalitions around common data to ultimately help implement long-standing priorities.

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Key Words: SDGs, sustainable development, local data, community-based indicators, leadership

HOW LOCAL COMMUNITIES CAN ALIGN WITH THE UN SUSTAINABLE DEVELOPMENT GOALS: A SANTA CRUZ COUNTY CASE STUDY
Abstract ID: 149
Abstract within Pre-Organized Session 41

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For 25 years, Santa Cruz County (Calif.) has progressed toward its goal of achieving well-being and equity for everyone. More recently, the County has cultivated the conditions to successfully localize the United Nations' Sustainable Development Goals (SDGs) established in September 2015.

In this presentation, Susan Brutschy, president of Applied Survey Research (ASR), a California-based social research organization, explains how other local entities can cultivate those conditions in their communities. From there, she will demonstrate how Santa Cruz County leveraged those conditions and the SDGs to produce biennial reports that reflect current quality-of-life issues throughout the county and to provide the means that helped various entities set improvement goals in each category.[1] She also will include examples of those improvements.

The goal is to help communities around the globe understand how they can leverage the UN's mission to address root causes of inequities so they can be mitigated more fully and more directly. These include issues related to poverty, inequality, climate change, environmental degradation, prosperity, and peace and justice—all of which interconnect and apply to everyone.

At the foundation is a determined quest for health justice—the basic right of every person to have a healthy quality of life. It's a concept that everyone can stand behind. However, if communities truly are serious about achieving that goal, they must start at the local level and interconnect their efforts with communities in every nation. Only then can they deliver health justice for everyone.

The presentation will include community conditions necessary for applying the UN's SDGs:

- Commitment to wellbeing for all
- Individual and population measures of wellbeing via social connectedness
- Alignment and ability to coordinate and leverage action It also will hold up Santa Cruz County as a specific example of success, citing the biennial Community Assessment Project report[2], which tracks the county's progress vis-à-vis several measures of wellbeing, especially as they relate to the SDGs that are most relevant to the local communities.

And finally, the presentation will include recommendations for other communities wishing to adapt these goals for their own needs. Some of those recommendations include:

- Establish the conditions necessary for community involvement;
- Align the community's work within the framework of the SDGs by selecting those that are most relevant to your situations or that are most manageable and attainable;
- Select an organization that will fill the role as the "backbone" for the project;
- Conduct statistically valid, professionally administered surveys to provide the necessary data for a snapshot of current quality-of-life conditions and—with each successive survey—a comparison with past conditions;
- Provide a summary report, available to everyone, that will inspire individuals and organizations to make necessary improvements, ideally through collaboration;
- Finally, track progress toward meeting their chosen SDG goals, and make adjustments as necessary. By following the United Nations' SDGs, more communities, more nations, and ultimately the entire globe can enjoy true equity and health justice, along with the benefits of economic stability, quality education, improved health and health care, more livable communities, and a cleaner and more sustainable environment.

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Key Words: community indicators, social justice, SDG, localization

HOW THE YOUTH SOCIAL ENTERPRISE (YSE) MODEL SUPPORTS THE IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT GOAL #8 ECONOMIC GROWTH AND DECENT WORK IN THE TWIN CITIES
Abstract ID: 151
Abstract within Pre-Organized Session 41

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The United Nations Sustainable Development Goal #8 promotes inclusive and sustainable economic growth, full and productive employment, and decent work for all. Strategy 8.b.1 focuses on building a specific youth workforce system. This includes reducing the proportion of youth not in employment, education, or training, along with strategies to identify and provide support to opportunity youth[11]. The average unemployment rate for Minnesota is between 3.2-3.6%. Yet, the disaggregated rate for youth, predominantly youth of color, living in low-income areas is between 18-23%. To address this need, the Sundance Family Foundation of St. Paul, MN launched a grant initiative to promote Youth Social Entrepreneurship (YSE) and test its effectiveness as a model in strengthening a specific workforce development system with youth in 11 nonprofits from low-income areas in the Twin Cities. The YSE is a multi-indicator/ multi-structured model for providing equitable economic opportunities for individual youth and their communities. The model integrates 1) practices of positive youth development to strengthen personal agency 2) community/cultural engagement to increase social capital, and 3) workforce skills development. The YSE model also tracks the emotional impacts and socio-cultural disposition of youth in settings that might be challenging. Rather than focusing only on job acquisition, as do informal economy building or classic workforce skills training programs, the YSE model seeks to address several overlapping layers of complexity of the issue.

Nationally, lessons from this study may inform how replication of the YSE model could assist with the implementation of a common set of workforce indicators such as the SDGs by nonprofits serving low-income opportunity youth and youth from communities of color. Further it explores lessons learned when grassroots nonprofits with limited infrastructures and no financial incentives work together to adopt common indicators. While evidence-based challenges can and did arise during implementation of the YSE model, common indicators aggregated across these nonprofit organizations demonstrated increases in the development of personal agency and social capital. Youth were also exploring exciting careers and were encouraged to seek training options.

Minnesota set a goal in 2016 of 70% certificate or degree holders age 25-44 by 2025. One of the most educated states in the country, across all age groups, in 2016 58% of Minnesotans, age 25 to 44, had completed a postsecondary certificate or degree placing Minnesota third highest in the country. (Fergus et al, 2016). To achieve the 2025 educational attainment goal of 70% across all ethnic groups, an additional 121,425 postsecondary credentials (certificates and beyond) are needed. Of those, 37,397 must be attained by Latinx people, 34,428 from Whites, 33,462 from Blacks, 6,572 from American Indians, 5,524 from Asian Americans, and 3,546 from multiracial people (Hermida, 2018). For perspective, 71% of all future postsecondary credentials must come from racial and ethnic minorities, otherwise Minnesota will not reach the 70% educational attainment goal equally across groups (Hermida, 2018).

Demographic trends in the greater Minneapolis/Saint Paul metropolitan area demonstrate that youth of color, and youth from low income areas, are facing an assemblage of consequences as the result of structural inequality and how structural inequality is operationalized by statistically significant lower grades, standardized test scores, course selection, dropout rates, college completion rates for students of color and/or of low-income backgrounds. These finding are typical of other American Cities (Garcia, et.al, 2017; Raj Chetty et.al, 2017). This paper focuses the importance of a youth centered design, recommendations for the implementation of the SDG common indicators, and recommendations for how these indicators can contribute to continuous program improvement and public policy.

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[1] Youth who are neither in school nor the workplace

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Key Words: SDG, SDG8, SDG8.b.1, Workforce, YSE

MAKING THE SDGS RELEVANT FOR CITIES: USING THE COMMUNITY CAPITAL TOOL IN BRITISH COLUMBIA
Abstract ID: 460
Abstract within Pre-Organized Session 41

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The success of the UN Sustainable Development Goals (SDGs) is conditional on creating and implementing monitorable and transferable sustainability policies and practices in communities. In pursuit of sustainability, however, communities are challenged by the complexities of goal-setting, addressing multiple objectives and interests, meaningfully engaging citizens, and monitoring progress. One way to address these challenges is by adopting sustainability frameworks and tools. Despite the abundance of such tools, not all of them promote a whole-systems approach or assist in effective planning, implementation, and monitoring. The objective of our research was to support municipalities in achieving their long-term visions by providing effective and locally relevant sustainability tools that would also connect them to the broader context of the SDGs.

We engaged a mixed-methods, information-oriented approach within case study research, integrating quantitative and qualitative data collection and analysis. We worked with two communities in the Lower Mainland of British Columbia: the City of Maple Ridge (CMR) and the District of North Vancouver (DNV). The research foundation in these case studies is the Community Capital Framework and Tool (CCF and CCT). Its purpose is to support decision-making not only as a planning toolkit but also as a performance and progress assessment instrument.

In these case studies, we conducted a complex SDG-CCT-Local Goals matching and mapping exercise,

modeled on the work done within the USA Sustainable Cities Initiative under the guidance of the Sustainable Development Solutions Network. This mapping extended along three levels of decision-making within three frameworks: goals, targets and indicators of the SDGs, the CCT, and the case studies. We also collected data from various sources such as: related literature; current arena of sustainability frameworks, tools, and best practices; current socio-economic, environmental, political, and cultural context in CMR and DNV; their official community plans and other policy and strategy documents; interviews with elected and appointed officials; meetings with expert staff; and workshops with community members.

The mapping exercise revealed significant gaps in policies and objectives in both case studies: low consideration of wider national or global context, fragmented prioritization in policy-making and implementation, and little attention to whole-systems thinking. Although at the goals level there was partial alignment between local goals and SDGs, at the target level we found very few actionable, measurable targets in municipal policy documents. Similarly, at the indicators level we identified an overlap ranging from 25-32%, meaning that, even after excluding SDG indicators that are not locally relevant, municipal indicators still covered few of the remaining SDG indicators.

The interview data offered similarly important insights, particularly into the perceptions of local elected and appointed officials about global-level goals and international commitments. What seems as a simultaneously interconnected and distanced relationship between the multiple levels of government in B.C. provides a telling argument for the lack of interest or comprehension of the UN global agenda.

Our research findings highlight the imperative to educate local governments and citizens about the SDGs which, thanks to their versatile structure, can equip communities with a broad and holistic framework for decision-making processes, from identifying core values and planning to forming partnerships for inclusive implementation. Our recommendations to both municipalities focused on a customized framework with forward-looking and holistic-thinking indicators informed by the CCT and the SDGs.

Canadian cities that incorporate such tools into their regular practice can contribute to and become leaders in the achievement of Canada's Federal Sustainable Development Strategy which reflects Canada's commitment to the SDGs. We have every reason to expect that tools and approaches such as the CCT could work as well in other countries and we encourage sustainability researchers and planning practitioners to collaborate to this end.

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Key Words: Sustainable Development Goals, SDG localization, Urban sustainability, Indicators, Canada

RADICAL PLANNING 2: STORIES OF CHANGING PRACTICE
Pre-Organized Session 71 - Summary
Session Includes 334, 441, 442, 443

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While planning offers hope for better cities, decades of radical scholars and planners have exposed a troubled history of the complicity of planning in perpetuating spatialized injustice and domination. Frequently overlooked or silenced are the traditions and emerging actions of communities caught in these spaces of struggle, along with their capacities to imagine and to enact spaces of difference, spaces of resistance, and spaces of refusal. As part of the collective ongoing Spaces of Struggle project, these sessions help us to radically rethink what constitutes planning and who has the power and expertise to engage in city-making. Scholars in the "Stories of Changing Practice" session bridge social movement-building with community action through storytelling, knowledge co-production, and reflective practice.

Objectives:

- Lessons from scholarly traditions in radical planning for contemporary movements in equity and social justice planning
- Lessons on how to bring theoretical insights from other disciplines, specifically those that have a much longer history of engaging with communities
- Lessons on how to bring practical insights from communities actively engaging in transformative and insurgent collective placemaking practices

PERFORMANCES IN COMMUNITY DEVELOPMENT: TRACING THE WORK OF NON-PROFIT ORGANIZATIONAL NETWORKS IN EMPOWERING LOW-INCOME HOMEOWNERS
Abstract ID: 334
Abstract within Pre-Organized Session 71

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The housing and foreclosure crisis of 2008 brought considerable attention to the vulnerabilities of homeowners, particularly of low-income and minority households (Faber 2018, Hyra, et al. 2013, Massey, et al. 2016). Following the deluge of community organizing and class action suits against the widespread dispossession brought forth by the crisis, reparative funding provided to state and local governments along with the Dodd Frank Act (2010) found their way to local housing non-profits, amongst others, in the form of resources and a strong mandate for consumer protection.

In this research I study the scope and extent of service provision these housing non-profits engage in to assess how they intervene in the experience of buying as well as sustaining homeownership for low-income and minority households. I study three housing non-profits, their institutional and community networks, and daily practices in 4 case study sites in the Chicago region, using qualitative methods including in-depth interviews and participant observation. These housing non-profits assume multiple roles as they enable households to access government grants and subsidies, deliver counseling support at various stages of ownership, negotiate with financial institutions, and hedge against fraudulent market practices. These are, nonetheless, anticipated functions given the sources of their funding. However, my fieldwork also reveals that, these community actors go well beyond the dictates of state policy and stretch available resources to support low-income homeowners in their everyday lives. From providing 'financial self-defense' classes as one housing counselor calls it, to hand-holding customers through destabilizing life events like foreclosures and job loss, these actors successfully bridge the knowledge divide between episteme and metis or scientific knowledge and experiential knowledge (Tironi 2015), or in this case the bureaucratic procedures associated with policy implementation and legislation on the one side, and intimate knowledge of communities in need on the other. By training themselves to implement government policies and utilizing overt and covert identities they nuance their practices based on the needs of different members of these communities and speak to the specific nature of vulnerabilities and risks posed by intersectionality of class, race, age and family composition in navigating the housing terrain, thereby delivering 'a thousand tiny empowerments' (Sandercock 1998).

The dominant view in both policy and scholarship in the post 2008 context, has been that homeownership is not for everyone (Faber 2018, Hyra, et al. 2013, Massey, et al. 2016). This view, however, exacerbates class and race-based divides, by further legitimizing the already discriminatory tendencies of the current housing policy regime that promotes property ownership and agency for the affluent, and primarily tenancy and dispossession for the poor (Schuetz 2018). At stake for the black single mother household is not only claims to finance, state resources and real estate markets, but also to the full 'economic citizenship' (Reid 2014) that only property ownership brings in the United States. However, through my research I tease out the specific ways in which the housing non-profits use their networks and practices in subverting the view that homeownership is not for everyone. While they do not take the form of grand, confrontational practices, these institutions assume the role of double agents (Roy 2010) and work to enhance political consciousness and a sense of self-agency in the households and communities they work. Thus, these agents undertake the work of incremental social transformation (Beard 2003).

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Key Words: Spaces of Struggle, Low-income homeownership, Social capital, Empowerment, Non-profits

GRASSROOTS PLANNING AS A RESILIENT STRATEGY: LESSONS FROM LA CAMPANA
Abstract ID: 441
Abstract within Pre-Organized Session 71

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Hypothesis: The community processes in the informal settlement of La Campana qualifies as Subaltern Urbanism (Roy, 2011), and is of utmost relevance for community self-organizing to resist the real estate capital and "formal" planning by the state.

Context: For La Campana, an informal settlement in Monterrey, Mexico, a new way to relate to the public space had its origins as a result of a traumatic event originated due to the violence nested in this community during the Mexican War on Drugs initiated in 2007. La Campana is a consolidated informal settlement located in a vibrant urban area in Monterrey. The community settled in the decade of 1950-1960 in what once was a lonely hill surrounded by agricultural land. It borders with San Pedro, which is one of the wealthiest municipalities in Latin America, and with "Distrito Tec", a district with significant real estate interests due to a mega-urban project. La Campana was, for many decades, a forgotten place by the local authorities, only remembered before every election. That changed after a period of severe violence (2009-2013) as a result of the war on drugs. The drug dealers took advantage of the inaccessibility of La Campana due to the hill's topography; they established there using the community as a hiding place. Aggressive police operatives freed La Campana of most of the cartel presence (although they are still there in a more discrete way), leaving behind deep scars in the territory and in the way

people relate to each other.

Methodology: Using Participatory Action Research (Wilson, 2019), and unstructured interviews from fieldwork in 2019, we were able to research the trauma that the clash Cartel/Community originated in the settlers: a new way to interact with the public space. To overcome the shock of the curfew imposed by organized crime, a group of female neighbors created an NGO that initially focused on the modification of the public built environment to transform it into pocket parks for the kids. The NGO gets funds by donations to buy the materials, and community members contributes with their time and skills. The benefits in the community have been notable, and have brought attention from the local authorities, which paradoxically could menace the community's planning practices and identity.

Findings: The government and the private sector designed a partial comprehensive Plan for La Campana area and its surroundings. We argue that this Plan is evidence not only of profound oblivion to the community but a way to conquer the power spaces the community has won for the last five years of planning their community with limited but very imaginative resources.

Relevance: The theoretical framework for this project draws on various streams within the planning theory (PAR, empowerment, and decolonizing theories). For Sandercock (2000, 2004), the incorporation of actors that usually do not have a voice is crucial for the Planning challenges of the 21st century. Nevertheless, caution about participatory processes has its origin since Arnstein's A ladder of citizen participation (1969), more recently, Bayat and Biekart (2009), warn of the public participation of the society in the neoliberal era. For them, concepts such as decentralization, citizen participation, and the drive against corruption are the vehicles used by imperialist domination (Bayat & Biekart, 2009: 819). This argument aligns with Miraftab (2009: 33) discussion of citizen participation as a way to legitimize neoliberal goals through the perception of inclusion to achieve hegemonic power.

This paper argues that without a different approach from the city's authorities, the community organization is at risk of diluting, dismantling the community momentum, and leaving it vulnerable to the several real estate interests currently in the area.

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Key Words: Subaltern urbanism, Spaces of Struggle, Informal Settlement, Insurgent Planning, Latin America

TRANSNATIONAL NETWORKS OF INSURGENT PLANNING FOR POST-DISASTER RECOVERY
Abstract ID: 442
Abstract within Pre-Organized Session 71

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Post-disaster recovery is a complex, long-term process where communities must continuously assert their needs and priorities in government-led planning processes. In both research and practice, planners have

acknowledged that standard disaster recovery models are not adequately designed to accommodate bottom-up streams of local knowledge about needs, vulnerabilities, and priorities (McDonnell et al. 2019). Further, more often than not, these recovery models aggravate pre-existing spatial injustices and social vulnerabilities (Jacobs 2019). In response, grassroots organizations across different geographies have needed to assert their claims for a just recovery by creating spaces of active citizenship, engaging in counter-hegemonic practices, and connecting to transnational networks. My study will present a case where insurgent planning practices have been mobilized to advance a just recovery after Hurricane María struck Puerto Rico in 2017. My focus will be on how and to what extend Puerto Rican diasporic communities mobilize these practices from afar to support post-disaster recovery on the ground.

Conceptually and methodologically, this research is rooted in postcolonial thinking, drawing on a background of colonial relations of domination and what Huq (2020) calls: "context-specific political societies with embedded relations of internalized oppressions and exclusionary politics." Drawing on qualitative interviews, participant observation, and archival research in both Puerto Rico and Chicago between 2018 and 2020, I illustrate how diasporic communities and grassroots organizations in the island connect and develop a transnational network for post-disaster recovery. My work will illustrate that there have been significant gains and advances through these transnational networks filling important recovery gaps and asserting collective rights in a post-disaster recovery environment. Preliminary results suggest that, despite constrained democratic spaces for community participation in hazard mitigation and disaster recovery action planning, being in this case what Miraftab and Wills (2005) call "invited spaces", grassroots organizations in the diaspora have "invented spaces" of engagement for a just recovery in Puerto Rico.

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Key Words: disaster recovery, insurgent planning, transnational, diaspora, Puerto Rico

TALES OF PUERTO RICAN PLANNING INSURGENCIES: THE CASE OF VESPRA, THE JOINT ACTION COMMITTEE OF POOR COMMUNITIES OF PUERTO RICO AND THE COMITÉ ACCIÓN POBRES DEL CAÑO
Abstract ID: 443
Abstract within Pre-Organized Session 71

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Following Sandercock (2003), this presentation aims to foreground the marginalized stories of community organizers and community members that orchestrated an Avant-guard coalition to navigate, negotiate resist, and (re)imagine Puerto Rico's institutional planning/development ensemble in the 1960s. Different from other Community Action Programs (CAPs) across the US, VESPRA's actions were far

from political patronage or partisan politics or paternalism (89 Cong. Rec. Senate, 6732, 1966). On the contrary, VESPRA program equipped communities to claim their rights within the official colonial spaces, invited spaces (Miraftab, 2004), and to invent their own spaces when official access was denied. One of the most notorious collective action was the first meeting of the Joint Action Committee of Poor Communities of Puerto Rico; titled The Poor People Convention. Around 3,000 residents from communities across the Island participated in the gathering, attendees debated and passed eleven resolutions demanding active participation of residents of poor communities in government Boards, in the elaboration and implementation of plans, programs and public services activities such as transportation, development strategies, public housing, urban renewal initiatives. This action marked the beginning of many other mobilizations and concerted actions of communities across Puerto Rico; such as the case of the Comité Acción Pobres del Caño's efforts. By telling these stories, this work intends to contribute to extending planning praxis. In doing so, the stories were gathered using an uncommon research design in the planning field (Pinel, 2015), historical ethnography, which illuminates the pivotal relationships between political struggles and development/planning ideologies, and the spatial implications of these struggles as reflected in Puerto Rico today.

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Key Words: Insurgent Histories, Community Action Program, Puerto Rico, Colonialism

RADICAL PLANNING 3: REIMAGINING PLANNING PRAXIS
Pre-Organized Session 72 - Summary
Session Includes 444, 445, 446, 646

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While planning offers hope for better cities, decades of radical scholars and planners have exposed a troubled history of the complicity of planning in perpetuating spatialized injustice and domination. Frequently overlooked or silenced are the traditions and emerging actions of communities caught in these spaces of struggle, along with their capacities to imagine and to enact spaces of difference, spaces of resistance, and spaces of refusal. As part of the collective ongoing Spaces of Struggle project, these sessions help us to radically rethink what constitutes planning and who has the power and expertise to engage in city-making. By enabling us to rethink who we learn from, what we are open to learning, and how we learn, scholars in "Reimagining Planning Praxis" propose a basis for envisioning an ethical and imaginative socially transformative planning praxis.

Objectives:

- Lessons from scholarly traditions in radical planning for contemporary movements in equity and social justice planning
- Lessons on how to bring theoretical insights from other disciplines, specifically those that have a much longer history of engaging with communities
- Lessons on how to bring practical insights from communities actively engaging in transformative and insurgent collective placemaking practices

IMAGINING A SOUTHERN PLANNING PRAXIS FOR COMMUNITY DEVELOPMENT

VASUDEVAN, Raksha [The University of Texas at Austin] rakshav@utexas.edu, presenting author
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A 2019 ACSP conference roundtable entitled, "Radical and Insurgent Planning: Reflecting on Concepts, Stories, Geographies, and Futures" featured panelists (including the authors of this paper) who spoke to the adequacy of present-day planning theories to not only address urban problems in 'Global South' contexts but also to address contemporary crises in Western democracies (De Satgé and Watson 2018, Miraftab 2017, Roy 2009). In both contexts, racialized and impoverished subjects cannot access the same basic expectations for city services, design, participation, and governance (Fanon 1967, Holston 2008). Reflecting on this 'southern turn' in planning, Faranak Miraftab reflected that as a profession, "we have not recognized how planning has been complicit in the colonial project," and Leonie Sandercock stated that "social transformation moves at the pace of trust."

This paper revisits the theoretical, methodological, and community contributions of radical, insurgent, and critical planning to imagine a southern planning praxis for community development (Vasudevan and Nova, forthcoming). We develop a 'southern praxis' to bridge practice and theory, dismantling the idea of a hegemonic planning theory that is something apart from the lived realities of communities. By 'southern' we are not referring to a geographic location, but rather a re-centering of peoples and stories that have been left out of planning.

Our findings suggest that the future of an ethical and imaginative southern planning praxis lies in what some scholars are already doing, namely bringing theoretical insights from other disciplines, specifically those that have a long history of engaging with communities, in order to break from the rationalist foundations of planning and the profession's continued complicity in facilitating inequity. Additionally, many of these same scholars engage in long-term relationships with the people they are working in their research. Given the recent upsurge in global political demonstrations, including in the Dominican Republic and Chile, where the authors conduct community-engaged ethnographic work, we propose a reimagined southern planning praxis that is founded on co-theorizing, co-working, and co-advocating with community organizations and residents. Recognizing that planning is not acting in a silo, the interdisciplinary bend of 'southern scholarship' enables greater opportunities for dialogue, a more rounded and nuanced understanding of the cultural, political and historical specifics of a community's necessities, and the opportunity to develop relevant theories of the city based on people's historical experiences and future visions.

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Key Words: Spaces of Struggle, planning theory, community development, southern praxis, radical planning

INDIGENOUS FUTURITY: RECOGNIZING THE UNACTIVATED POSSIBILITIES OF OUR ANCESTORS

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Indigenous futurity considers the unactivated possibilities of ancestors, creating community in a present temporality, and building worlds for future relatives. The Indigenous community is (re)centered within a futurity praxis, and does not work solely towards tactical ends to meet normative planning needs. However, a futurity praxis functions to perform other work such as building kinship and relationality or producing and sharing knowledge, all of which can operate as community caretaking. Community caretaking is vital to community futurity, and it does not require the assistance of formal planning entities, or planners as experts to carry out this work. In this paper, I will share examples of local Indigenous youth functioning as community caretakers.

Indigenous futurity methodologies are guided by theories drawn from community knowledge. Further, Indigenous community knowledge is embodied, lived, and felt. (Million, 2009; Simpson, 2014; Sweet & Ortiz Escalante, 2015) Because it is embodied, community members might feel secure with sharing their embodied knowledge with someone they think might dismiss or not fully comprehend it. Maori scholar Linda Tuhiwai Smith (2013) argues that the legacy of Western research has disrespected Indigenous communities and their knowledges. Therefore in community planning, it necessary for community to access culturally appropriate methodological tools to carry out community-led processes of knowledge production and caretaking. This type of community planning seeks community kinship and not necessarily justice from the state—in particular with *Missing and Murdered Indigenous Women* carceral approaches do not examine and extinguish root causes that are bound up with resource extraction that render Indigenous land and bodies as expendable. Further, it seems that it is not possible to create decolonial worlds from a carceral approach that fails to recognize the devaluing of Indigenous lands and bodies and instead offers laws and policies to address symptoms. Futurity methodologies provide means for local communities to enact and create other possible worlds with the resources they embody. Indigenous communities do not have to wait on permission from anyone and an Indigenous futurity praxis enables them to begin conceiving of and enacting their futures they wish for in a present temporality.

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Key Words: Indigenous, futurity, caretaking, kinship, praxis

"PLANNING ISN'T READY FOR A PERSON LIKE ME": WOMEN OF COLOR AND COMMUNITY-BASED KNOWLEDGE PRODUCTION IN THE PLANNING ACADEMY

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Despite significant institutional gains for women in planning over the last fifty years, many challenges remain for female scholars of color, who face compounded barriers due to institutional racism, sexism, and xenophobia in academia. A backlash against the politically-engaged planning of the late 1960s

emerged in the 1990s, just as women of color were entering the planning academy in greater numbers than ever before. These women, most of whom focused on community-based equity research throughout their academic careers, faced insidious discrimination and persistent precarity as waves of tenure denials disproportionately affected scholars of color.

Nonetheless, women carved out discursive space for planning research addressing the intersections of gender, race, ethnicity, and sexuality at the community scale, and refocused planning epistemologies and historiographies around principles drawn from feminisms of color and decolonial and indigenous feminisms. By repeatedly questioning who has the expertise and power to engage in planning, women of color built on a long tradition of interventions in the debate over how planning is defined. In a field that values bridging practice and theory, academic women have historically been discouraged from and even penalized for doing community-based work, and scholars who take the radical position of knowledge co-production and community self-determination have been marginalized.

How did women of color challenge dominant structures of academic knowledge production and value in the academy, and at what individual and collective costs? This paper examines how the boundaries of academic planning have been enforced upon and renegotiated by women of color. Alongside archival documents and intersectional planning scholarship, I analyzed ten interviews with women of color who became planning scholars in the 1990s and 2000s. Through these accounts, I examine the ways in which female and non-binary scholars of color embody the tensions at the core of planning's history, present, and future, and explore how intersectional feminist praxis can be used to reinvigorate activism in the academy.

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Key Words: spaces of struggle, women of color, academia, planning history, intersectionality

PÒSALI CASE STUDY: AN INSURGENT PLANNING HERSTORIOGRAPHY
Abstract ID: 646
Abstract within Pre-Organized Session 72

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This study examines how pre-disaster sustainable planning practice informs durability in post-disaster shelter outcomes. I employ insurgent planning herstoriography, a mixed-method approach to storytelling, in order to understand Haitian women vendors and residents' post-2016 Hurricane Matthew experiences. The methodological design is conceptually framed by a Black feminist lens as a radical, progressive and transformative act of research practice and a contribution to the planning discipline. By combining quantitative statistical analysis of survey data and qualitative methodologies including field-notes, interviews, and content analysis, I analyze how Haitian women imagine new tourism spaces and environmental justice in Pòsali, Ayiti. Acknowledging that just sustainabilities are limited in a post-natural disaster context by parallel human disaster factors, I suggest planning and policy

recommendations to advance the sustainability planning triangle's contributions to resolving development conflicts in the face of ongoing environmental injustice.

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Key Words: disaster planning, insurgent planning, sustainability planning, critical black feminism, environmental justice

RESEARCHING ACCESS AND EQUITY IN A STATE OF CONTRADICTIONS
Pre-Organized Session 144 - Summary
Session Includes 958, 959, 960

MELENDEZ, Jose [University of Oregon] jmelende@uoregon.edu, organizer

The state of Oregon is a place of extreme contradictions. For example, in 1857, Oregon, by popular vote, added exclusionary language against African Americans to its constitution, which would not be repealed until 2000. Yet, since the 1960s, Oregon's progressive politics have often placed the state at the forefront of prominent national social issues, such as land use policies, environmental protection, and sanctuary state, amongst others. This dichotomy has resulted in an increasing divide within the state between rural and urban residents, namely the rural areas east of the Cascadia Mountains and the urban centers of what is commonly referred to as the "Emerald Valley," along the I-5 corridor. It is within this state of contradictions that the scholars in the Access and Equity research group at the School of Planning, Public Policy, and Management at the University of Oregon are investigating the nexus of theory and practice regarding issues of access, equity, social justice, representation, and power for underrepresented and underserved communities. The intention for this panel is to highlight access and equity research in a "state" of contradictions.

Objectives:

- Participants will be able to compare and contrast different forms of influencing decision-making by immigrant communities at the state, regional, county, and city levels.
- Participants will be able to describe how immigrant communities are transforming communities in Oregon.
- Participants will be able to explain how immigrants' challenges to access can generate innovative solutions.

DOCUMENTING THE TERRAIN OF DECISION-MAKING BODIES ACROSS THE STATE OF OREGON
Abstract ID: 958
Abstract within Pre-Organized Session 144

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Including the public in decision-making processes is often required by statutes at the national, state, county, and municipal levels (Bryson, Quick, Slotterback, & Crosby, 2013; Fung, 2015; Quick & Feldman, 2011). However, inviting members of the public into decision-making is more commonly used as a strategy to secure public buy-in on decisions that impact communities directly (Ibid), even when public involvement is not required by law. Regardless of initial motivation, the actual number of bodies that exist across the state of Oregon at the different jurisdictional scales is unknown. Additionally, many factors about these bodies are indefinite, including who sits on these boards; their demographic make-up; and, any efforts that have, are, or will be used to diversify them to reflect the growing diversity of communities across the state. Together, these factors create a black box of related unknowns.

The research presented in this paper was specifically conducted to shed light on the unknowns related to a common government practice and mechanism that impacts communities across the state of Oregon, especially those from under-represented groups, such as immigrants. Since under-served communities usually lack meaningful representation at all levels of government bureaucracies, be they at the state, county, or city (Riccucci, & Van Ryzin, 2017; Bradbury, & Kellough, 2011), their involvement in decision-making processes can be seen as an alternate way to have them influence policy and outcomes (Hafer, & Ran, 2016; Quick & Feldman, 2011). Therefore, in phase one of this study, we focused on access to civic engagement through decision-making bodies by conducting a cross sectional study of both the different engagement bodies available for decision-making across the state and their demographic composition. The research questions that drove this phase of the study were: What were the different levels of decision-making available across the state (i.e. from appointed and elected boards to other spaces); and, to what extent were immigrants represented at these different levels? For these research questions, the levels of decision-making were identified using online research of the government agencies who manage these boards. Once the boards were identified, additional online research, surveys, and network outreach were conducted to determine the demographic composition of the various boards.

Having collected the baseline data, the study turned to phase two: investigating the level of engagement by immigrants on said boards. The following subset research questions drove this phase two of the study: What challenges prevent or discourage immigrants from engaging in the different levels of decision making; and, what features have supported the incorporation of immigrants in more successful instances? To answer these questions, we conducted semi-structured interviews of immigrant leaders who sit on these decision-making bodies from across the state.

Preliminary findings of the study reveal that of the 515 jurisdictions inventoried, only 7.6% have immigrant representation, either first or second generation regardless of country of origin. Besides presenting the methodology of the study for replication in other states, the paper will describe in greater detail what the numbers look like across different jurisdictional scales that include: statewide, county, city, and special districts/regional. Additionally, interviews from over 50 immigrants who sat on a variety of the inventoried bodies reveal multiple variables at play that either support or hinder their access to join said boards or their abilities to serve effectively once they join. The paper will connect particular variables to either policy or administrative changes at different jurisdictional scales that can make a difference for diversifying representation on decision-making bodies.

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Key Words: Decision-Making Bodies, Representation, Immigrants, Civic Engagement, Oregon

ARTS, CULTURE, AND IMMIGRATION: CREATING AN INCLUSIVE OREGON
Abstract ID: 959
Abstract within Pre-Organized Session 144

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Changing demographics in Oregon reflect a growing "newcomer" population of immigrants, refugees, and asylees. Nevertheless, change is not always easy for these newcomers, the communities they settle in, and long-term residents. The immigration sector is in search of new strategies to organize and develop basic resources to support immigrant, refugee, and asylee constituents and the significant contributions they make to the economies, civic infrastructure, and social life of their local communities. Artists and arts organizations have an opportunity to support these vulnerable populations as well as to celebrate the common threads that bind us together. The arts and cultural sector can serve as a platform to help immigration policy expand beyond "arts for arts sake" programming to one that embraces a broader mission of inclusive economic development, community cohesion, and equitable communities in which all people can thrive.

The purpose of this paper is to identify current and future ways in which arts and culture can drive local, place-based outcomes for the immigration sector across a statewide level (Oregon). Research findings identified three key immigration sector goals and the salient arts and cultural strategies that support them. Key immigration sector goals for Oregon-based organizations included expanding services to non-urban areas, new forms of targeted support related to newcomer's immigrant experience, and developing local and statement welcoming policies. Some immigration sector organizations in Oregon are already employing arts and cultural strategies in their work. Some arts and cultural projects across Oregon are already aligned with organizations in the immigration sector network. This study highlights critical lessons to sustain current or catalyze future collaborations between both fields. The fact that many cases already exist is a strong sign of their potential to collaborate on common goals.

Data are drawn from 25 semi-structured interviews with immigration advocates, government officials, social service providers, artists, and arts organizations; over 50 case studies; and content analysis of local policies. Transcripts were coded on MaxQDA computer-assisted qualitative data analysis software (CAQDAS) through a grounded theory approach. Research findings highlight the ways artists and cultural organizations can act as integrated community development allies in local, place-based immigration sector work, helping to bridge newcomers and longer-term residents and working together to create multivalent spaces that signal belonging in Oregon.

The union of the immigration and arts and culture fields provides a window into state-level needs at multiple scales of service provision. Furthermore, a seemingly polarizing debate about immigration policy in the U.S. exemplifies the importance of understanding changing ethnic demographics as a value to U.S. society. The nature of the migration experience has more to teach about unity and support and common bonds than about difference and division. Creating bridges across the immigration sector goals and arts and culture strategies featured in this research illustrates the importance of local-level planning work as the vanguard for testing immigrant and refugee incorporation strategies between new and extant populations. Lessons from this research create a foundation for scaling this work across the regional, ethnic, and political domains in similar less-urbanized and more rural-oriented states.

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Key Words: Immigration, Arts, Culture, Placemaking, Oregon

RANCHITOS: IMMIGRANT INTEGRATION VIA LATINO SUSTAINABLE AGRICULTURE
Abstract ID: 960
Abstract within Pre-Organized Session 144

SANDOVAL, Gerardo [University of Oregon] gsando@uoregon.edu, presenting author

This paper investigates the relationships between immigrant integration and agricultural, environmental sustainability in Oregon. We provide evidence that ranchitos (Mexican-immigrant owned small rural ranches) serve as an important mechanism for immigrant integration as they regenerate place and belonging via their sustainable agricultural practices. Hence, understanding ranchitos' roles in rural communities provides an essential contribution to rural community planning (Flora 2000; Hibbard 2011) as ranchitos highlight important relationships among ethnic cultural practices, environmental sustainability, and immigrant integration.

The research method included a revelatory case study method based on 30 in-depth interviews of ranchito business owners, local economic development professionals, and city officials. We answered the following research question: Are Latino immigrant in Eastern Oregon involved in Sustainable Agricultural Practices? If so, how?

Our findings point to ranchitos reshaping immigrant integration efforts via community economic development, by producing alternative foods and through their placemaking efforts.
Latino ranchito owners are creating local added economic value, keeping wealth in the community, encompassing an environmental ethic, and supporting community/cultural assets. Ranchitos' support roles make this organic and generative immigrant integration possible by supplementing their formal incomes and supporting the buy local movement, providing safe and healthy food, and recreating a Mexican rural lifestyle.

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Key Words: rural development, sustainability, agriculture, rural planning

TRACK 2 - ROUNDTABLES

CARRYING TWO BUCKETS: RECONCILING THE FRAGMENTED LIVES OF COMMUNITY-ENGAGED PLANNING SCHOLARS
Abstract ID: 86
Roundtable

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HENDRICKS, Marccus [University of Maryland] mdh1@umd.edu, participant
MINNER, Jennifer [Cornell University] j.minner@cornell.edu, participant
UMEMOTO, Karen [University of California Los Angeles] kumemoto@ucla.edu, participant
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Recognizing that approaches to engaged scholarship range from participatory planning activities to Participatory Action Research (PAR) to Community Based Participatory Research (CBPR), this roundtable session addresses community-engaged research broadly. Our specific focus is to facilitate a dialogue about the challenges of a system in which community-engaged scholars feel they must "carry two buckets." One bucket comprises a research program that centers community knowledge while simultaneously creating community change and enhancing scholarship. The other is tailored more specifically to satisfying the requirements of the academic institution.

Community-engaged research is widely recognized as an approach that has the potential to co-create knowledge for action to address social equity, build community capacity, and empower marginalized populations. However, the challenges to simultaneously meeting the expectations of academia ("publish or perish") and satisfying the principles underlying community-engaged research (Israel et al. 2017) - such as sharing power with community stakeholders in terms of research design and authorship (Gaillard & Peek 2019) and directly addressing community-defined problems (Campbell 2012) - are substantial.

The perception that community-engaged research is not valued in promotion and tenure processes can dissuade researchers from pursuing this kind of work (Stanton 2008), particularly early career researchers (Raynor 2019). Additional challenges include uncertainty around outcomes, the requirements of human subjects review, and the potential for mismatched project timelines in co-learning processes that need to incorporate relationship-building and trust development.

This roundtable session focuses on understanding the strategies researchers have used to successfully navigate challenges that arise as a result of this "two-bucket" system. The key discussion questions for the panel focus on the themes of navigating ethical dilemmas, providing guidance for researchers who wish to pursue community-engaged research, and enacting structural change:

1. What key ethical principle guides your research process? How has adhering to this principle helped you to maintain your commitment to community-engaged research?

2. Drawing upon your own experiences of "carrying two buckets," what advice would you give to planning academics who are interested in pursuing community-engaged research?

3. Looking forward, what structural changes are needed to support community-engaged planning academics so they can more fully engage in community partnerships that balance academic and community benefit? What steps need to be taken now to move us toward the goal of being able to carry a single bucket?

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Key Words: community engagement, engaged scholarship, ethics, social equity, research impact

PLANNING ON THE EDGE: VANCOUVER AND CHALLENGES OF RECONCILIATION, SOCIAL JUSTICE AND SUSTAINABLE DEVELOPMENT
Abstract ID: 417
Roundtable

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SANDERCOCK, Leonie [University of British Columbia] leonies@mail.ubc.ca, participant
HONEY-ROSES, Jordi [University of British Columbia] jhoney@mail.ubc.ca, participant
ANGELES, Leonora [University of British Columbia] nora.angeles@ubc.ca, participant
CAMPBELL, Heather [University of British Columbia] heather.campbell@ubc.ca, moderator

While Vancouver is heralded around the world as a model for city building, Vancouver and its region is experiencing challenges in addressing Indigenous reconciliation, the influx of global capital, economic shifts, growing polarization, and environmental concerns. This roundtable explores the reality behind the rhetoric of Vancouver's reputation as a sustainable city, and how to reorient Vancouver and its region's development trajectory along a more environmentally sound and equitable path. The recently released book, Planning on the Edge: Vancouver and Challenges of Reconciliation, Social Justice and Sustainable Development, authored by planning scholars and practitioners, and indigenous leaders, forms the basis of the discussion.

Panelists are:

Leonora Angeles, Associate Professor, SCARP, UBC. Nora will discuss the challenges of immigrant integration and civic capacity building in Metro Vancouver in an era of strong neo-liberal influences in the immigrant settlement sector, and what concerned stakeholders can do about them.

Penny Gurstein, Professor, SCARP, UBC. Penny focuses on what has led to Vancouver becoming one of the most unaffordable cities in the world, with the consequent socio-economic impacts, and the housing innovations that are occurring to address these impacts.

Jordi Honey-Roses, Associate Professor, SCARP, UBC. Jordi will discuss Vancouver's ambitious goal to be the greenest city in the world with a particular look at how water flows in the city. In many respects, Vancouver has an admirable water network, but there is still a sustainability gap in how water is managed, in large part because few households have water meters and water use is higher than comparable cities with similar climates.

Leonie Sandercock, Professor, SCARP, UBC. Leonie will discuss what 'planning for co-existence' might mean from an Indigenous perspective, given that the Metro region is home to eleven First Nations who have been here since 'time immemorial' as well as a significant urban Indigenous population comprising people from many different First nations across Canada as well as Metis and Inuit peoples.

Moderator: Heather Campbell, Professor and Director, SCARP, UBC

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Key Words: Reconciliation, Social Justice, Sustainable Development

COMMUNITY ECONOMIC DEVELOPMENT AS PLANNING: EXPLORING THE ROLE OF LABOUR MARKET INTERMEDIATION
Abstract ID: 726
Roundtable

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RANTISI, Norma [Concordia University] norma.rantisi@concordia.ca, participant
SCHROCK, Greg [Portland State University] gschrock@pdx.edu, participant
WOLF-POWERS, Anna Laura [Hunter College, City University of New York] aw2416@hunter.cuny.edu, participant
CLARK, Jennifer [The Ohio State University] clark.3550@osu.edu, organizer, moderator
RANKIN, Katharine [University of Toronto] katharine.rankin@utoronto.ca, participant
NOLAS, Lauren [Rutgers, The State University of New Jersey] len27@scarletmail.rutgers.edu, participant

Economic development has long been situated on the margins of Planning theory and practice (Rankin 2020), despite the fact that economic factors are critical in shaping the nature and location of activities (e.g. employment, public services). And within economic development, community economic development - which places communities at the center of these fateful choices – is even more remote. Yet, in light of the 2008 financial crisis, the precarious nature of work and heightened environmental degradation, there has been a renewed interest in promoting alternative models that can ensure more holistic approaches to how we plan our sources of livelihoods and shared wealth. Community economic development, which moves beyond the conventional economic development frame of 'creating more jobs and income' to attend to the quality of jobs and distribution of wealth via participatory means, is at the center of sustainable development approaches today. Thus, a key objective of our roundtable is to reclaim CED as a critical field of Planning by showcasing initiatives in the area of labour market intermediation and what they mean for how we conceptualize Planning.

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UNIVERSITIES DRIVING URBAN DEVELOPMENT: BUILDING INNOVATIVE PARTNERSHIPS FOR STRONGER CITIES
Abstract ID: 1133
Roundtable

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SOTOMAYOR, Luisa [York University] sotomay@yorku.ca, participant
MITRA, Ratkim [Ryerson University] raktim.mitra@ryerson.ca, participant
OSUTEI, Nene [University of California, Irvine] nosutei@uci.edu, participant

The city has long been a magnet for smart talent. Top cities in the world are constantly being ranked by political, economic, environmental, personal safety, health, education, transportation and other public service factors, as cities compete with each other for investment. Impacts of neoliberalization and the extension of urbanization processes globally demand reconsideration and a strategic pivot of the role of 'the new urban' universities (Addie, 2017). Universities are important partners in city growth and city ranking as they attract talent; first as university students migrate to cities to study and then live as professionals (Addie, 2017). Further, universities are becoming actors in the governance of regional economic development through activities to support economic and entrepreneurship development in their regions (Pugh, Hamilton, Jack, & Gibbons, 2016). While universities continue to be major centres for innovation, due to globalization and neoliberal policies that enable markets, universities are increasingly reliant on powerful private markets and institutions (Bose, 2015). Combined with a shift of power from governments to private institutions, urban development actors in globally ranked cities have changed (Busquets, 2006). Universities in these successful cities also face pressures that are created by the success itself through the facets of contemporary urbanism – gentrification, studentification, and youthification (Moos, Revington, Wilkin & Andrey, 2019). This in turn affects universities themselves in regards such as cost of housing, the ability for universities to attract and retain professors and students, and transportation planning for this large and typically unstudied population.

Thinking beyond the problematic tendencies of university-city connections and the university as a monolithic rational agent (Addie, 2017) this session will explore the questions: What are innovative ways that universities have been leading through urban development partnerships for institutional growth, for building strong faculty and student bodies, and city competitiveness? What are the opportunities and potential challenges of these activities and partnerships? The round table shed light on universities' activities using various case studies of how universities are involved in urban development and regional economic governance, including the initiatives of the four Toronto university presidents as they influence the agenda of city development – StudentMoveTO and StudentDwellTO. These partnerships raise questions for planners concerned with housing and transportation provision for students and how universities are changing communities and their role in the greater city.

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Key Words: Urban development, housing, transportation infrastructure, public private partnerships, regional economic development

TRACK 2 – INDIVIDUAL PAPERS

URBAN PLANNING FOR SOCIALLY MIXED COMMUNITIES: URBAN PLANNERS' APPROACH TO DISADVANTAGED SOCIAL HOUSING ESTATE TRANSFORMATION.
Abstract ID: 57
Individual Paper Submission

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The overall theme of the paper is social mixing strategies in urban planning in the case of redevelopment of disadvantaged social housing estates in Denmark. Social mixing I define as housing strategies aimed at attaining a socio-economically mixed resident base within a given neighborhood.

The paper poses the questions: How do urban planners perceive and address the issue of social mixing in disadvantaged social housing transformation? And in particular: How do urban planners consider and approach community building, and what bearing does it have on the planning process?

The paper is based on an empirical analysis of urban planners' response to the Danish so-called Parallel Society Agreement (PSA) of 2018. The PSA requires municipalities and social housing organizations to put forward plans to fundamentally change the housing tenure composition in 15 severely disadvantaged estates.

The main objective behind the PSA was to obtain a more socio-economically mixed resident base. The key instruments stipulated were demolition or sale of social housing units combined with infill dwellings (market rate rental or owner occupied) as well as improved connectedness to the surrounding cityscape. By forcing through demolitions and tenure mixing, the PSA marked a radical shift in the approach to disadvantaged social housing estates; from an approach based on welfare interventions towards a strategic physical redevelopment approach.

The paper is based on 25 in-depth qualitative interviews with urban planners involved in plans for transformation in four different estates following the PSA. Informants in each case cover 1) municipality and housing organization senior staff leading the overall urban development and planning; 2) urban planning practitioners; 3); external consultants to the building owner, e.g. architects or landscape architects; 4) private developers, and; 5) community building organization executives.

There is plenty of evidence that social mixing does not automatically make for well-integrated and well-functioning communities. On the contrary, estates that have been redeveloped to enhance social mixing,

have often been shown to be marked by significant inter-group social distance and tensions. Consequently, building cohesive communities cutting across cultural and socio-economic divides in transformed social housing estates is often hampered by disputes over territory, access to amenities, entitlements, recognition, prejudice, and community norms. Cultural displacement and social control experienced by minority and socially disadvantaged residents are among the important factors challenging inclusive community building.

In this paper I see the urban design and transformation planning processes as the starting point of community transformation and community building. Following a Bourdieuian perspective on planning I perceive the planning process as a power struggle between actors with different leverage in terms of economic, social and cultural capital. Socio-economically deprived as well as ethnic minority residents are by default disadvantaged in the planning process.

The paper finds that (1) while stakeholders are concerned with building inclusive communities, they remain hesitant and uncertain as to how to address the task, particularly in terms of how urban design and planning may promote inclusive community building. (2) Resorting to well-known procedures such as community hearings is favored out of familiarity, though often not providing new insights. (3) Innovative urban design processes, that could address community building issues, are hampered by the absence of an organizational framework underpinning cross-cutting and multidisciplinary learning processes. (5) The challenge of attracting investments as well as socioeconomically advantaged newcomers is overshadowing the task of promoting community building, thus diminishing management focus on the need for innovation and organizational learning.

The paper points to the need of exploring and developing new tools and methods for designing and planning disadvantaged social housing estate transformations, both in academia and practice.

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Key Words: Social mix, Disadvantaged social housing, Community building, Urban planning

BUILDING IMAGINARIES: CREATIVE PRACTICES TO IGNITE PUBLIC IMAGINATION AND COMMUNITY PRESERVATION
Abstract ID: 75
Individual Paper Submission

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Art and creative place-making shape experiences of the public realm in communities (Zitcer, 2019); they also help us collectively assemble and tend to public memory (Minner, 2019). The methods employed to visualize the city and its pasts and possible futures such as art, media, science fiction, and other forms of storytelling can inspire creative thinking, awareness, and action (Dobraszczyk, 2017). Artistic media can

render visible the many layers of identities and meanings in cities. They may also strengthen attachments to place and the built environment. Creative media can shape ideas or imaginaries of the city whether this is through public art in the landscape or artworks held anywhere that can inspire new awareness of cities.

Creative place-making has many similarities in objective to historic preservation. When done well, they strengthen connections to place and community. While certain elements of preservation's ability to tell stories is obvious -- such as with historic plaques -- much of preservation's power remains largely invisible to many members of a community. Preservation may remain intentionally invisible, so as not to disrupt the continuous experience of a place. Preservation and adaptation of existing, ordinary building stock is essential to efforts to conserve flows of material and energy through city systems in order to address mitigation of greenhouse gases. However, many of these preservation and adaptation efforts – along with their positive effects – remain invisible along with so many other forms of maintenance, care and repair and its associated labor (Denis and Pontille, 2019).

This paper represents faculty-student-community partner research undertaken to begin to address these connections. An initial research question guided this search: "What are creative means of raising consciousness and instilling curiosity and consciousness about the built environment, social histories, cultural landscapes, and collective identities that can translate into greater care and stewardship for place and socially just cities?" Two cohorts of students in classes about art, preservation, and the just city at Cornell University participated in this research. Students in the classes ranged from undergraduate, master's and PhD students. While many were in planning and preservation programs, students came from a variety of programs across the university. The classes were inspired by initial and ongoing research conducted with artists and on the artistic practices of artists and filmmakers (e.g., Minner 2019; Abbott and Minner, 2019). This research represents a step toward identifying creative means of community preservation – in particular, the potential role of 'socially-engaged,' creative place-making and other creative practices to repair, maintain, celebrate, defend, remember, reinterpret, adapt, and preserve places and communities.

As detailed above, the first two aspects of this research bring together exploration of: 1) 'socially engaged' art and creative place-making that can render ideas and histories visible and 2) preservation as a form of care for the built environment. A third and equally important dimension of this research is on the visualization of the 'just city.' Preservation efforts struggle to respond to issues of equity in the flow of resources in a community. Urban neighborhoods are either threatened by an overabundance of outside investment (spurring gentrification and displacement) or by disinvestment (and subsequent abandonment and vacancy). Furthermore, the needs of marginalized communities, may not find aid from tools such as landmarks or historic district designations (Ryberg-Webster, 2016). There is a need to creatively engage in imagining additional forms of community preservation methods. Thus, this research attempts to bring three distinct domains in focus – art and creative-place-making; community preservation; and equity. An outcome of this research is a prototype educational kit, developed by students, to ignite public imagination around sensing and caring for cities and the built environment.

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Key Words: Art, Preservation, Creative Place-making, Visualization, Community Development

FIGHTING FIRES AND CHASING DEADLINES: MAIN STREET REVITALIZATION ORGANIZATIONS AND THEIR INSTITUTIONAL ENVIRONMENT
Abstract ID: 81
Individual Paper Submission

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Downtown revitalization has become a nearly ubiquitous undertaking throughout the municipal landscape of the United States. In the hope of curtailing the effects of twentieth-century downtown disinvestment, suburbanization, and deindustrialization, local coalitions of public and private stakeholders have decided to reverse these trends and restore the vitality and character of their historic business districts. However, this process looks very different across communities of various sizes, state governments, and commercial legacies. In this paper, I use survey data from a universe of over 1800 communities participating in the Main Street Program (MSP). My analysis examines how a local MSP's organizational environment influences various components of program performance. I particularly focus on the "administrative home" of state-level MSP coordinating organizations, which vary widely across the country, ranging from various departments within state government (North Carolina, Colorado), to the state economic development authority (Iowa, Michigan), or as an independent non-profit organization (Ohio, Wisconsin). I test whether heterogeneity within the organizational environment influences the performance and economic outcomes of local MSPs.

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Key Words: revitalization, organization, community development

"WHAT DO WE WANT? HOUSING! WHEN DO WE WANT IT? NOW!": THE RISE AND SUCCESS OF KC TENANTS ORGANIZING IN KANSAS CITY
Abstract ID: 95
Individual Paper Submission

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Since the 2008 housing crash, many Kansas City homes have been foreclosed, forcing families onto the streets. These effects continue to impact residents today. As a result of both gentrification and slumification, landlords file on average 42 evictions per business day in Kansas City, MO (KC Eviction Project, 2017). Race is the biggest predictor of whether or not a person will be evicted in Kansas City, even with income held constant. Increasingly, those evictions are filed on the basis of nonpayment of rent. A whopping 48 percent of Kansas City households rent their homes, and half of those renters are cost burdened, spending over 30 percent of their income on rent (KC Eviction Project, 2017; Desmond 2016). Like many other American cities, Kansas City is haunted by a history of racial segregation, restrictive

covenants, redlining, predatory lending, and disinvestment (Gotham, 2014; Wagner, 2003).

However, in the lead up to the 2019 Kansas City Mayoral and City Council elections, a new grassroots organization emerged with a mission to fight for more equitable housing in the Kansas City metro. Kansas City Tenants (KCT) was founded with the mission of organizing on behalf of all those experiencing housing insecurity to ensure that everyone has a safe, healthy, accessible, and affordable home in KC. Led by a multiracial, gender-inclusive, and multigenerational base, KCT has been successful in mobilizing and effecting policy change. They have accomplished this by building coalitions among poor and working class tenants and through innovative organizing strategies that brought housing to the attention of key stakeholders in Kansas City. Presently, 85% of the KCT's base lives below the Federal Poverty Level and over 75% of its base is uninsured or on Medicaid/Medicare. Kansas City is about 60% White, 29% Black, and 11% other races; whereas KC Tenants' base is 40% white, 40% Black, 15% Latinx, 3% Asian, and 2% Native American. KCT's base allowed the organization to stage direct actions, write a People's Housing Platform, make housing a focal point of the 2019 mayoral and city council elections, and successfully advocate for the adoption of its Tenants Bill of Rights. Their work has been featured in local and national news stories, contributing towards a campaign for a national Homes Guarantee proposal (Ayala and Irazábal, forthcoming) adopted by several presidential candidates.

Our research project analyzes how KCT was able to develop such a robust base so rapidly, with traction among city, state, and national government officials, but also identifies where the organization has yet to make inroads, tracing these challenges to historical and current racial and class policies and politics that may hinder efforts of grassroots movements to bridge such divides. Engaging in a historical analysis of housing insecurity in Kansas City and the US, we identify the political, economic, and socio-spatial factors that have contributed to the emergence, rapid growth, and significant success of this organization. Using GIS mapping and spatial statistical analysis, we detect communities that have been skipped over by the movement so far and to what extent to understand where future outreach and engagement efforts might be more effective at bridging across race, ethnicity, and class. Using in-depth qualitative interviews and quantitative survey data from those with active involvement to no involvement, we identify the factors contributing to (non)participation among different community groups.

This research foregrounds the experiences and the power of the most marginalized, those suffering from housing insecurity, experiencing or risking homelessness or eviction. Based on the analysis, the study offers recommendations for KCT to sustain their momentum and lessons to similar social movements, organizations, and planners striving for socio-spatial equity in Kansas City and beyond.

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Key Words: housing, organizing, social movement, ethnicity-race, Kansas City

UNDERSTANDING HOW NEIGHBORHOOD CONTEXT AFFECTS IMMIGRANT INTEGRATION
Abstract ID: 142
Individual Paper Submission

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In this study, we investigate the role urban planners can play in building pathways for immigrant integration, or the dynamic, two-way process in which immigrants and their receiving society work together to create secure, vibrant, and cohesive communities. Current research in this area suffers from two major gaps. First, integration is typically measured rather narrowly and relies solely on objective variables such as economic incorporation, language acquisition, or educational attainment (Portes and Rumbaut, 2014). Second, the field has not seriously considered the role of neighborhood context (i.e., "place") in creating a sense of belonging for immigrants. Drawing on 356 surveys of immigrants administered in neighborhoods throughout the Denver Metro Area, we first examine how neighborhood types (urban, urban edge, and suburban) shape immigrant integration. We then determine whether the relationship between neighborhood type and integration level varies between immigrants with and without legal status. Examining variation across legal status is important because undocumented immigrants are often more restricted in urban mobility, are more likely to be residentially segregated, and are more vulnerable to exclusionary policies and practices (Burciaga & Martinez, 2017).

To measure immigrant integration, we use a well-established framework developed by Ager and Strang (2008) that captures 10 dimensions of integration. To assess the impact of neighborhood context, each respondent is sorted into one of three categories established in the Denver Zoning Code: urban neighborhood, urban edge neighborhood, or suburban neighborhood. Classifications are based on street patterns, building placement and height, land uses diversity and intensity, and mobility options. For areas outside the City of Denver, two independent coders used Denver's form-based code descriptions to assign neighborhood contexts to respondents' locations, with 99% agreement. We then use multivariate regressions to assess associations between respondents' experiences of integration (dependent variables) and the three neighborhood contexts (independent variables). Models also include interaction terms between neighborhood context and legal status to assess whether legal status modifies the relationship between place and integration. We control for potentially confounding variables such as education levels, immigration status, and duration of stay in the U.S.

We hypothesized that place should matter in shaping integration outcomes for immigrants, and that documentation status modifies this impact significantly. Our initial findings indicate that, among other outcomes, immigrants living in suburban neighborhoods feel more integrated into their communities than those in urban areas, with residents of urban edge neighborhoods falling somewhere in between. The findings are similar for documented and undocumented immigrants. This might suggest that immigrants tend to feel more "at home" when they live in suburban neighborhoods that represent a vision of the American Dream rather than in traditional urban ethnic enclaves. In addition, discussions with immigrant-serving organizations in the region suggest that residents of urban neighborhoods in the fast-growing Denver region tend to feel less rooted and less integrated into mainstream society because of fears they will soon be displaced due to gentrification pressures facing many inner-ring neighborhoods.

This study contributes to an emerging body of literature and policy in a number of ways. First, it introduces a key spatial-analytical construct for immigration scholars that can help tease out the relationship between the built environment and immigrant integration (Németh, 2019). Second, it recognizes the important role that planners and designers can play in building more inclusive and integrative spaces for underserved populations. Third, it helps nonprofits, policymakers, and other state actors advocate for built environment improvements in existing and potential arrival neighborhoods. And finally, it can benefit the daily lives of immigrants in the Denver metro area and beyond by showing the powerful ways that "place matters" for immigrant integration.

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Key Words: immigrants, inclusion, neighborhood effects, built environment, belonging

THE ROLE OF RACE IN AMERICAN COMMUNITY DEVELOPMENT PLANNING: RETHINKING STATE VS. MARKET
Abstract ID: 152
Individual Paper Submission

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Much of the best urban analysis on the planning and development of large American cities sees, rightfully, the central role played by race and racism in shaping spatial patterns and aggregate outcomes. Most well known is the effect of redlining, that explicitly targeted African Americans and the neighborhoods they occupied. A dominant theme running though these accounts is the central role played by the U.S. state (i.e., federal, state, and local governments) in carrying out these racist actions. This paper seeks to challenge this account.

Its central research question interrogates the issue of how to best understand the proper role played by state actions and market forces in creating and perpetuating racialized harms, especially the racial wealth gap, in contemporary U.S. urban planning and community development. The paper uses conceptual and historical analysis to answer this research question, marshaling a wide range of data and other empirical evidence to develop its central thesis. It finds that, while contemporary urban research purports to take race seriously in its account of the planning and community development of large American cities, in turns out that, ironically, careful analysis rooted in an array of rich data sources demonstrates that it does not take race seriously enough. That is, it does not do full justice to the myriad ways that race plays a role in shaping urban outcomes (spatially and socially) – outcomes that stem from processes that are at once both deeply structural and systematic. This is especially the case in accounts of the current racial wealth gap. One particularly notable finding is that we need to understand American community development as driven more by the dynamics of racial capitalism, rather than merely as a case of state-inflicted racial discrimination.

There has been an explosion in interest by community development planners in the development of large American cities and the role played by race. Community development planning needs to understand this phenomena, both for its own sake, but – more crucially – in order to better understand how the field can contribute to more racially just practices that ameliorate and even counteract the most serious negative impacts on people of color. Of particular importance is the effort to understand and rectify the racial wealth gap in the United States, where white wealth and resources far outstrip that of African Americans, something that helps exacerbate and perpetuate racialized inequalities and deprivations, as well as ongoing dispossessions. The paper concludes with an analysis of community-based strategies, drawing on case examples in community development planning to illustrate salient possibilities, that challenge racialized inequalities in US cities and further the goals of social and racial justice.

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Key Words: Racial inequality, community-based development strategies, American cities, racial capitalism, social justice

NORTH-SOUTH DIALOGUES: DESIGN AND ENVIRONMENTAL JUSTICE IN THE CITIES OF LOS ANGELES AND SÃO PAULO
Abstract ID: 175
Individual Paper Submission

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Sustainable development has become the benchmark economic model of the world's leading nations with the aim of ensuring that future generations have the secure right to have their needs met. However, socially disadvantaged people and communities have been excluded from the process of institutionalizing sustainable development. Acselrad (2009) draws attention to the fact that environmental degradation, as well as its perception and mitigation, is not democratic, thus causing an unequal distribution of environmental risks.

Environmental justice can be a democratic and inclusive tool to foster real transformation and decisions that can take place in an equal and fair manner for all. The construction of this new scenario must be participatory, scalable, transparent and multidisciplinary, which demands the articulation of many social and political actors in the long run. Although recent, the concept of environmental justice has been consolidated in its theoretical bases in the areas of Environmental Law, Health, Environmental Management and Public Policy, Social Sciences and Geography. But what about in the field of practice?

The main objective of this research is to survey, classify and analyze actions and projects in the fields of urban planning, architecture and design undertaken with communities and social groups in the two major cities of Los Angeles, in the US, and São Paulo, in Brazil, in light of environmental justice (EJ) concepts and the UN's Sustainable Development Goals (SDGs). This work's intention is to understand the constraints (conceptual, social, environmental, political and material) articulated in the chosen sites, together with the relationships between the actors and design tools that have been used.

The two cities selected as sites of analysis differ in many respects but are similar in other ways, such as the presence of social inequality, and the need for public policies and interventions that promote social justice for affected people and communities. For the analysis of the macro context of São Paulo, the research takes several academic works as references that deal with multiple bases and data visualizations. Theoretical discussion will take place with the works of Acselrad (2009, 2010, 2015). In the case of Los Angeles, resources include the Urban Displacement Project coordinated by UC Berkeley in partnership with other universities and research centers, including CNK, the Environmental Justice Organizations, Liabilities and Trade (EJOLT), and the Environmental Justice Screening and Mapping Tool (EJSCREEN). The main theoretical discussion will take place with Ong (1988, 1995, 2012, 2016, 2018, 2019).

This research methodology is primarily located in the broad field of Applied Social Sciences, emphasizing Urban Planning, Architecture and Design, and is characterized by a qualitative approach. The theoretical foundation, and the extraction, manipulation and reading of data adopts tools and

sometimes transposed methods originating in other disciplines and areas of knowledge in an interdisciplinary relationship. The adopted methodology is Grounded Theory, following the constructivist perspective of the American sociologist Kathy Charmaz (2018, 2017, 2016, 2014).

It is understood that this research is committed to the three dimensions of knowledge construction described by Severino (2016). According to the author, these constitute education in the sphere of higher education, especially in universities: the epistemological dimension in a perspective of knowledge (research); the pedagogical dimension and its relation to learning (teaching) and the social dimension linked to the perspective of extension (extension). But it is also, and mainly, a two-way education in its dialogue between, "scientific or humanistic knowledge", produced by the university and, "lay, popular, traditional, urban, peasant knowledge coming from non-Western cultures ... that circulate in society," defined within the concept of an 'ecology of knowledge' as described by Professor Boaventura de Souza Santos (2011).

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Key Words: Environmental Justice, Urban Planning, Architecture, Design, Community-based projects

GROWTH OR EQUITY: MEDIA NARRATIVES OF THE FUTURE IN POST-KATRINA EAST BILOXI
Abstract ID: 181
Individual Paper Submission

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The study of media narratives offers an avenue for understanding the public framing of both the prospect for, and policies of, planning. Local media narratives construct a version of reality and are viewed as trusted chronicles of daily life (Wilson & Mueller, 2004). Local media has the power to form a contextualized language and an imagined cohesion in the creation of community identity (Anderson, 1983). News reports work as tools in which individuals may incorporate their own ideas through forced frames of reference driven by media narrative. The rhetorical frame drives the narrative in the act of policy setting (Schön, 1979). By laying out the story of a proposed future through a compelling perspective, a cast of characters, and plot development, the media provides a narrative that the public then interprets.

The power of the media to disseminate stories that marshal support for differing sides of debate holds strong influence over the planning process. The now-famous axiom that the news media directs which ideas the populace thinks about, is true, and even truer is that the news media directs the way the populace thinks about those ideas (McCombs & Shaw, 2003).

The east side of Biloxi contains the most diverse neighborhoods in Mississippi. A spit of land between the Bay of Biloxi and the Gulf of Mexico, it is a place where AME churches, Buddhist temples, and Catholic cathedrals all lie within blocks of one another. It is a neighborhood where shotgun houses, new casino resorts, and "starchitect" designed museums stand alongside decades-old seafood processing plants.

Historically a poor neighborhood with a rich cultural heritage, East Biloxi has a poverty rate of more than 34% and an economic and cultural history strongly attached to the sea. Springing from French colonial roots, East Biloxi was home to the city's first African American community, followed by Yugoslav immigrants, and later Vietnamese, all working in the seafood and maritime industries. Today, the area is touted by both elected officials and local media as a site of intense tourism and casino development.

This program of research is focused on the problematic disconnect between the reported future and the drive towards increased social and economic equity. The media's role becomes problematic for free and open debate because local news is often less of a "watchdog" and more a source of boosterism (Shumow & Gutsche, 2015). Local elites and officials harness the power of the media to reinforce established power structures by using specialized language and through the reporting of specific events or ideas (Vincent, 2000).

Linking equity with narrative inquiry is a novel approach to understanding how diverse groups imagine their shared future. Findings come from the print newspaper Sun Herald and the broadcast television station WLOX between the 2009 adoption of the current comprehensive plan and 2019.

Through this narrative analysis, this project specifically answers the following questions:

1. How do media reports narrate future development in East Biloxi?

2. How do media reports narrate equity in East Biloxi?

3. How do media reports narrate the cultural heritage and identity of East Biloxi?

4. What is the overall level of discourse surrounding planning, growth, and equity in East Biloxi?

5. How do these reports combine to communicate a narrative of planning in East Biloxi?

The narrative analysis of these media reports uncovers the prevailing narratives and frames of reference concerning equity and the future in racially diverse and economically stressed neighborhoods.

Local media can offer a unified frame of reference. Through the study of media narratives, researchers and practitioners can more artfully craft future policy and planning narratives to provide the greatest general benefit.

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Key Words: Equity, Diversity, Planning Future, Media, Narrative

(MIS)TRUSTING THE PROCESS: HOW COMPLICATIONS IN THE BUYOUT PROCESSES CAN DEGRADE PUBLIC TRUST

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The increasing intensity of weather events and geographic reach of disasters in the US in modern times has sparked interest in relocating households out of risky areas, a strategy known as "managed retreat." Historically, this has been facilitated by the federal government through "buyout" programs, the largest and oldest of which is FEMA's Hazard Mitigation Grant Program (HMGP). This program provides funding to local governments for purchasing significantly damaged homes in the aftermath of disaster declarations from voluntary homeowner participants. Through this program, FEMA has helped fund the buyouts of close to 40,000 properties over the last three decades (Mach et al. 2019). While largely considered a successful hazard mitigation tool for the federal government, households are often wary of participating because the buyout process can be lengthy and bureaucratically cumbersome, and often lacks transparency (Greer and Brokopp Binder 2017).

Local governments play a crucial role in the implementation of the buyout program. They are responsible for representing the interests and needs of their constituents and facilitating the administration of the buyout program. In doing this, they act as a crucial link between the people they serve and both the state and federal governments. This places them in a precarious situation where the successes and failures of the other levels of government, that are often outside of local control, affects their relationships with their own constituents (Olshansky, Hopkins, and Johnson 2012).

Scholars and practitioners understand that trust between households and buyout administrators is a key ingredient to willing participation and retention, making it an essential aspect of overall program success (Vries and Fraser 2012). However, there is scant research on understanding how trust is gained or lost in the buyout process. This study employs interview data from 18 local administrators of the HMGP in North Carolina after Hurricane Matthew in 2016, and more than 300 North Carolina-based newspaper articles related to post-Matthew buyouts. Fifty of North Carolina's one-hundred counties were included in the presidentially declared disaster following Hurricane Matthew. While there was substantial need for government assistance in disaster recovery, available funding only allowed the State of North Carolina to approve 800 buyouts. At the time of this study, over three years after Hurricane Matthew made landfall, none of these projects have been completed.

Our preliminary findings suggest that the time that it has taken to implement the program, the miscommunication of details from the federal government to residents as it is filtered through state representatives and then local administrators, and a lack of clearly articulated guidelines on program requirements has led to an erosion of trust in the buyout process. On the flip side, there was a lot of goodwill and trust at the beginning of the buyout process due to community members' memories of previous successful buyout programs. For example, in the program following Hurricane Floyd (1999), over 2,000 homes were bought out in a period of months. Our findings suggest that this base of goodwill has largely been squandered, implying that future buyouts will face increasing difficulties. By elucidating the specific and nuanced ways in which trust is built or eroded, we suggest policy recommendations for improving communication and public participation to increase the likelihood of success in future buyouts. This research fills a gap in research studies about local implementation of HMGP and offers recommendations for improving trust in the HMGP process to lead to improved outcomes in future programs (Greer and Brokopp Binder 2017; Sipe and Vella 2014).

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Key Words: Public trust, buyouts, local government, resilience, climate change

EARLY LESSONS FROM DETROIT'S COMMUNITY BENEFITS ORDINANCE
Abstract ID: 233
Individual Paper Submission

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In 2016, Detroit voters passed a community benefits ordinance (CBO) making it the first city in the country to mandate that developers arrive at an agreement with local residents to provide benefits from development projects. This ordinance draws from the creation of community benefits agreements (CBAs) that have been implemented across the country since the 90s; these agreements have won benefits like jobs, affordable housing and amenities for local communities. In light of the renewed investment interest in gentrifying inner cities, CBAs between community coalitions and developers have aimed to address concerns that development carried out with public subsidies might bypass responsibilities to longstanding communities. However, there are often challenges in terms of developer follow through and difficulties in establishing community coalitions that wield the power to negotiate with developers directly. In response to these factors that jeopardize the effectiveness of CBAs, Detroit codified the strategy into law through its CBO. Detroit's ordinance is pioneering in that it uses policy to create the conditions for communities to negotiate with developers for benefits, and mandates that they arrive at an agreement. This ordinance applies to projects that are $75 million in value or more, or that are receiving $1 million or more in public financial incentives. The negotiations are overseen by the Planning and Development Department, and take place between the developer and a nine-member Neighborhood Advisory Committee (NAC) of residents living in the project impact area.

The literature on CBAs has done a thorough job of outlining key aspects of agreements for well-known cases and the challenges in leveraging negotiating power for communities (Leavitt 2006). Literature on CBAs has also theorized on the ideal role of local governments in negotiations (Wolf-Powers 2010). Relatedly, some scholars have claimed that the obvious next step in strengthening CBAs is to codify them into law (Gross, LeRoy, and Janis-Aparicio 2002). However, with few examples of how this can be done (Belongie and Silverman 2018; Vance 2017), ways of formalizing unpredictable and ad hoc CBAs into consistently used policies are absent from the literature. The case of Detroit's unique community benefits ordinance provides an opportunity to explore this gap in the literature further. This paper answers the questions: 1) what have been the successes and challenges of Detroit's approach to securing community benefits? And 2) how is the process being refined to improve outcomes for communities in the future?

This case study research draws from the qualitative analysis of development documents, policies and interviews with key stakeholders. Stakeholders interviewed include developers, city planning staff, NAC members and activists responsible for proposing the ordinance and advocating for amendments to it. This research shows that the ordinance is successful in its establishment of agreements for more than ten projects where NACs have secured over 170 distinct benefits for their communities, including affordable housing, jobs, streetscape improvements, and public transit among many others. However, this research

also indicates that there are several shortcomings that threaten the potential for communities to have their voices heard in development, including a lack of transparency regarding public financial incentives and uneven access to key development and policy knowledge. Further, since the renewed development interest in Detroit is centered in neighborhoods with strong real estate markets, and NAC members must reside in the project impact area, representation on NACs is biased towards more affluent residents. This paper considers these findings and the experiences of local communities in light of the city's ongoing attempts to amend the ordinance, making suggestions for how it could be modified to shift power dynamics that have historically disenfranchised Detroiters from the benefits of development.

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Key Words: Detroit, Community benefits agreement, Community benefits ordinance, Redevelopment

THE EVOLUTION AND RETROFITTING OF WORK-UNIT COMMUNITIES UNDER A SELF-ORGANIZING LOGIC: A CASE STUDY OF XIANLU NEW VILLAGE COMMUNITY IN NANJING, P. R. CHINA
Abstract ID: 234
Individual Paper Submission

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Throughout the planned economy era in P. R. China (1949-1978) and the following two decades, the work-unit system, a special organization system that gathers urban populations around different working places and with the common welfare system as its most distinct characteristic, has played a significant role in the country. However, as the domestic and international environment changed around the 1980s, the national government deemed the system an impediment to the country's modernization and began to slowly abandon it. Nonetheless, the built form was not so easily erased. Today, forty years have passed since the 1978 economic reform. While many working quarters have been regenerated, relocated or demolished, most work-unit communities (living quarters) have been left behind. However, under the new economic and political backgrounds, the future development of most Chinese cities will focus on the existing housing stock, and so the retrofit of these work-unit communities will become a priority and thus contribute to the revival planning of Chinese cities.

This paper aims to explore reasonable and applicable retrofitting strategies that would follow the inner self-organizing logic of the work-unit community. This will be done by studying both the administrative and morphological evolution process of a typical enterprise work-unit community in Nanjing as a starting point, with the self-organization theory as a supporting theory and the typo-morphology approach as the primary physically-oriented methodology. In doing so, this research will offer a much-needed study of

Chinese work-unit communities, provide innovative research ideas and methodologies for the field, provide strategic support for the national existing stock-based development policy, and enrich the research on work-units in the second-tier cities of the country.

It is expected that the official end of the housing reform in 1998 and the geographic relocation of working quarters are two important turning points in the evolution process of the work-unit community, of which the latter often occurs a bit later, and has more influence on the administrative and morphological changes of the community. Generally speaking, before the two turning points, the factory or the work-unit acts as the sole management role for both the working and the living quarter. After that, multiple role players are involving in the process, such as the residents' committee, the developer, the property management company, the volunteers, and perhaps the factory too. The morphological evolution is analyzed through the spatial and social changes in this paper. The spatial morphological evolution of the work-unit community, is to some extent the opposite to the administrative one, a process from diversity to paucity. While there are relatively many spatial morphological changes before the two turning points, such as the continuous building constructions, extensions and reinforcement, the spatial morphological changes are quite limited afterwards. But the social morphology changes, taking the population composition and property rights as two evaluation indicators in this paper, tend to be complicated after the two turning points. It is anticipated that, in both phases, before and after the two turning points, there exists an either strong or weak self-organizing process within one work-unit community, and in principle, its borders have been dissolving and gradually merging into the surrounding urban environment. At last, it is expected that the pros and cons of the process differ between communities. Using an enterprise work-unit community in Nanjing as a starting point in this paper, other types of work-unit communities could be further selected and studied. From this and future analysis, practical retrofitting strategies can be refined, all of which would follow the inner self-organizing logic of the work-unit community, only to promote, maintain or perfect the process with certain interventions, such as policy, technical and financial support.

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Key Words: Work-unit Community, Administrative Evolution, Morphological Evolution, Self-organizing

RESILIENCE CONVERSATIONS WITH HURRICANE HARVEY RESIDENTS IN RECOVERY
Abstract ID: 255
Individual Paper Submission

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Two years after Hurricane Harvey, researchers and practitioners are still trying to understand how resilience and recovery manifest in different communities. The vulnerability literature finds that communities recover from extreme climate events, such as Hurricane Harvey, when social vulnerability is reduced (Adger, 2006). Cutter, Boruff, and Shirley (2003) conclude that limited or no access to information can put communities at greater risk of disasters and make them less resilient. Aldrich and

Meyer (2014) and Lalone (2012) argue that developing strong social networks enables vulnerable populations to have more access to resources during disasters, thereby increasing their resilience. Meaningful change and increased equity also occur when vulnerable population groups participate to raise concerns about the status quote of inequity (Benner & Pastor, 2015).

Our research elicited lay perspectives and local knowledge about resilience and recovery in the nine counties most impacted by Hurricane Harvey flooding (Harris, Galveston, Fort Bend, Jefferson, Liberty, Montgomery, Waller, Brazoria and Chambers, Texas). Our research question was: how did vulnerable residents view equity and resilience in the recovery? We held focus groups and community meetings with vulnerable residents in each county. Each meeting was designed for residents to discuss their concerns to the whole group, in break-out sessions, and in one-on-one interviews. Participants were a convenience sample provided to us from our partnership with a non profit advocacy organization, the Coalition for Environment, Equity and Resilience (CEER).

At each community meeting, we provided an interactive base map on which residents could provide their local knowledge of flooding and other hazards. Residents were also given new information about the hazards they face by way of GIS maps showing flood zones, social vulnerability, food access, environmental hazards, and population demographics. Residents walked from map to map and discussed their concerns one-on-one with a professor or graduate student stationed at each map. This interaction at the mapping stations cultivated new realizations and concerns of health risks to environmental hazards and the coorelation between lack of food access in areas with a high concentration of people of color. The interviews revealed that most residents believed social capital and access to technology, expressed in a variety of ways, was the most valuable recovery resource available to them.

In conclusion, with citizen driven dialogue and carefully designed meeting formats and communication tools, our research explored local knowledge on equity and resiliency in a region where extreme flooding events have occurred and are certain to occur again. Our research shows that collaborating with vulnerable populations will provide a better understanding of equity in disaster recovery and in the operationalization of resilience.

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Key Words: Resilience, Equity, Vulnerability, Disaster, Social Capital

NEIGHBORHOOD CHARACTERISTICS, HOUSING CONDITIONS, AND LIFE SATISFACTION IN THE TWIN CITIES, U.S. AND GUANGZHOU, CHINA
Abstract ID: 303
Individual Paper Submission

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People's living environments, including the condition of neighborhood and housing, could have substantial impacts on their satisfaction with life. For example, the pleasantness and safety of open spaces and parks in a neighborhood are associated with residents' life satisfaction (Sugiyama et al., 2009, Parra et al., 2010). Homeownership and house sizes are also correlated with life satisfaction and mental health (Zhang et al., 2018; Pevalin et al., 2017). Although many studies have explored the association between living environments and life satisfaction, few of them investigate how this association differs across regions and cultures.

To approach this topic from a more comprehensive perspective, this study examines housing and neighborhood conditions using household-level survey data collected in two distinctive metro areas: the Twin Cities, located in the Midwestern United States, and Guangzhou, located in South China. We employed the Gradient Boosting Decision Tree (GBDT), a machine-learning algorithm, to examine the explanatory power of each living environment variable on life satisfaction. The study identified four major aspects of the living environment in both surveys: housing conditions, neighborhood characteristics, accessibilities (to other destinations), and sense of communities. After confirming the internal consistency, we calculated the mean of the individual variables in each category and created four new variables. We then put the variables from each survey into two GBDT models for the two metro areas and control for age, household size, education, gender, income level, and years living in the neighborhood in both models.

Table 1 shows the modeling results. Collectively, living environment variables have much greater contributions to residents' life satisfaction in Guangzhou (62%) than in the Twin Cities (32%). The sense of community has a similar level of association with life satisfaction in both metro areas. Nevertheless, the variable housing conditions has a significantly larger association with life satisfaction in Guangzhou than in the Twin Cities. We could potentially interpret this result from three perspectives: economical, cultural, and psychological. Economically, compared with Twin Cities, Guangzhou's housing is much less affordable. The lack of affordability makes housing conditions a higher priority for Guangzhou residents than for Twin Cities residents. Due to a larger wealth gap, Guangzhou residents' housing conditions also have greater disparities than the condition in the Twin Cities. According to the social comparison theory, larger disparity prompts more attitudes in comparison with each other, which further leads to a greater influence of housing conditions (Suls & Wills, 1991). Culturally, Chinese people have the tradition to view fixed assets, including housing, as status symbols. Therefore, housing conditions have greater value to Chinese than to U.S. residents. Finally, as a city in a developing country, the average income of Guangzhou residents is still lower than the average income of Twin Cities residents. So psychologically, the lower income puts Guangzhou residents on a lower level of the Maslow hierarchy of human needs, rendering them more focused on physical comforts such as housing conditions.

This study conducts a comparison between two distinctive urban areas in the U.S. and China. We believe that the results of this research provide valuable insights into the understanding of the connection between urban living environments and life satisfaction, which further helps create happier and more livable houses and neighborhoods.

Table 1 Modeling Results

	Variables	Association with Life Satisfaction	
		Twin Cities	Guangzhou
Living Environment	Housing Conditions	14%	36%
	Sense of Community	10%	11%
	Neighborhood Characteristics	5%	7%

	Accessibility	3%	8%
	Total	32%	62%
Demographics and Socio-Economics	Income	32%	10%
	Education	12%	2%
	Age	11%	10%
	Household Size	6%	2%
	Years Living in the Neighborhood	6%	8%
	Gender	0%	6%
	Total	67%	38%

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Key Words: Housing, Neighborhood, Community, Happiness, Machine-learning

HISTORIC PRESERVATION IN SHRINKING CITY COMPREHENSIVE PLANS
Abstract ID: 345
Individual Paper Submission

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This paper focuses on the ways in which recent comprehensive planning efforts in shrinking cities have addressed issues of historic preservation. In shrinking cities, sustained population loss and economic decline have left a landscape of vacancy, abandonment, and property decline (Mallach, 2011). Local comprehensive plans provide a guide for the future of cities, including their built environments. As such, exploring the incorporation (or lack thereof) of historic preservation within shrinking city comprehensive plans illuminates how, why, and to what extent planners value the historic built environment. In recent years, demolition has risen as a top strategic priority in many shrinking cities (Heim LaFrombois, Park, and Yurcaba, 2019). Our analysis of comprehensive plans explores if and how planners navigate the tensions between demolition and preservation. This qualitative study asks: How do legacy city comprehensive plans address historic preservation and the historic built environment? How do planners across shrinking cities balance the competing interests of preservation and demolition? The research

offers insights into the current relationship between preservation and city planning, particularly within the context of shrinking cities (Birch and Roby, 1984).

The research is based on an archival analysis of fifteen recent comprehensive plans in shrinking cities. We use Ganning and Tighe's (2018) universe of eighty shrinking cities, of which fifty-eight have comprehensive plans. We then limit the study to the fifteen shrinking cities with comprehensive plans and a population greater than 150,000. Using the comprehensive plans as archival sources, we conduct textual analysis to explore how each of the plans addresses historic preservation. The findings confirm existing research that suggests historic preservation has grown into an integral component of city planning efforts (Yeater, 2011). Across the board, the comprehensive plans demonstrate that cities place a high value on their history, built environments, and historic resources. While some cities emphasize preservation on its own, others embed preservation within their focus on housing, neighborhood revitalization, and/or downtown development.

Overall, the comprehensive plans suggest that planners view preservation as a key asset that underpins community character, architectural heritage, and sense of place. While demolition, particularly of over-supplied and vacant housing, has played a prominent role in shrinking cities recently, none of the cities emphasize demolition within their comprehensive plans. Thus, the analysis suggests that, despite recent practice, preservation remains a more palatable strategy than widespread demolition. Finally, the analysis highlights fundamental questions about who should be responsible for neighborhood preservation shedding light on the complexity of this task for community-based organizations, which have limited financial means and operate within a complex political system.

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Key Words: comprehensive plans, shrinking cities, historic preservation

RELIGIOUS AND ETHNIC SEGREGATION PATTERNS IN SYDNEY, AUSTRALIA
Abstract ID: 371
Individual Paper Submission

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As immigration to the U.S., Canada, Western Europe, and Australia renders metropolitan areas in these regions ever more diverse, scholars have begun to turn their attention to religious identity as a measure of diversity with practical and theoretical importance to urban planning. For practicing planners religious identity has played a role in understanding local discourses on immigration, concerns over land use decisions (e.g., the siting of religious institutions like mosques and temples), and a deeper understanding of engagement and outreach strategies in planning processes (Gale, 2008; Bugg, 2013). As a part of the larger social science canon on spatial segregation, scholars have also considered the relationship between religious identity and the formation of ethnic enclaves and ghettos (Brimicombe, 2007; Gale, 2013). However, measuring the degree of spatial segregation by religious identity has proven elusive in most contexts due to data limitations.

This article focuses on religious identity as a potential explanatory factor for observed spatial segregation patterns. In doing so it responds to the following research question: What is the relationship between religious identity and the degree of spatial segregation for residents of a metropolitan area? To answer this research question I use data from the 2011 Australian Census and a typology that quantifies the degree to which multiple religious or ethnic groups share neighborhood space in the Sydney metropolitan area of New South Wales, Australia (Brimicombe, 2007). As one of the very few countries that collects religious identity data for its residents and a major receiving context for immigrants in recent decades, Australia is an appropriate site for this research. I analyze data at the SA1 level, a small spatial unit used by the Australian Census that typically consists of about 400 people. Such a small level of aggregation provides a nuanced sense of patterns of "micro-segregation" that might be present in Sydney neighborhoods. In contrast to popular measures of spatial segregation that only compare the spatial patterns of two groups, such as the dissimilarity index, the typology that I use is able to distinguish between neighborhoods dominated by a single religious group and neighborhoods where multiple religious groups share space.

Preliminary results indicate that religious enclaves, defined by the predominance of a single non-Christian religion, are exceptions, not the rule in Sydney. While there are substantial concentrations of Muslims, Hindus and Buddhists clustered in the Western and Southern suburbs of Sydney, the neighborhoods in these suburbs are most typically characterized by a mix of religious identities, where no one religious identity dominates. On the occasions when a non-Christian religion did dominate a neighborhood, the residential composition was often multi-ethnic. Rather than neighborhoods defined by a religion or ethnicity, the neighborhoods in these suburbs are perhaps best characterized as immigrant neighborhoods. The availability of affordable housing and economic opportunities that are attractive to recently arrived immigrants may explain the observed settlement patterns in the Western and Southern Sydney suburbs, though religious discrimination in the rental housing market may also play an important role (MacDonald et al., 2016).

The preliminary findings from this research point toward structural factors such as economic opportunities and affordable housing as having influence on immigrant settlement patterns, creating multi-religious, multi-ethnic neighborhoods as a result. Practically, this suggests that planners should assume multiple religious and ethnic groups in immigrant neighborhoods to help inform the creation of engagement and outreach strategies for planning processes in these locations. Further, planners should examine and respond to challenges in the employment and housing markets as they seek to understand immigrant settlement patterns and assist immigrant integration.

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Key Words: religion, segregation, ethnicity

BRIDGES DON'T MAKE THEMSELVES: USING COMMUNITY-BASED THEATER TO RESHAPE RELATIONSHIPS RETHINKING THE IDEA OF ABUNDANCE IN ABCD
Abstract ID: 380

Individual Paper Submission

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Community-based theater (CBT) has a variety of manifestations, and the plurality with which these manifestations are occurring is increasing. As such, the diversity and complexity derived from these socio-cultural sites of public engagement requires further understanding. This article is based upon a multi-case study of two community-based theaters; one in Middle Appalachia (Appalachian Theater), and the other on the Gulf Coast of Florida (Sitting in the Shade Together Theater). Together these sites of performative expression are acting as social interventions for differing reasons within their respective contexts. The examination of these endeavors was an intensive effort to understand more fully the work required to catalyze social relationships as well as activate new forms of interpersonal being within socio-cultural domains. Meaning, how can 'abundance,' as part of the theoretical frameworks of asset-based community development, be activated and implemented through CBT? The purpose of which, was in part, to ground the conception of 'abundance' (Block, & McKnight, 2011), and to also further our current understandings of socially derived asset-based community development as implemented through these two community-based theaters.

 Through the use of constructivist embodiment and semi-structured interviews it became clear that the work of theater making within each community was intentionally driven. The personalized narratives that are actively created, and performed, aim to shift the manner in which local citizens experience themselves with each other. These cultivated lived experiences change awareness of participants from stranger, to acquaintance, to neighbor, all in an endeavor to recalibrate the lived experience of 'community.' Meaning, Appalachian Theater endeavors engage citizens through a performative relationality that simultaneously honored past abuses caused by oppression, but to also cultivate social relationships that activated new forms of being between strangers. The point being for such newly formed relationships was to assist in the creation of new opportunities where there previously was none for self/collective expression, connection, empowerment, and social change. Further, Sitting in the Shade Together Theater purposefully uses CBT to alter cultural landscapes through their own form of performative relationality for the empowerment of vulnerable and oppressed populations of color in a color divided county. Each of these cases are situated in the rural South where structural race/class inequities are entrenched within low resource contexts.

The space of the theaters, as a material technical function, served as a pallet for creative imagining to bring stories to life through shared/divergent interpretations of the lifeworlds of the performed stories. The role of the theater as organization in each case was to facilitate this process by supporting active agency between participants to sculpt, craft, practice, and ultimately perform a story that local audiences could connect with as an imaginary conjuring (a conjuring that is not detached from local life/society). The performances acted and participated in by the author in both cases were complex augmentations of personal boundaries between participants and audiences, but as well as the boundaries between local life and the narratives of the performances. Acting as sites of cultural renewal and change (Barad, 2003), the drama of the performances narratively created a deeper social ontological heterogeneity to serve dialogic functions assisting in the creation of understandings between people (Gumbrecht, 2011). The broken open spaces within the theaters served as an opportunity for social relationality/collaboration/dialogue beyond the confines of the theaters. In other words, strangers were now in conversation with each other. This complex set of mechanisms deepened relationships between citizens in both counties; Appalachian Theater deepened relationships between people and non-profits to aid in survival and renewal, and; Sitting in the Shade Together Theater deepened relationships between people to millimetrically – but nevertheless crucially – adjust face-to-face race and class relationships.

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Key Words: Social Learning, Interdependency, Relationality, Performativity, Community Change

DRAWING YOUR NEIGHBORHOOD: COGNITIVE MAPPING IN MOMENTS OF CRISIS AND CHANGE
Abstract ID: 381
Individual Paper Submission

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Over the last decade, the drastic amount of crisis and change in Detroit, including the city's re-emergence from the nation's largest municipal bankruptcy, has led us to consider the following: how do residents of various identities, including race and ethnicity, housing tenure status, age, and gender, define their neighborhoods? In a city with loosely defined and varied notions of neighborhoods, including residents who claim that the city lacks neighborhoods altogether, competing perceptions of neighborhood as a unit of residential space have implications about the future of equitable and just urban planning, particularly related to issues of combating gentrification and the spatial distribution of schools and other community institutions, resources, and amenities. This study determines how Detroit residents conceptualize neighborhood boundaries and landmarks amidst drastic social and economic change.

During the course of our research, we conducted 46 semi-structured interviews that included asking residents to describe where they live, including their reactions to any changes they have observed, and a cognitive mapping exercise to examine how residents perceived neighborhood boundaries and landmarks. Our study area was located in an expansive radius around an administratively-defined neighborhood in Detroit that has experienced dramatic change including multiple school closings and gentrification in the last few years. We found that many long-time and African American residents did not associate their residential area with defined boundaries and used very general and broad terms that refer to expansive portions of the city. Additionally, residents had greatly varied perceptions of whether their residential area had sufficient resources and amenities that also often correlated with race and tenure. Lastly, homeowners across racial backgrounds affiliated with block clubs and homeowners' associations as well as newer white renters living in recent construction and rehabilitated real estate developments have strongly defined notions of neighborhood boundaries and names that can both create a sense of community cohesion and exclusion.[1]

Ultimately, our study brings into question the utility of planners using a singular and stagnant definition of neighborhood as a unit of analysis. Given discrepancies in whether a neighborhood has necessarily resources and amenities, the implications of planning based on neighborhood boundaries has tangible implications that privilege certain identities over others and affect livelihood particularly as cities experience crisis and change. This paper expands upon Jackelyn Hwang's study (2016) of conflicting and shifting understandings of neighborhood boundaries in a gentrifying area of central Philadelphia by using similar cognitive mapping methodologies.[2] While we corroborated Hwang's findings of drastically different notions of neighborhood across demographics, we also found that competing notions of residential space in Detroit brought into question the concept of the neighborhood altogether. Recent work, such as Emily Talen's Neighborhood (2019) and George Galster's Making Our Neighborhoods, Making Our Selves (2019) anthologize historical and contemporary concepts of the neighborhood and propose recommendations for the future of the neighborhood.[3] Our study expands on these works by

both interrogating the concept of the neighborhood and highlighting the flaws of operating within a generalized and abstracted definition of neighborhood perilously accepted as neutral.

[1] Martin, Deborah G. "'Place-Framing' as Place-Making: Constituting a Neighborhood for Organizing and Activism." Annals of the Association of American Geographers 93, no. 3 (September 1, 2003): 730–50. https://doi.org/10.1111/1467-8306.9303011.

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Key Words: Neighborhood, Boundaries, Cognitive, Gentrification, Mapping

CLEVELAND HEIGHTS: FROM SEGREGATION TO INTEGRATION TO DIVERSITY
Abstract ID: 409
Individual Paper Submission

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Cleveland Heights, Ohio is a bedroom suburb of Cleveland. Booming in the 1920s and advancing from a rural village to a streetcar suburb, Cleveland Heights became the home of a predominantly White, Protestant and Professional class of residents. Then, in the 1960s and 1970s, like the adjacent suburbs of East Cleveland and Shaker Heights, Cleveland Heights saw the arrival of African-Americans moving from Cleveland. Initially, there were some violent incidents protesting their arrival. However, many residents rallied in support of racial integration.

In the 1970s, residents organized to fight realtors engaged in racial steering and blockbusting. The Heights Community Congress formed to organize neighborhoods to welcome racial integration of housing. In 1976, the city officially adopted pro-integration policies, making it a model of suburban integration along with a few other suburbs like Shaker Heights and Oak Park, Illinois. A non-profit was established to promote the choice of racially mixed neighborhoods by new prospective White homebuyers.

In subsequent years, the African-American population grew rapidly. This led to controversy about the composition of the public school system, including the racial identity of the faculty. At the same time, the population of the city declined with some of more affluent residents leaving for the exurbs and many families, including Orthodox Jews, choosing to send their children to private rather than the public schools.

In the 21st century, race-related issues around housing and education receded. Instead, Cleveland Heights

joined with other inner ring suburbs to attempt to compete with newer suburbs for residents and business. Cleveland Heights saw its once prosperous Severance Mall (also the site of City Hall) fall into decline, with its foreclosure and auction as major anchors departed. Some of its commercial strips have also experienced decline. The city also experienced a significant increase in housing foreclosures and abandonment.

By 2017, the population had declined to 44,373 (from @ 60,000 in 1960). The demographics were: White (49.20%), African-American (41.84%), Asian (5.24%), two or more races (2.82%). In contrast to the general population profile, 71% of the students enrolled in the public school system (shared with neighboring University Heights) were African-American versus 17% White (and 4% Hispanic, 2% Asian, and 5% multi-racial). With one on the highest property tax rates in the state of Ohio and very poor ratings of overall student academic performance in the state of Ohio rankings, the city and school system have found it increasingly difficult to win financial support for the schools and with a declining population several school buildings have been closed. Despite these problems, in 2016 the voters approved an increase in the city income tax. Another troubling sign has been the increase in poverty households: 18.66% (11.58% White, 25.70% African-American). In 2020, the public schools are once again seeking voter support for a property tax increase in the face of drastic prospective budget cuts caused by state policy on funding private school vouchers.

In 2020, Cleveland Heights describes itself as a "diverse" community, not as a racially integrated city. It no longer has pro-integrative housing programs. Throughout the city, despite its overall racial profile, most neighborhoods are either predominantly White or African-American. Politically, only one of its 7-member City Council has been African-American, although its representatives in the U.S. Congress, Ohio General Assembly, and Cuyahoga County Council are all African-Americans.

So, Cleveland Heights presents the unusual case of a bi-racial bedroom suburb struggling to survive despite its economic and social problems. Its present status and alternative future prospects will be analyzed.

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Key Words: Integration (racial), Inner-ring suburb, Diversity (population), Decline, Demographics

OLDER ADULT VULNERABILITY IN AUSTRALIA'S "BLACK SUMMER"
Abstract ID: 416
Individual Paper Submission

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Growing old in a suburban environment can be difficult. As we age, we are increasingly likely to experience some kind of physical or cognitive impairment. Simultaneously, the likelihood that we do not, or cannot, drive an automobile grows. As a result, our life spaces shrink. Without reliable transit, easy access to services, family and friends, older adults in suburban neighbourhoods may face

loneliness, depression, and other health risks. These risks are amplified in times of crisis. From June 2019 until March 2020 bushfires raged across one of the most suburban, and quickly aging, countries in the world - Australia. Over two thirds of Australians live in suburban environments and the Australian "baby boom" generation is, proportionally, one of the largest in the world. Therefore, when the bushfires resulted in air quality levels more than twenty-three times higher than the "hazardous" level in some of Australia's suburban communities, there was serious cause for concern. Across the world, policymakers must consider whether residents will be able to maintain a high level of wellbeing while aging-in-place in suburban communities. In Australia and other regions with climate-related risks, the question must be more fundamental: is aging-in-place even a viable option for the majority of older adults? As the impacts of climate change continue to grow in frequency and severity, planners and policymakers must reflect on and plan for a trinity of risk: individual, (built) environmental, and climate.

A two-part approach is taken to assess the risk, opportunities, and challenges of aging in suburban Australian communities. First, the paper presents results from a quantitative neighbourhood-by-neighbourhood analysis of Australia's 27 metropolitan regions to determine the trinity of risk that many older adults live with – the potential of being disadvantaged by social determinants of health (being older, living alone, on low income), by living in a non-supportive built environment, and by climate-related disasters (hazardous air quality from bushfires). Secondly, the opportunities and challenges of suburban aging-in-place are assessed through the analysis of semi-structured interviews with fifteen local, state, and federal policymakers and stakeholders. The results show that the majority of vulnerable older Australians are living in unsupportive built environments that were impacted by air quality issues due to the bushfires. The geography of vulnerability is presented and the spatial variance within the 27 regions analyzed highlights the need for targeted age-friendly policy. Specifically, the policymakers and stakeholders highlight the need for more, and better, public transportation and additional social infrastructure to support the physical and social connectivity of older adults.

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Key Words: Aging, Age-friendly cities, Bushfires

DOES PLACE MATTER? REFUGEE OUTCOMES IN A SHRINKING CITY
Abstract ID: 447
Individual Paper Submission

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Nearly three million refugees have permanently resettled in the United States since 1980 (Krogstad and Radford 2017). The federal Office of Refugee Resettlement determines where refugees will be resettled based on local resettlement agency capacity and family ties. Historically, refugees were resettled in large cities such as Chicago and Los Angeles, but in the past decade there has been an effort to resettle refugees in historically shrinking cities, such as Buffalo, New York. Opportunities and constraints that may affect the ability of refugees to thrive in their new community are not considered in placement (Calamur 2019),

and factors such as prior job and educational experience are not taken into account. Yet multiple variables impact resettlement outcomes: state and local level policy as well as the local political climate towards refugees, institutions that exist, social capital, and their prior migration experience (Colic-Peisker and Walker 2003; Pittaway, Bartolomei, and Doney 2016; Allen 2009). Still, it is unclear whether different types of cities impact resettlement experiences.

Buffalo, once one of the most populous cities in the country, experienced a huge population loss: In 1950 over 580,000 people called Buffalo home, but by 2015 only 260,000 people did (U.S. Census Bureau, 2015). In recent years, Buffalo's population has stabilized and even increased somewhat, in part due to the influx of refugees. Between 2002 and 2019, 16,346 refugees were resettled to Buffalo (Department of State 2020). While refugees face similar challenges related to housing, transportation, and lack of English-language skills in both large and small cities (Miraftab 2000; Judelsohn et al. 2017), smaller cities may come with additional opportunities and challenges.

I explore the experiences of refugees from Myanmar in Buffalo as a lens to understand how shrinking cities may pose particular opportunities and challenges in resettlement. Based on open-ended interviews (n=15) with refugees originating from Myanmar, local government officials, and representatives from civil society groups, results suggest that neighborhood environments - including low-quality housing and ample vacant land - pose opportunities for newly arrived refugees. Additionally, while the local government is supportive of the incoming refugee population, they do not actively address the needs of this population, placing most of the burden on civil society groups. Implications include an understanding of what challenges and opportunities exist for refugees in a shrinking city, and how local governments can better support their refugee residents.

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Key Words: Refugees, Local government, Multicultural planning, Small cities, Buffalo

WHERE WOULD YOU RELOCATE IN LATER TIME AND WHY? EVIDENCE FROM 2017 AMERICAN HOUSING SURVEY
Abstract ID: 458
Individual Paper Submission

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With a rapidly aging population, older people (65 years and older) are expected to outnumber those under 18 for the first time in US history in 2035 based on a projection by the US Census Bureau. Given the

dominance of older adults in the future decades, it is critical to understand their residential trajectories and to inform planning policies to better fit their residential needs.

Most existing planning policies for the aging population in the U.S. focus on "aging in place" that aims to encourage older adults to live in their original homes and communities. Aging in place is not only more affordable than other alternatives, such as nursing homes (Molinsky, Herbert, and Forsyth, 2019), but is also preferred by many seniors as it helps them to maintain social ties in their original communities (HUD, 2017).

However, recent studies show that the residential patterns of older adults are very complex and increasingly diverse (Kwon et al., 2015). Older adults not only remain in their original homes and neighborhoods, they may also relocate to new neighborhoods or to institutional care facilities (HUD, 2017). At least three reasons could explain why relocation is a good option for some older adults than "aging in place": first, many features in existing housing stock and communities may fail to accommodate the needs of seniors in terms of accessibility, such as the lack of wheelchair-friendly entry and extra-wide doorways (Chan & Ellen, 2017). Second, many communities are also inadequate in necessary aging-friendly infrastructures or transit options that allow older adults to access health services and other community amenities (HUD, 2017). Finally, affordability is another challenge for many older adults given their declining income and increasing needs for health expenditure and the necessary accessibility modification at home (HUD, 2017).

Given these challenges, many older adults choose to relocate to shop for the housing or communities that could better serve their needs (Chan & Ellen, 2017; HUD, 2017). However, existing studies offer limited knowledge on the relocation decisions of older adults in the U.S.

To fill this gap, this study uses the sample of households in which at least one person is above 60 years old in 2017 American Housing Survey to topologize the residential patterns among older adults in the U.S. and attempt to explain the underlying reasons why older adults make different residential decisions.

Using cluster analysis, we identify three major types of elder movers beyond 60 years old. The first mover group is "the winner in all aspects": they move in short distance for better and aging-friendly neighborhood with good public transit access. The second mover group is "loser in several aspects": they move for long distance but end up in neighborhoods with worse living quality and public transit access. Their only gain is that the destination community has more older adults. The last mover group is at intermediate level that they move in short distance to a non-aging neighborhood with similar quality of living, but worse public transit access. We then use multinomial logistic regression to explain the underlying factors that shape their diverse residential patterns. Our results help to inform urban planners of the various residential patterns of older adults in the U.S. based on their socio-demographic characteristics, and the possible planning solutions to better serve the heterogeneous housing needs of older adults.

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EXPERIENCES OF THE RELOCATED SMALL INDUSTRIAL BUSINESSES: WHAT WE CAN LEARN FROM CHEONGGYE STREAM MERCHANTS?
Abstract ID: 464
Individual Paper Submission

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Cities have sought to improve physical urban environment in order to harness competitive advantages for economic growth and global investment. Urban redevelopment or regeneration has long been a key response to economic restructuring and improving residents' quality of life. Urban governments(?) replace low-value businesses by higher value or more competitive businesses, or geographically visualize places to make them more desirable and attractive. While there is euphoria of positive effects of regeneration efforts on cities, however, the inevitable displacement of the existing community has also long been an issue of concern (Ferm, 2016; Raco and Tunney, 2010).

Public sector-led initiatives on transforming and revitalizing industrial sites have brought concerns about displacements of existing small businesses that geographically concentrate as clusters. Because business advantages at current location are almost impossible to replicate elsewhere (Curran, 2007), it has been argued that any disruption in spatial concentration or forced relocation results in negative consequence to business competitiveness (Curran, 2007; Kim and Kim, 2015; Park, 1996; Park and Kwone, 2004). In existing literatures dealing with agglomeration theory, modern industrial district theory, and inter-firm networks, interdependencies and interpersonal relations are considered critical factors for the formation and functioning of industrial clusters (Granovetter 1985; Harrison, 1992; Park, 1996; Park and Kwone, 2004).

Past studies have often taken an aggregate approach of bracketing the experiences as "bad", while the experiences of displacement have focused on the threats that it poses to the ecosystem of small industrial businesses and to the unique characteristics of the place (Ferm, 2016; Kim and Kim, 2015; Raco and Tunney, 2010). Although a few have acknowledged different groups of firms might respond differently in coping and adapting to the relocated area (xx), [L1] many empirical studies have tended to examine impacts of immediate post-relocation and merchants' satisfaction. This study aims to fill this gap in current literature by examining long-term experiences of those firms which have been forced to relocate in the process of urban regeneration. The underlying argument [L2] is that because inter-firm interdependencies and relational network may differ across firms, relocation may result in variable business trajectories.

The Cheonggye Stream Restoration Project (CSRP) in Seoul, South Korea is a public sector-led initiative, internationally acclaimed for its success in urban regeneration (Ryu and Kwon, 2016; Yoon, 2018). While the project entailed removal of the elevated highway and concretes that covered the 5.8 km historic stream, it brought about oppositions from industrial businesses that clustered around the area. They had feared profit loss from traffic congestion and gentrification that would result from the project (Lim et al., 2013). In dealing with such oppositions, the local government has provided a space located at 21 km southeast from the Cheonggye area for firms to relocate. Today, almost 10 years have passed since 6,100 firms have moved to the new place, and it has been reported that only some hundreds remain and continue business operations.

This study examines the long-term experience of small industrial firms which have relocated in the process of CSRP implementation. By conducting in-depth interviews with relocated firms and property managers of the new place, the study intends to explore the following. One, the types of business that continue to operate at the relocated area. Two, the implication of relocation on the firm's business competitiveness. Three, the transitional experience of interdependencies and interpersonal relations with other firms after relocation. Snowballing sampling is employed to select interviewees. More specifically,

the authors have visited the site and randomly selected a firm to ask for an interview. Then, the authors have requested the first participant to recommend potential participants who can answer our questions.

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Key Words: displacement, relocated area, business success/failure, satisfaction

ALTERNATE PERSPECTIVES ON PLACE-BASED POVERTY REDUCTION: RETHINKING IMPLEMENTATION AND EVALUATION FRAMEWORKS
Abstract ID: 504
Individual Paper Submission

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The design and implementation of third-sector managed place-based poverty reduction programs has emerged in response to the state's absence in effectively mitigating the negative impacts of neighbourhood effects. This research examines the central research question of how to evaluate a place-based poverty reduction program across different geographic sites and scales through a case study of a specific third-sector designed and implemented place-based poverty reduction program in Canada. Specifically, this research explores this question through the lens(es) of urban youth participants in the poverty reduction program, Pathways to Education. Connected to this broad research question, I explore other inter-connected questions including:

-What are effective place-based poverty reduction implementation and evaluation frameworks, especially those that target youth?

-Do neighbourhoods matter to children and youth and if so, in what ways?

-How might ethical and methodological tensions be resolved to hear youth perspectives on neighbourhoods, youth, evaluation and poverty more clearly?

To answer this question, I craft a theoretical framework linking the concept of the right to the city as presented by Lefebvre (1996) to Uri Bronfenbrenner's (1977, 1979, 1995) understanding of the micro, macro, and meso systems in which children and youth operate. I then present a literature review that unpacks and analyzes the current dominant literature on neighbourhood effects, children and youth and evaluation. This research proposes alternate narratives on the themes of neighbourhood, evaluation, poverty and, ultimately, success, by challenging dominant urban planning constructs as to what it means to be both youth and poor. Utilizing a community-based participatory research approach, this research presents an evaluation framework that might be considered in examining place-based approaches to poverty reduction. It presents a counter-narrative to the dominant frame that all neighbourhoods that are poor require interventions and, ultimately, saving. It examines some of the associated ethical dilemmas of how best to mitigate neighbourhood effects, especially in some of Canada's poorest neighbourhoods where educational and health outcomes remain lower than middle-class or more affluent neighbourhoods. I present findings from data collected through interviews with national experts in the areas of evaluation, children and youth and neighbourhoods as well as data collected through focus groups and surveys with program staff, and through traditional focus groups and arts-based methods with youth. This research presents a critical analysis to place-based poverty-reduction programs and proposes

a framework to incorporate diverse stakeholder's perspectives, specifically marginalized youth voice(s), into place-based program planning and evaluation. It lastly provides concrete recommendations for planning, implementing and evaluating place-based policies and programs, especially those that target lower-income neighbourhoods.

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Key Words: neighbourhoods, youth, poverty

THE MISSING INSTITUTIONAL LINKAGES IN CREATING SLUM INSECURITY: EXCLUSION, POLICING, AND SLUM UPGRADING IN INDIA
Abstract ID: 519
Individual Paper Submission

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This paper seeks to address the gap in current knowledge about institutional linkages partly responsible for both the formation of neighborhood insecurity in slums and exclusion originating from the bias towards slums and the unclearness of policies generated by administrative agencies in India. Bihar is one of the underdeveloped states in India. Its capital, Patna, was selected as a model city of the Smart Cities Mission. As per the guidelines, model cities are required to provide citizens with "core infrastructure," including basic public facilities, affordable housing, good governance, and public security. However, due to the incomplete institutional design of city redevelopment at the national level, the local goals and execution of urban governance have led to uncertainties in policing and community governance at the neighborhood level.

Patna, Bihar is one of the dense cities in India with a very large presence of informal settlements. Regular conflicts in informal settlements are quite common. However, at present, it is unknown whether neighborhood conflicts in slums could escalate into violence or diminish, and how slum dwellers' perception of neighborhood insecurity has formed. In order to fill this knowledge gap, this paper utilized multistage stratified random sampling to select 224 low-income families in sixteen slums in Patna for household surveys between 2016 and 2017. Based on IV-probit models and treatment effect models, this paper finds that government actions toward slums—including eviction threats, relocation attempts, and regularizations—are associated with the "identity of living in slums" and that the informality in slum housing and land tenure influenced police patrolling and gave rise to police harassment in the slums. This transmission mechanism from top to bottom through policing is the primary reason for slum dwellers' violent resolutions toward neighborhood conflicts and their perception of insecurity at the neighborhood level. Through individual interviews and focus group discussions, this paper reveals the role of community and the importance of slum dwellers' perception of slum upgrading policies. It finds that slum dwellers' opinions about slum upgrading policies and their perceptions of their roles in urban planning and community design are essential. These results reveal that when it comes to more inclusive slum upgrading and more effective redevelopment, the key is to mitigate distrust between the local government

and slum dwellers and maintain neighborhood security.

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Key Words: Community governance, informality, institutional defects, countering-hegemony, Smart City

RE-EXAMINING THE ACCULTURATION ISSUE AND COMMUNITY DEVELOPMENT OF RELOCATED FARMERS: AN EMPIRICAL EVIDENCE OF SUZHOU, CHINA
Abstract ID: 532
Individual Paper Submission

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It is widely accepted that one of the challenges facing China's rapid urbanization is land urbanization is faster than population urbanization. During the process of land urbanization, there are a large number of rural areas have been converted into urban land use for urban construction, which has resulted in a large number of landless farmers. Thus, the government tried to solve the problem of resettlement of land-lost farmers by building concentrated residential communities (CRC) in rural areas, and this housing policy has become the key spatial strategy for urban-rural integration development. However, the various number of farmers lived in the CRC facing many new situations and dilemmas, and insufficient resettlement policies and spatial planning caused many problems of economic, social, and psychological. Specifically, some landless farmers are facing the change of identity from rural farmers to urban citizens. Furthermore, the transfer of living space from scattered village fields to new residential communities, and the lifestyle change from a self-sufficient rural life to a comprehensive and diversified urban life. Both local government and scholars also suspected the mode of large-scale centralized resettlement is appropriated. From the perspective of cultural anthropology, the process of passive urbanization of farmers caused by such land expropriation is essentially the process of farmers as urban migrants adapting to the new environment. In this sense, this research would employ a case of Suzhou, since there are 1.1 million farmers in Suzhou are transformed into citizens in resettlement policies. The acculturation occurs when a newcomer adopts the cultural behaviors common in the host country, which may lead to changes in diet, physical activity level, and environmental exposures. The motivation of this study is to examine the traditional cultural distance hypothesis, that is, increasing cultural distance between urban and rural makes it more difficult for farmers to achieve local integration, in terms of the living styles, lifestyles, production style, and the traditional unidimensional model, also known as liner or bi-polar model indicates that the increasing adoption of one culture leads to the reduction of the other. Thus, we did a survey for 26 relocated farmers' communities with 1200 samples, and we would construct a multidimensional (in terms of components of acculturation such as practices, values, and identifications) and bicultural acculturation framework to understand adaptation by these relocated famers. Furthermore, we also interested how the built environment features (e.g. green space, or facilities) in community could mediate the negative effects of concentrated residential communities on the process of cultural adaptation. The expected results have very strong policy implications, for instance, whether these housing policies made new barriers for farmers' life. whether we need to re-think the size of communities and how to implement a housing mix strategy for farmer relocation. In the planning process, we must pay attention to

not only the construction of material elements, but also the construction of non-material elements. To improve farmers' employment rate and sustainable livelihood capabilities, expand social networks between farmers and citizens, strengthen farmers' community participation, and guide farmers to improve their lifestyles, thereby increasing their sense of identity and belonging to new communities.

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Key Words: Resettlement policy, acculturation, issues of Resettlement Process, community planning, Suzhou

THE RELATIONSHIP BETWEEN SPATIAL INCLUSION AND SOCIAL INCLUSION: EVIDENCE FROM SOUTH KOREAN CITIES AND REGIONS
Abstract ID: 567
Individual Paper Submission

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Modern cities are increasingly diverse, with people from different socio-economic and cultural backgrounds coexisting. However, social integration among the people in the city is hardly achieved, and social exclusion is a serious social problem along with economic inequality and polarization. In terms of urban space, problems such as spatial segregation, gated communities, and lack of affordable housing have excluded the socially underprivileged, such as the poor, the disabled, and racial and ethnic minorities, from various socio-economic opportunities. There has been some discussion about the positive/negative socio-economic effects on the excluded people of spatial factors such as spatial segregation and transport accessibility (Galster and Killen, 1995; Musterd, 2005; Bolt et al, 1998; Kenyon et al., 2002). Housing affordability is also important to the well-being of the underprivileged and it mediates the generation of segregation and the effect of transport accessibility. We conceptualize 'spatial inclusion' as the spatial dimension of inclusion that promotes the availability of space and mobility for the underprivileged, and physical proximity of different social groups. One may expect that spatial inclusion leads to social inclusion, though the relationship between the two has yet to be empirically established.

The purpose of this study is to identify the key components of spatial inclusion that contribute to improving social inclusion by examining the relationship between inclusive spatial arrangements and social inclusion in South Korean cities and regions. For this purpose, I analyze the Korean Community Health Survey data, a micro-dataset on personal health and social life, along with other data released to the public, such as the Census data. In this study, social inclusion is composed of two dimensions, interdependence and participation, following Gerometta et al. (2005). And those two dimensions are in turn measured by the degree of social network of the socially underprivileged such as the poor, the disabled, the youth, and women and the degree of their participation in social activities. On the other hand, the components of spatial inclusion include space availability for all, mobility for all, and physical proximity between different social groups. The first component is measured as the ratio of 20th percentile housing price to 20th percentile income and the fraction of public housing stock; the second is measured by access to public transportation; and the third is measured by an index of dissimilarity for the poor and ethnic minorities. The relationship between spatial inclusion and social inclusion is then analyzed by

constructing a multi-level model that regress the degree of social participation and network on both personal characteristics and regional characteristics, including the spatial inclusion components.

The expected results are as follows: Overall, increased spatial inclusion leads to increased density of social networks and increased participation in social activities. However, the effects of each component of spatial inclusion may be distinct or less pronounced. In addition, depending on the personal characteristics of the individual, the effects on social inclusion of the inclusive spatial arrangements may be weakened or strengthened. The findings of this study will provide important implications for drawing up the tasks of urban planning to promote social inclusion in cities and regions.

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Key Words: inclusive cities, spatial inclusion, social inclusion, social network, participation

HOW DOES SCHOOL CHOICE IMPACT COMMUNITY SOCIAL SUSTAINABILITY?
Abstract ID: 581
Individual Paper Submission

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Communities across the United States have adopted school choice programs which provide educational alternatives beyond the public neighborhood school. These alternatives are varied and ostensibly form a market-based system where schools compete for students, enhancing the quality of their services. While the educational merits of these programs are hotly debated, there have been few investigations into the impacts of such options (as distinct from school closures) on the social sustainability of surrounding neighborhoods. The planning literature has addressed schools as a destination in an urban design and/or transportation mode choice context. Good (2019) and others have considered the impact of school closures on community development and revitalization. Schools as a location for community gardens, and as a contributor to social capital more generally, has also been discussed in the literature. However, there has been little investigation into the question of how school choice systems affect measures of community social sustainability.

Social sustainability as an element of the broader sustainable development concept is considered by many to be the most nebulous of the three sustainability pillars. Even so, Shirazi and Keivani's (2017) meta-analysis of the social sustainability literature highlights a coalescing around seven defining principles among which are "social networking and interaction" and "livelihood and sense of place." These principles form the basis in this work for measuring social connectivity between schools and their surrounding neighborhood. Schools have held key positions in community engagement through athletics and arts performances, supporting a sense of place and providing opportunities for broad community interactions. These enhancements to social sustainability may provide lasting impacts with respect to school fundraising and levy support, as well as increased social capital supporting student achievement (Warren 2017). Additionally, heightened engagement and identity may increase broader sustainability

efforts related to, for example, school-based community gardens benefiting the surrounding neighborhood.

This study uses the city of Columbus and its School District (CCS), the largest school district in the state of Ohio, as the focus of inquiry. Columbus and CCS provide a somewhat unique opportunity to explore a variety of school choice alternatives. While traditional neighborhood schools remain in the CCS repertoire, the district also includes lottery admission (up to 100% of school enrollment) in traditional, alternative, and specialty schools. Lottery based schools, therefore, may have few if any students from the immediate surrounding community. Moreover, the state of Ohio has school choice where taxpayer-funded assistance (scholarship, voucher) means district students can attend private schools. There are twenty public and nine private high schools within the CCS district boundary.

This paper represents the first phase of a two-phase effort exploring the relationship of high schools within the CCS district boundary with their associated neighborhood. In this phase, site visit and survey data are used to measure the community's identity and connections with the school, as well as the school's identity and connections with the surrounding community. Using an existing GIS-based school location map, all restaurant and retail businesses within a 2-mile radius of the 29 high schools are mapped. On-site visits to these establishments provide the number and type of school-based paraphernalia (e.g., sports team photos/schedules, school pennants, school event fliers) present. Next, a survey of business owners gives insight regarding the role of the school in the community's identity and social interactions. Finally, a similar survey provided to the 29 high school principals assesses their sense of the role the school plays in the surrounding community. Results of this work provide insight regarding how school choice influences social sustainability principals related to sense of place and social interactions, and suggest fundamental issues of communication and trust provide policy directions moving forward.

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Key Words: sustainable development, neighborhood schools, school choice, community identity, social interactions

EVALUATING VACANCY DYNAMICS IN POPULATING AND DEPOPULATING METROPOLITAN STATISTICAL AREAS
Abstract ID: 624
Individual Paper Submission

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Despite projected increases in global urban populations, many cities worldwide still suffer from severe depopulation (or shrinkage). More than 35 percent of US cities with at least 10,000 residents are

considered shrinking cities. While the U.S. Rustbelt is typically considered the area comprising most US shrinking cities, massively depopulating cities are located broadly in the US and can also include areas in California and the Sunbelt (Hartt, M., 2019). Because of the reduction of residents in these areas, depopulating cities are also characterized by increases in vacant land and abandonment. Negative externalities from these conditions can include a growing crime rate (Branas et al., 2018) and reductions in neighborhood property values (Han 2014). The relationship between depopulation and vacancy has not been well studied at the macro-scale, with most studies examining only singular cities or neighborhoods. The spatial dynamics of vacant land are highly impacted by growth at the national and local scales and hare highly related to regional population migrations (Newman, Bowman, Jung Lee, & Kim, 2016).

To identify the spatial inequalities in the distribution of vacant urban land, this research examines vacant address changes at the Metropolitan Statistical Area (MSA) scale, assessing urban and suburban alterations in vacant land and linking these changes to different socioeconomic conditions. To achieve this, we evaluate 1) vacant address amounts in both populating and depopulating US MSAs from 2008 to 2018, and 2) local scaled of socioeconomic conditions in massively depopulating neighborhoods characterized by excessive vacant addresses. The vacancy was measured at the census tract scales using the Department of Housing and Urban Development's vacant address data. These data derive from the United States Postal Service information, which designates addresses as vacant once their mail has not been picked up for 90 days. The data is measured quarterly from 2006 to current. At the local scale, we compare vacancy dynamics across a growing MSA and a shrinking MSA, using Detroit, MI, and Cleveland, OH, as case examples. Detroit lost nearly 30 percent of its population from 1990 to 2010, while its MSA gained grew by more than 1 percent during the same time frame. However, Cleveland's MSA lost more than 1 percent of its people, while the city itself lost 20 percent of its population during the same period.

Results show that, when using US census data from 1990 to 2010, thirteen out of sixty-nine cities with a population of over 250,000 are shrinking. Simultaneously, eight out of thirteen of the MSAs surrounding each depopulating city are increasing in population in the same time frame. Similarly, vacancy patterns also show different and dynamic changes at the city scale compared to the MSA scale. While many shrinking cities are increasing in vacant addresses as their populations decline, their MSAs tend to be characterized by small and medium-sized cities that are growing in population and reporting the minimal amount of vacant addresses. Vacant addresses also tend to increase in lower socioeconomic neighborhoods. Our findings can be used to improve urban regeneration plans, and help identify areas suffering from spatial inequalities and vacant land issues.

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Key Words: Shrinking city, Vacant land, Socioeconomic, Metropolitan Statistical Area

THE IMPACT OF ABSENTEE-OWNED SINGLE-FAMILY HOMES ON NEIGHBORHOOD CHANGE AND SUCCESSION
Abstract ID: 753
Individual Paper Submission

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Homeownership has a myriad of benefits to individuals, families, and neighborhoods. It offers a safe haven and shelter to the occupants and owner, and helps promote a sense of belonging to their neighborhood. Therefore, vested interests of homeowners to their neighborhoods may help enhance neighborhood stability (Coulson, Hwang, & Imai, 2002, 2003).

The recession from 2007 to 2009 sent millions of homeowners into the crisis of foreclosure, either due to negative home equity, loss of employment, or other irremediable factors. Based on CoreLogic, a property database, the peak years for foreclosures were from 2010 to 2012 across the U.S. The deep discount of foreclosed homes in the market prompted investors, particularly small to medium-sized investors, and homebuyers to venture into purchasing foreclosed properties and converting them into rental or vacation housing (Immergluck, 2012). In the meanwhile, many, including foreign buyers, use real estate to diversify investment risks in financial markets. The influx of absentee-owned properties in the housing market may impact neighborhoods in various ways. Neighborhoods with a high percentage of absentee-owned properties tend to be low-income minority neighborhoods, consistent with the concentration of foreclosed properties. The housing conditions in neighborhoods with a higher homeownership rate and a lower rate of absentee-owned properties fair better than neighborhoods with a higher rate of absentee-owned properties. A high percentage of absentee-owned single-family homes also tends to have tax liens, compared with owner-occupied single-family homes (Mallach, 2014). In the meanwhile, absentee-owned properties might worsen affordable housing crisis in certain markets (Graham & Redmond, 2015).

None of the extant studies have specifically focused on how changes in absentee-owned properties impact neighborhoods. This study uses the property parcel and tax data from 2010-2018 in three Florida counties, Palm Beach, Broward, and Miami-Dade counties, to explore and answer the following questions:

1. Have absentee-owned single-family homes increased over the years? What are the characteristics of these homes?
2. What is the spatial pattern of these homes? What is the spatial pattern of percentage absentee-owned single-family homes among all housing units at the census block group level? Is there a concentration of those properties? If so, in which kinds of neighborhoods?
3. How did the change in percentage absentee-owned single-family homes among all housing units at the census block group level from 2010-2014 relates to the change in neighborhood characteristics, e.g. median household income, percentage minority households, property values, rents, homeownership rates, etc. in 2014-2018?

American Community Survey 2010-2014 and 2014-2018 five-year estimate data are used to measure neighborhood attributes and change variables. The absentee-owned properties are those with a mismatched property and mailing address, although the property status, whether it is rental, vacant, or vacation homes, is unknown. The reason to use these counties in Florida is that the state of Florida was one of the states with the highest foreclosure rates during and after the recession. Foreclosures peaked in Florida in December, 2010, and the tri-county south Florida region suffered the most from the foreclosure crisis. This region is also a prime destination for retirees and real estate investors due to its climate and close proximity to Latin American countries.

This study sheds light on the magnitude of the issue of absentee-owned single-family homes and how they might impact neighborhood change and succession. Negative impact from a large concentration of these homes may be alleviated through policy interventions such as vacancy tax, rental permits, and code enforcement, etc. However, added tax burdens might discourage the owners of these properties to rent to lower income households, due to added financial liabilities to make these houses affordable.

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Key Words: Absentee-Owned, Single-family Homes, Neighborhood Change

INSURGENT KNOWLEDGE IN PLANNING: A COMMUNITY-BASED APPROACH TO CHANGE
Abstract ID: 754
Individual Paper Submission

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Local knowledge of poor and working class people of color is systematically shut out of institutional participatory processes. In response, some residents collectivize to pursue justice and structural transformation beyond the participatory paradigm. In doing so they become insurgent planners who, among other things, revalue local knowledge that institutional planning devalues. We define the knowledge revalued through insurgent planning as insurgent knowledge.

This paper explores the character and role of insurgent knowledge in planning. We highlight a Detroit resident association's intervention in their neighborhood's revitalization that limited public funding for neighborhood development. The results cover three years of community-based participatory action research with Detroit's Charlevoix Village Association (CVA), in which insurgent knowledge changed the course of institutional planning and development. Authors of this paper include three volunteers with CVA: a planning scholar (an ethnographer and postdoctoral fellow); a grassroots organizer (a life-long working class black Detroiter); and a new resident in CVA's area (a professional neuroscientist).

Insurgent planning employs local knowledge and analyses to shift planning processes. In CVA, long-term residents' interpretation of information provided grounded meaning to technical analyses and kept experts accountable to the needs and wants of grassroots leaders. Revaluing the local knowledge of grassroots Detroiters allowed insurgents to throw a wrench in status quo planning, opening new space to pursue justice in planning. CVA's insurgent planners collectively produced an independent body of knowledge that formed the backbone for resident mobilization. The process of knowledge production was accountable to working class black residents and thus acts in service of their interests.

CVA's insurgent planning process is exemplified by its response to a redevelopment project on Field Street in Detroit, MI. In challenging the recommendations of city officials to award public funding for the Field St redevelopment, CVA's research uncovered that the developer had accumulated a large number of city code violations on their other local properties. CVA's insurgent knowledge brought forward information that even City Council was not aware of, prompting council members to call for a more thorough background check on developers that include whether they have property in good standing or in violation of city code. The revelation that this developer owed more than $50,000 in fines forced the developer to withdraw their request for funding and enter into a consent agreement with the Mayor's office to address the violations. To be effective, this knowledge had to do more than simply exist -- insurgent residents had to push the information past several gatekeepers, including the Mayor's office, the planning department, and quasi-public planning entities to make their knowledge appear within and shift the planning process.

In the neoliberal era, many cities operate under policies of austerity, impacting what official planning sees as essential and realistic. In alignment with neoliberal goals, the planning establishment devalues the expressed needs of residents in deference to the "wisdom" of market forces. City officials make a choice between listening to community voices or appeasing developers, who promise potential revenue through their real estate projects. As insurgent planners, CVA exposed the disconnect between what was important and of value to residents versus the interests of profit that swayed institutional planners.

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Key Words: Detroit, knowledge, power, insurgent planning, justice

MEASURING COMMUNITY DISASTER RESILIENCE FOCUSING ON SOCIAL CAPITAL INDICATORS

Abstract ID: 772
Individual Paper Submission

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Community disaster resilience can be defined as the capacity of a community to mitigate, prepare for, respond to, and recover from disasters (Burton 2015, Cutter et al. 2008). The ability to measure community disaster resilience is important, not only for implementing disaster management strategies in planning practice, but also for increasing knowledge about how communities perform throughout disaster event and recovery processes (Burton 2015, Cutter et al. 2008, Cutter 2016, Yoon, Kang, and Brody 2016). Community disaster resilience levels, however, are best understood when social attributes are incorporated and considered interconnected components including natural and built environments.

This study develops a community disaster resilience index which integrates social capital indicators, and highlights the importance of completeness in covering social capital for measuring community disaster resilience. Social capital can be defined as features of social organizations and trust that facilitate coordination and cooperation for mutual benefit (Aldrich and Meyer 2014). The role of Social capital during and after disasters has been discussed, at length, in the current literature. Findings typically show that a community with strong social networks tends to get less severe damages and more quickly recover from a disaster event (Aldrich and Meyer 2014). Social capital is one of the most significant factors related to community resilience levels, yet it is inadequately considered in many existing indices. (Cutter et al. 2008, Cutter 2016). To address this gap, this study answers, what types of social capital have been addressing in existing social capital indices and how do they contribute to explaining community disaster resilience?

To answer these questions, the study compiles a list of all social capital indicators that have been proposed in current indices and performs a frequency analysis. These indicators are categorized into three types of social capital based on the "attributes of ties": bonding, bridging, and linking social capital. This

categorization allows for the identification of the typologies of social capital that have been both covered and overlooked in community disaster resilience indices. Then, we examine the internal consistencies among the indicators categorized in each type of social capital by using Cronbach's alpha. Each indicator that is confirmed as consistent is then aggregated to create a combined index. Lastly, we conduct a nested regression analysis to determine if the set of social capital indicators contribute to increasing explanatory power for community disaster resilience. Flood loss data is used as a proxy variable for the level of community disaster resilience in the regression model. It is based on the main assumption underlying disaster resilience concept that a resilient community is less vulnerable to disasters as a result of a high level of capacity to mitigate and response to disaster consequences (Burton 2015, Cutter et al. 2008, Yoon, Kang, and Brody 2016).

Results suggest that the social capital indicators proposed in community disaster resilience literature are limited. The incompleteness in current indices may result in the undervaluation of the roles of social capital in terms of disaster resilience. Future research should be undertaken to employ more diverse indicators which better capture social capital in more innovative ways. Methods such as utilizing geotagged Social Networking Service data to infer social network patterns are expected to be useful. The study contributes to understanding the significant roles of social capital in terms of community disaster resilience.

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Key Words: Community Disaster Resilience, Social Capital, Indicator-based Measurement

GOVERNING THE NEIGHBORHOOD: NEIGHBORHOOD ORGANIZATIONS, DISORDER, AND PROPERTY REINVESTMENT IN DALLAS-FORT WORTH
Abstract ID: 776
Individual Paper Submission

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A significant challenge in mitigating urban inequality is the search for ways to reinforce the physical condition of housing and infrastructure in urban neighborhoods. While many neighborhoods experience significant decay and disinvestment over time, others experience new investment and owner maintenance activities that refresh the housing stock. We argue that neighborhood organizations, such as homeowner associations and voluntary neighborhood associations, play a significant role in mediating the physical condition of urban neighborhoods. Physical deterioration poses significant collective action dilemmas within urban neighborhoods. As a result, neighborhoods with greater institutional capital, i.e. organizations and social relationships that reduce transaction costs to cooperation and collective action, experience fewer instances of physical disorder and greater degrees of homeowner maintenance and

improvement than do neighborhoods with less institutional capital. To evaluate these hypotheses, we analyze code violations and building permits for single-family home renovations and additions from 2014 through 2019 for the cities of Dallas and Fort Worth, Texas. We compare these findings to prior analysis finding support for these hypotheses for Little Rock, Arkansas.

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Key Words: Neighborhood Associations, Homeowner Associations, Social Disorder

YOUTH, EXCLUSION AND COMMUNITY DEVELOPMENT: THE MECHANICS AND VALUE OF ENGAGING MARGINALIZED YOUNG PEOPLE IN PLANNING AND POLICYMAKING
Abstract ID: 841
Individual Paper Submission

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In Latin America, a complex history of exploitation and institutionalized violence is now compounded by poverty, unequal access to education and employment, inadequate state security and the increasingly strong global criminal economy of drugs and weapons, which drive alarming numbers of individuals to engage in delinquency. In 2012, the average national homicide rate in Latin America was over four times the global average and young men from the Americas accounted for 15% of all homicide victims worldwide. Young people have become the focus of official reports about increased public insecurity, being forced to bear the weight of negative representations of their generation in the media, and the official discourse. As a result, youth-specific social violence (such as street delinquency and gang violence) is increasingly being perceived as a major barrier to community development. In Latin America, the popular and official attribution of most crimes to youth reproduces the pervasive image of the 'anomic adolescent other' and perpetuates their exclusion from formal processes of planning and policymaking.

While in recent years, traditional punitive responses to delinquency exercised through the criminal justice system have been increasingly complemented by a public health approach that seeks to prevent violence through risk reduction and protection mechanisms (Moser & MacIlwaine, 2005), planners and policymakers have integrated this stigmatization of youth into their decision-making, developing and resourcing social interventions that target "at-risk" youth in the region rather than working with young people. Such programs seldom address the structural factors related to youth-specific social violence, focussing instead on controlling bad behaviour, developing positive personal attributes and filling unproductive time with structured, adult-supervised activities (Coalter 2013). There has been little research on the impact of such strategies, and only a few scholars (ex. Darnell 2014) are questioning how programs that depoliticize youth delinquency, like these, might perpetuate the disempowerment or disenfranchisement of target beneficiaries both through the categorization of "youth" as a problematic life-stage and through the entrenchment of their position in the global system as needy recipients of expert guidance.

This paper examines the mechanics and value (Kraftl, 2013) of engaging racially and territorially

stigmatized young people in planning and policymaking, using data from a 4-year ethnographic study in Old Havana, Cuba. This study explores the lived experiences of youth in a rapidly gentrifying, economically unstable neighbourhood, with a severe housing shortage and increasingly 'tourist-friendly' public spaces, during a period of national political and economic transition. Using affect-focussed arts-based research (Hickey-Moody, 2013), this research found that urban structural conditions such as housing, public space and gentrification affect young peoples' meaning-making and identity formation processes, impacting their perceived options for their futures and influencing their behaviour choices. This action research project supported the creation of a community-based theatre group, Joven Habana, that used works of theatre and film to advocate for policies that problematize, rather than reify the marginalization of stigmatized youth, and to empower locally-led advocacy efforts that challenge the structural barriers to community development.

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Key Words: Youth, Community-Led Development, Marginalization, Latin America, Arts Based Research

"IT'S LIKE YOU'RE INVITED TO A BANQUET, BUT CAN'T EAT ANY OF THE FOOD:" LIVED EXPERIENCES OF DISPLACEMENT ALONG WATERLOO REGION'S LRT CORRIDOR
Abstract ID: 889
Individual Paper Submission

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In 2019, Waterloo Region in Southern Ontario opened its new light rail transit (LRT) system; it is the smallest community in North America to operate a full LRT. Its planning rationale has less to do with moving people and more to do with managing growth in Canada's fastest growing urban region. The LRT works in conjunction with an urban growth boundary (the Countryside Line) to curb sprawl on the urban fringes and encourage development within the core. The results have been impressive; more than C$3 billion was invested along the LRT corridor before the line opened and new investment, largely in the form of condominium developments continues apace.

While this has largely been praised within the region and by outsiders, this approach to growth management is not without its consequences. Gentrification is rapidly reshaping many neighbourhoods along the LRT line, including downtown Kitchener, which houses many of the region's low-income residents, as well as social services that cater to them. The Region of Waterloo has been monitoring change along the LRT corridor; while its analysis (primarily using census data) has concluded that gentrification is taking place in several areas, it has found little statistical evidence of displacement occurring (Region of Waterloo, 2019). Recent scholarship has highlighted the shortcomings of trying to quantify displacement in this way (Easton et al., 2020). There is also a growing understanding that displacement has moved beyond purely economic factors outlined by Marcuse (1985), towards more experiential and social forms of displacement that may not necessarily result in physical outmigration (Elliott-Cooper et al., 2019).

Therefore, there is a need to go beyond statistics to better understand the complex and often intersectional meanings of displacement from the perspectives of those living through it. We do this through an analysis of two dozen interviews conducted with persons with lived experiences of poverty who live, or lived, along the LRT corridor, primarily in and around downtown Kitchener. This research represents a partnership between the University of Waterloo and the Social Development Centre Waterloo Region (SDC), a charitable non-profit, social planning and community development organization that focuses on advancing social justice and documenting the lived experiences of poverty and homelessness. These types of partnerships combine the theoretical and methodological grounding of academic research with the on-the-ground connections that organisations such as the SDC have with affected communities. In this way, they have the potential to both generate new knowledge about gentrification and displacement and elevate social justice issues within mainstream planning debates (see Maharawal and McElroy, 2018).

Our interviews consisted of both sit down conversations and walk along interviews. We find evidence of systemic displacement that involves financial pressures, harassment from landlords and a loss of community, services and 'homeless-friendly' spaces. Additionally, these interviews reveal new sources of knowledge about urban space from the perspectives of residents who have spent much of their lives within a very small geographic area. This information about how buildings, streets and neighbourhoods have changed offer intimate and detailed knowledge that counterbalances top-down, or statistical accounts of change. This combination of knowledge has also allowed us to begin to map the spatial locations and types of direct, indirect and experiential displacement that go beyond an individual's own experience. This is highly relevant to planning theory and practice, as affordable housing has shot up the political priority list in recent years. As this research is a collaboration between academic and non-academic partners, we also discuss the challenges and opportunities of this type of partnership, as well as offer suggestions for academic researchers on how to partner meaningfully with non-profits within their own communities.

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Key Words: displacement, gentrification, lived experience, light rail transit, Waterloo Region

BEYOND HOUSING: COMMUNITY LAND TRUSTS AND EFFORTS FOR COMMUNITY-CONTROLLED DEVELOPMENT
Abstract ID: 898
Individual Paper Submission

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Since the emergence of the first community land trust (CLT) in 1969, the CLT has become overwhelmingly a tool to provide permanently affordable housing for low-income people (Davis, 2010). While CLTs are useful tools to build and maintain affordable housing, many communities around the country are looking at the CLT form of ownership – in which the land is owned by a non-profit organization and removed from the market – as a way to do many other things and serve many other community needs and interests (Curtis, 2018; Rosenberg and Yuen, 2012; Sorce, 2012). These needs and interests include, among others, retaining small businesses facing the threats of displacement by significant rent increases when their current leases are up, trying to preserve manufacturing land in places losing space for manufacturing, trying to construct and maintain spaces for not-for-profits and other community service providers, etc. Unfortunately, the public sector and non-profit sectors' organizational frameworks and subsidy programs are overwhelmingly geared towards housing production and maintenance. CLTs that do pursue other ends therefore usually do so without the public or non-profit support they need; support that is often present (if certainly significantly under-funded) when the goal is for affordable housing. That forces these CLTs to not only do the community organizing to build support for these efforts, but also to try to build the frameworks that allow CLTs to pursue these ends. This has the effect of making these efforts especially difficult and cumbersome.

In this paper we will use our experiences as part of the steering committee of the newly formed Western Queens Community Land Trust (WQCLT), as well as interviews and conversations with CLT practitioners elsewhere in New York City and around North America. We will analyze the difficulties and problems that CLTs confront when they go "beyond housing;" and how the CLTs have dealt with these difficulties and problems. We will do so both to provide intellectual support for these efforts around the country, and to think more broadly about the potential of CLTs to be tools for real community control – and how the CLT form cannot lose sight of the "community" that should be at the heart of it (DeFilippis, et al., 2017; Lowe and Thaden, 2016).

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Key Words: Community Land Trusts, Community Control

COMMUNITY-DRIVEN PROGRAMMING: HOW NEIGHBORHOODS SHAPE IMMIGRANT RESOURCES
Abstract ID: 899
Individual Paper Submission

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Across communities, public library branches offer one of the few free, trusted, and safe spaces that are open to all. More than just safe spaces, they provide a range of traditional and nontraditional resources for immigrants, from job search assistance to bilingual story times to English as a Second Language classes. Even within one library system, the offerings in any given library branch are as unique as the neighborhood in which the branch is located. Through a mixed-method study of neighborhood library

branches in Boston, this research asks how neighborhoods—through expressed needs, community volunteerism, cultural sharing, and partnerships with local organizations—shape neighborhood library branches and the services they offer to immigrants.

The findings reveal that, despite operating within bureaucratic institutions, neighborhood library branches are uniquely responsive to community needs and reflective of community assets, as evidenced by the programs and services they offer. Individuals, groups, and local organizations often bring programs that engage immigrant communities to neighborhood library branches through an informal, organic process. This results in a diverse and valuable set of programs across branches; however, the community-driven nature of the programming benefits some neighborhoods more than others.

Whereas scholarship on the distribution of resources across local organizations has tended to focus on the strong role of institutions, this research highlights the influence of neighborhoods on local organizations, even those that operate within a large, public institution. Furthermore, it speaks to some of the challenges that public-private partnerships and reliance on volunteers pose for the equitable distribution of resources.

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Key Words: Neighborhoods, community resources, local organizations, public libraries, immigrant populations

MAJOR LEAGUE SPORTS VENUES: ANCHORS IN URBAN DEVELOPMENT AND NEIGHBOURHOOD REVITALIZATION
Abstract ID: 980
Individual Paper Submission

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Cities are increasingly using sport as a catalyst for economic and cultural development (Trendafilova et al., 2012). Chapin (2004) notes that for decades, construction of new sports facilities was rationalized based on its perceived economic impacts, however, come the 1980s a major shift towards the impact of sports facilities emerged. Specifically, the development of sports venues has been rationalized on the basis that they are central anchors and catalysts for district redevelopment (Chapin, 2004; Spirou, 2010). Despite the persisting narratives on the effectiveness of major league sports venues on neighborhood revitalization, there is little research to confirm this position.

Through a mixed-methods approach, this research seeks to better understand the perceptions towards and realized impacts of major league sports venues on neighborhood revitalization. Perceptions towards major league sports venues as effective catalysts for urban change are collected through the dissemination of a web-based survey to planning, real estate development, and economic development experts located in 67 North American cities (those municipalities with a major league sports facilities developed for franchises

of the NFL, MLB, NBA, NHL, and/or MLS in Canada and the USA). This component of the research is complemented through an analysis of census tract data to determine the relationship or impacts between major league sports venues and neighborhood revitalization. Specifically, from 2000 to 2016, our analysis focuses on changes in 1) population 2) dwelling counts 3) population density 4) land-used mix and 5) median dwelling value in census tracts located near the local major league sports venue.

The findings of this research fill a gap in providing empirical evidence regarding the relationship between major league sports venues and neighborhood revitalization. As major league sports venues have emerged as a common strategy for neighborhood revitalization, this research provides critical findings regarding actual outcomes and thus its effectiveness in achieving revitalization objectives.

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Key Words: Neighbourhood Revitalization, Major League Sports Venues, Urban Catalyst, North America

CIVIC ENGAGEMENT IN CHINA'S LAND EXPROPRIATION-INDUCED RESETTLEMENT NEIGHBORHOODS: A SHANGHAI CASE STUDY
Abstract ID: 1048
Individual Paper Submission

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Civic engagement is a composite of associational life and voluntary interaction that develops knowledge, skills, values, and motivations to promote the quality of life in a community. Since the late 1990s, increases in community-based individual voluntarism, organizational membership, electoral participation, and activity involvement have provided strong evidence for the proliferation of civic engagements in China's grassroots society. However, as China's urban neighborhoods have become more diverse in location, size, function, resident composition, and other aspects, it is inappropriate to generalize China's base-level civic engagements without referring to specific neighborhood contexts. Through a Shanghai case study, this research unravels the conditions and features of the civic engagements in China's land expropriation-induced resettlement (LEIR) neighborhoods. LEIR refers to the state-led rural-to-urban resettlement arrangements for land-expropriated villagers. For affected rural dwellers, LEIR practice has transformed their life patterns from a horizontal and self-sufficient style in spacious village houses to a vertical one depending on market goods and paid services in compact urban neighborhoods. Villagers' uneasy post-resettlement life transformation has largely affected their civic engagements in LEIR neighborhoods. Although institutional and infrastructural platforms have been set up for conditioning villagers' associational life, the overall civic engagements in LEIR neighborhoods are neither adequate nor effective. This is largely due to the lack of meaningful citizen participation aiming at addressing public issues and engaging residents in decision-making processes. Meanwhile, civic engagements in LEIR neighborhoods are not equally available or attractive to resettled villagers. Finally, the involuntary nature of the resettlement and multifaceted urban integration challenges have combined to discourage villagers in participating civic activities in their neighborhoods. Villagers' civic engagements in LEIR neighborhoods require continuous institutional guidance and support. This study advocates for the establishment of robust and responsive policies to create for resettled villagers with a larger institutional

space for interest representation and resource access.

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Key Words: Civic Engagement, Land Expropriation-induced Resettlement Neighborhood, Villagers, China, Shanghai

THE TROUBLE MAKERS AS CITY MAKERS? PARTICIPATION OF EXPERIENCED CITIZENS IN URBAN PLANNING PROCESSES
Abstract ID: 1079
Individual Paper Submission

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Privileging access to decision making that draws on the local lived experience of local people is at the heart contemporary planning discourse. Nonetheless, public participation faces multiple encounters including a major challenge of recruiting the individual participants, engaging them in the process and providing the public with meaningful tools while distributing it in a fair and inclusive way. In accordance, representation, inclusion, outreach and empowerment are extensively discussed both when examining and when promoting public participation. The unorganized, unpaid and unprofessional public are considered as lacking power, and often approached as idiosyncratic, one-time participant in a specific process (Powell and Colin 2009; Tauxe, 1995). However, there are empirical evidence of "natural joiners," (Lowndes et al, 2001), who engage in more than one voluntary participation process, or the "usual suspects" (May, 2007) that engaged repeatedly in public participation processes, but they are understudied.

This study focuses on the small, overlooked, distinct category of the public, who persistently and proactively get involved in city-making. It will not only uncover the role and the influence of experienced participators, but also calls for a more nuanced examination of public participation patterns as an underdeveloped dimension in current public participation literature, discussing both its positive contributions and negative implications.

data is drawn on 12 in-depth interviews with individuals who took part in at least three participation processes in the city of Jerusalem. Two additional relevant sources were interviewed: two city officials from the Jerusalem planning department and two NGO representatives, who are involved in city planning in Jerusalem.

Preliminary findings suggest that all informants identified the small but acknowledged group of experienced participators. Common to all experienced participators was high civil awareness that manifested in knowledge and definite opinions about contemporary public debates, and beliefs that the public should stand up for things that matter. Their participation in multiple participation processes does not stem from a strong sense of efficacy, most of them are critical of the participation processes and frustrated by their narrowness and one-sidedness. But as experienced participators they developed several strategies to enhance civic voice in urban policies: (1) Suggesting or initiating additional activities or methods during the participation process; (2) sharpening their ability to navigate the professional jargon, which enabled them to criticize policy proposals as well as to submit their own alternatives; (3) A few frustrated experienced participants realized that they would have greater effect if they joined their Neighborhood Self-Management Organizations and steered the participation process from a more

established position; (4) pushing for processes that are led by non-governmental actors that can gain trust from both sides; and (5) although acting at the neighborhood scale, some of them established a larger urban network, encouraging joint action at the city level.

On the other side, the repeated, experienced participators were portrayed by the city officials in less compelling ways: as oppositionists, representing none but themselves, pushing aside the 'real' local community, and bringing negative atmosphere. However, the officials acknowledged their achievements as well, such as pushing the authorities to confront issues that they tended to ignore and taking into consideration criteria that were not included in the initial analysis and plan. The NGO representative had a positive view of them, but thought they could be more effective if they join existing community organizations or NGOs.

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Key Words: natural joiners, public participation, repeated participation, city-making

COMPLICATING PERCEPTIONS OF ARTISTS' ROLES IN RACIALIZED COMMUNITY DEVELOPMENT
Abstract ID: 1085
Individual Paper Submission

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Problem Statement

In much of the literature around gentrification and community development, artists' presence is linked to the arrival of art galleries and related commercial enterprises to poor and minority neighborhoods, creating creative beachheads to promote growth and "diversity," yet largely understood as attracting a wealthier population to the neighborhood. Critics have even coined a term, "artwashing," during which capital forces use artists as pioneers in their efforts to erase neighborhoods (Deutsche & Ryan 1984; Ley 2003; Ocejo 2015; Smith 1996; Zukin 2010; Pritchard, 2017).

Our paper reverses this depiction by presenting a case study of two Los Angeles-based social practice artist collectives. Slanguage and Public Matters self-consciously engage and collaborate with young residents of Wilmington and East Los Angeles to proclaim their identities, embrace their neighborhoods and local histories, and – perhaps above all – resist efforts to erase them; examples of what we term equitable creative placekeeping. These artists move our analysis of gentrification beyond Brown-Saracino's (2010) helpful categories because instead of being pioneers or even social preservationists, Slanguage and Public Matters are supportive placekeepers attempting to help develop a community's voice in response to environmental injustices, social and political erasure, and racism (Bedoya, 2014).

We study these two collectives because they share common principles, yet position themselves and their

practices differently. Slanguage are Latinx, and work in the same neighborhood where one of them was born and raised. Conversely, Public Matters is not residents of East Los Angeles, and are not Latinx. Slanguage simply opened its storefront and assumed a provisional approach to teaching neighborhood youth how to make art and voice their emotions and concerns. Public Matters teaches through the institutional link of the East Los Angeles Renaissance Academy (ELARA), one of the nation's three high schools with a focus on urban planning.

However, they both adopt socially engaged art (SEA) practice as their mode. Socially engaged art emphasizes collaborative authorship, discourse, place, and social context, and a "critically self-reflexive dialogue with an engaged community" (Helguera, 2011, p. 12). They reject efforts to bind their activities to familiar art-based community development that favors capital over community.

Methods

This qualitative study utilizes two in-depth interviews with four socially-engaged artists in the Los Angeles region. Wilmington and East Los Angeles are both communities with a very high Latinx population and very poor. Both communities confront environmental injustices. Wilmington lies in the shadow of the LA Port, while four freeways crisscross ELA. Information on the communities was researched through local archives and newspapers, as well as ephemera provided by the artists.

The artist and collaborator Anne Bray conducted the two interviews that ran between 6 and 8 hours. Shannon transcribed and coded them using Atlas.ti. Both authors contributed to the conceptualization and writing. The codes were used to categorize the artists' backgrounds, approaches to art, relevant projects, networks and relationships, styles of engagement, and their efforts to use their art as equitable creative placekeeping.

Results

The artists are not shaping neighborhood culture, but rather offering a set of skills so the community's younger generation can build self-consciousness and generate its own identity. Public Matters conducted projects with ELARA's staff and students created 3-dimensional maps of key arterials around the high school where students highlighted dangerous intersections and offered planning solutions.

Slanguage's open door through which local youth pour creates a different set of outcomes. Wilmington is the kind of oppressed Latinx community where art is not supported, and art outside the mainstream galleries is not art. Slanguage reverses such understanding by offering space for youthful graffiti artists, graphic designers, skaters, and others to advance their skills, creating art everywhere.
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Key Words: Equitable Creative Placekeeping, Artist and Community Development, Community Empowerment, Socially-Engaged Art, Art and Education

GREEN AND BLUE SPACE JUSTICE INITIATIVES: THE EXPANSION OF NONPROFIT MODELS IN CALIFORNIA.

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Collaborations among park-based nonprofits and public agencies in environmental justice (EJ) initiatives are on the rise. These initiatives are aimed at increasing access and use of Green and Blue Spaces (GBS) by underserved individuals and groups. The increasing involvement of nonprofits stems from a gradual reduction in public spending due to neoliberal approaches to governance and more recently, through heightened advocacy toward EJ goals (Anguelovski, 2015; Rigolon, 2019). Previous research has shown advancement of EJ pursuits for GBS, including efforts to engage marginalized groups in decision making (procedural justice) and recreation programs to ensure these groups can visit GBS and feel welcome in those settings (interactional justice; Loukaitou-Sideris & Mukhija, 2019; Rigolon, 2019). Yet there is limited research to date investigating the influence of externalities (unexpected external influences - positive or negative - on the roles and strategies of the GBS nonprofit, for example, coalition membership or change in park policies or funding measures) on these advancements.

Building on our previous work (Gibson, Loukaitou-Sideris, & Mukhija, 2018; Rigolon, 2019; Rigolon & Gibson, 2019), in this project we explore the interactional and procedural justice roles and strategies of GBS nonprofits in California, a progressive state known for various EJ victories in recent years (Rigolon, 2019). We seek to answer the following questions: 1) How have GBS-supporting nonprofits evolved in their justice pursuits since their inception? And 2) How have GBS-supporting nonprofits experienced externalities during this evolution and how have they responded to them?

To determine catalysts in GBS nonprofit roles and strategies, we conducted interviews with staff members of GBS nonprofits working to increase interactional and procedural justice among underprivileged communities in California. First, we conducted semi-structured interviews with 22 individuals representing 17 nonprofit organizations to determine the scope of work, perceived roles, and strategies used toward achieving justice outcomes. Second, we revisited (3-5 years later) GBS nonprofits previously interviewed to investigate if roles and strategies had changed since the first interviews or since the inception of the GBS nonprofit.

Interviews revealed that fundraising and sponsorship is a common struggle that nearly all nonprofits engage in as they amalgamate funding and supplies from various individual and corporate sources and public agencies. Further, nonprofits working to foster procedural justice for GBS through advocacy use several complex strategies to influence public policy change and generate funds for GBS. Those strategies include forming coalitions for specific campaigns, completing demonstration projects that can be scaled up to many other sites, and conducting and reporting research on GBS-related issues that are pertinent to public policy and urban planning.

Additionally, we found that impactful procedural justice efforts can be achieved with limited funds, which enables small neighborhood organizations to be important actors in local and statewide conversations on policy change and park funding. Also, public agencies provide small nonprofits with the funding to conduct community outreach work for the design and planning of GBS.

Our findings suggest that public agencies that collaborate with nonprofits generate a supportive, inclusive, and cohesive community environment in support of GBS. These community outreach efforts also contribute to parks and open space that reflect the cultures of marginalized communities, or that "fit" with the needs and histories of those communities (Gibson et al., 2018). Thus, procedural justice efforts that empower marginalized groups to build parks also contribute to advancing interactional justice by creating places where such groups can feel welcome and recognized. Public sector planners must recognize the potential of collaborating with EJ-focused nonprofits to achieve equity goals for GBS and beyond. And other states could consider following California's lead in providing these nonprofits with the necessary support to build more equitable communities.

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THE CHANGING FACE OF KOREATOWN, LOS ANGELES: AN ANALYSIS OF COMMERCIAL GENTRIFICATION WITH AN EQUITY LENS
Abstract ID: 1108
Individual Paper Submission

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Koreatown is one of the most well-established immigrant communities in Los Angeles. Besides its proximity to downtown, easy access to transit, and relatively affordable rents compared to close neighborhoods, this multiracial and multi-class community boasts its authentic and vibrant commercial strips enough to become a playground for hipsters and paradise for foodies. Once Koreatown was a haven for immigrants, now it has become the most populated and desirable neighborhood in LA along with the increased risk of gentrification and displacement. The overwhelming development boom for upscaling the housing and retail in Koreatown exacerbate the vulnerability of the very marginalized groups in the community.

Vibrant retail corridor with local small businesses such as mom-and-pop stores certainly contributes to defining the cultural and social identity of a community, especially an immigrant community (Gandhi and Minner, 2017). Further, immigrant communities have long served a hotbed of small businesses of immigrant entrepreneurship, as those have been the frequent employers of immigrants (Rankin and McLean, 2015). If gentrification happens in the immigrant communities of color, it may hit the communities harder than others by disrupting the cultural and social identity of the communities (Rankin, 2008).

However, a limited amount of previous research examined the gentrification in Koreatown focusing on socioeconomic and housing shifts. In order to better understand gentrification dynamics in Koreatown, this research aims to delve into the trajectory of commercial activity in order to better address the particular vulnerability and precariousness of marginalized groups to gentrification and displacement. Applying a mixed-method research approach, this research asks the question: what are the trends and patterns of commercial activity changes in Koreatown under the gentrification and displacement risks?

First, the study explores the trends and patterns of small businesses and commercial development in Koreatown from 2010 to 2019 by utilizing NETS and ReferenceUSA data. Focusing on the small businesses for the retail and food industry, the data analysis finds whether small businesses have become more precarious under the gentrification and displacement risks. Next, the research deploys the field observation as a ground-truthing exercise to capture a detail showing the signs of gentrification and

displacement in Koreatown at the street and block level. Through the field observation, the study will examine the commercial gentrification in more detail by identifying the changes in services and goods of retails.

The findings of this case study will highlight the importance of incorporating commercial and retail activity along with the housing market activity for neighborhood change analysis, especially when examining the Asian immigrant communities. In addition, the study will demonstrate how a ground-truthing exercise can improve the gentrification analysis with regards to better capturing and predictability for the Asian immigrant communities.

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Key Words: Small business, Koreatown, Gentrification, mixed-methods

ENCOURAGING PRESERVATION ACTIVITIES IN LOCAL HISTORIC DISTRICTS: AN ANALYSIS OF INCENTIVE PROGRAMS IN US CITIES
Abstract ID: 1155
Individual Paper Submission

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Historic district is a representative preservation tool to maintain a neighborhood's overall charcteristics, called *tout ensemble*. According to its main agent, historic district is divided into the National Register and locally designated historic district, which have some differences in its roles (Hamer, 1998). The National Register historic district is an honorary designation accompanied by protections from federal projects and eligibility for historic tax credits. On the other hand, as "the first line of defense at the local level" (Stipe, 2003), local historic districts impose regulations on properties and request design review processes managed by a local preservation board. These stringent regulations and bureaucratic processes over local historic districts arouse widespread resistance to district designation from residents (Shipley et al., 2011). The adoption of incentive programs is a way to divert this opposition as well as to promote rehabilitation or restoration of historic properties (Tyler, 2000). Yet, there is little research about preservation incentives, especially about their features and impacts at the local level (Ryberg-Webster, 2017). To fill this gap, this study investigates how incentive programs in twenty-five US large cities encourage preservation activities in local historic districts.

Exploring local preservation ordinances, zoning codes, and other administrative data on incentive programs for locally designated historic districts, this research focus on two aspects: general features of incentive programs and their contributions to preservation activities. First, I categorize each municipality's programs into financial incentives (easement, fee exemptions, grants, and tax credits/abatements) and planning ones (code relief, incentive zoning, and transfer development rights). This categorization allows me to compare how each municipal government's programs are different in features such as rewards, eligible works, and qualifications. Second, this study examines the overall

characteristics of preservation projects in local historic districts, supported by municipalities' incentive programs for the last ten years (2010-19). The analysis of these projects evinces incentive program's contributions to management and improvement of historic properties in the districts.

Preliminary findings show that most of the municipalities don't adopt sufficient incentive programs to mitigate the opposition against local district designations and to facilitate preservation activities. They generally administer one or two incentive programs, which are mostly tax credits/abatements in financial incentives and code reliefs in planning ones. Although only a few local governments develop grant programs for rehabilitation, restoration, and maintenance of historic properties in local districts, eligible works or qualifications to receive rewards are very limited. This study also finds that financial incentives contribute more to encouraging preservation activities than planning ones. These findings provide insight into policy implications for the management of local historic districts and the development of local preservation ordinance.

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Key Words: historic district, incentive programs, preservation activities

COMMUNITY BENEFITS AGREEMENTS (AND DISAGREEMENTS) IN THE ANTI-DISPLACEMENT TOOLBOX
Abstract ID: 1161
Individual Paper Submission

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Community benefits agreements (CBAs) are gaining in popularity as a tool for ensuring that transit-oriented and other large-scale development projects yield lasting benefits for residents and small business owners who are vulnerable to displacement. These binding contracts between private sector developers and community groups can result in affordable housing, job opportunities, small business supports, green and open space, sustainable building, and other benefits (e.g., Basamusa 2008). Moreover, they have mobilized broad coalitions around a common anti-displacement agenda (Belongie and Silverman 2009; Jansenn-Jansen and van der Veen 2017).

Yet CBAs are notoriously difficult to negotiate and enforce (Marantz 20015). Contract terms may deliver only small gains over what can be achieved through zoning and local ordinances (Marantz 2015). Groups ostensibly representing the entire community may be coopted by self-serving interests and they depend on local government support which may or may not be forthcoming (Wolf-Powers 2010; Rosen and Schweitzer 2018).

This paper addresses the potential and limitations of CBAs in the context of a 15 acre transit-oriented development project in Somerville, MA, a working-class city of immigrants already undergoing rapid gentrification and displacement. The case study analyzes six years of community organizing and

advocacy leading up to the negotiation and ratification of a CBA that promises to deliver approximately $20 million of affordable housing, job training resources, small business supports, green and open spaces, and public art investments as well as commitments to local hiring, labor-friendly construction contracts, and sustainable building designs. While these gains are substantial, they represent significant compromises and questions remain about its long-term enforceability and the momentum of the anti-displacement movement.

Analysis of documents from the elected neighborhood council, a grassroots coalition, resident and labor groups, and city-appointed advisory committees as well as testimony from hearings, local media coverage, and interviews with key stakeholders supplement participation observation throughout the campaign.

This account is distinctive because it illuminates how concurrent advocacy to enact city-wide inclusionary zoning and affordable housing and job training linkage fees along with organizing to elect progressive city officials can influence the CBA negotiation process and the terms of the contract.

Findings also affirm the significance of local government in both enabling and constraining CBA negotiation and implementation.

Involvement of multiple types of community groups over the course of the CBA campaign affords analysis of dynamics of legitimacy and power and tensions between inclusion and marginalization among stakeholders with diverse backgrounds, experience, and expertise.

The case study also underscores the importance of organizational capacity to sustain community engagement, access legal and other expert advice, and provide facilitation and coordination supports for over-extended volunteers.

Together, these insights contribute to the emerging discourse on CBAs and they provide useful guidance for community activists and local planners considering adding CBAs to their anti-displacement toolbox.

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Key Words: community benefits agreements, value-capture, community organizing, anti-displacement, transit-oriented development

URBAN SCHOOL DISTRICTS AND NEIGHBORHOOD DEVELOPMENT: COLLISIONS, CONSEQUENCES, AND OPPORTUNITIES FOR COORDINATION
Abstract ID: 1167
Individual Paper Submission

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This study explored neighborhood change in relation to school changes in two U.S. cities, Oakland, CA and Denver, CO. The goal was to identify the direction and timing of these interactions and the subsequent effects on families and schools in order to pinpoint potential policy adjustments to school district's choice systems, school budget allocations, and facilities plans, and city policies for development approvals, neighborhood planning, and affordable housing.

The study used detailed longitudinal spatial and statistical data on schools and neighborhoods (census tracts), as well as interviews with parents, school staff, and neighborhood organizations to test and explain the relationships among changes to neighborhoods, including total population, household types, racial and ethnic composition, housing units, and housing tenure, and changes to schools, including quality rankings, enrollment, opening, closure, and reconstitution. Both cities saw rapid school development sparked by open enrollment and charter school policies at the same time many of their neighborhoods were experiencing gentrification and displacement. While the cities have somewhat different demographics, as well as different regional and state contexts for education funding, the statistical relationships between neighborhood changes and school changes were similar. Schools in neighborhoods with increases in total population, family households, housing units (both rental and owner units), and percent white residents increased their ranking. Schools in neighborhoods with increases in Hispanic residents and families with low incomes, saw declines in their rankings. Neighborhoods with increases in white households without significant increases in rental and ownership housing eventually had school rank increases but lost black residents and students in the interim. Neighborhoods with high levels of development also had more charter school openings, which sometimes threatened the existing schools' enrollment and funding levels. Neighborhoods with high percentages of black residents saw little new development and little to no change in school rank. Qualitative data reveal that displaced families, largely families of color, attempted to remain in their former neighborhood schools until the travel from their new neighborhood was too burdensome, the school was closed, or the student body changed.

The data reveal nuanced and temporal interactions between the number and type of new residents and housing units in a neighborhood and the change in the neighborhood school's enrollment, demographics, quality rankings, classroom resources, and "branding". When neighborhood demographics change, without sufficient increases in families with children and the number of housing units, or city policies to prevent displacement and school policies to support existing students at risk of displacement, families and students are at first displaced from the neighborhood and then from their school. Neighborhoods with little new development and high shares of minority residents often experienced declines in their school's enrollment, since students can go elsewhere, and seemingly less investment from the school district or charter schools. The study suggests policies for city planners, community development organizations, and school districts to manage the constant and rapidly changing landscape of school choice, housing markets, and neighborhood gentrification. Before approving new traditional or charter schools or making major changes to existing schools, school districts should study the housing situation of their at-risk families and run scenario analyses on the effects of their changes on school and district resources, both in gentrifying neighborhoods and neighborhoods with little change. City planners should study how changes to the zoning code and comprehensive or subarea plans will affect the housing stock and the incomes of families with school-aged population. The two entities also should compare and coordinate results in order to avoid and mitigate negative impacts on urban families and public school resources.

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Key Words: Gentrification, Affordable housing, Neighborhood Change, Public Schools, Displacement

IMMIGRANTS' ATTITUDES TOWARDS NEIGHBOURHOOD AMENITIES THAT SUPPORT SOCIAL PARTICIPATION: A QUANTITATIVE EVALUATION OF PREFERENCES IN METRO VANCOUVER
Abstract ID: 1185
Individual Paper Submission

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Background: Recent critical theories pertaining to cultural diversity and immigrant experiences have focused on spatial, ethno-racial and social inequality experienced by ethnic groups and immigrants, and acknowledged that the immigrant population might have some barriers and challenges to community engagement and cultivating social activities and networks in the host countries (Couton & Gaudet, 2008; Kazemipur, 2012; Hurtado-de-Mendoza. Et al, 2014). In addressing these challenges planners may seek to better understand the needs of immigrants and explore how immigrants experience social isolation in residential neighbourhoods, what social supports they need, in what social activities they are involved, and how they can be integrated into new communities (Ajrouch, 2008; Guo & Guo, 2016). This study sought to address the question of how socio-demographic factors and preferences for neighbourhood amenities are associated with social participation of immigrants and examined the strength of relationship between those variables, sense of belonging and social connections, and their engagement in social activities.

Materials and methods: We conducted an online survey in Metro Vancouver region from January 2019 to October 2019. Our sample was comprised of 164 recent and long-time immigrants living in different neighbourhoods. In this study, social participation measured by the frequency of 4 activities at the neighbourhood-level, including art, music, literature or hobbies, sports or recreational, religious, and neighbourhood or community activities. To find differences in social participation and preferences for neighbourhood amenities (recreation or community centers, libraries, places of worship, and public spaces for gather) between male and female immigrants, we used a Mann-Whitney U test. A Spearman's rank correlation coefficient helped us discover the relationship between social participation, preferences for neighbourhood amenities, and age, length of stay, education level, and English proficiency. Additionally, a binary logistic regression model was used to determine the effect of sense of belonging, the importance of proximity to public services, and having social connections with neighbours on the likelihood of immigrants' social participation after adjusting for selected demographic variables.

Results and contribution: A basic descriptive analysis shows that the highest proportion of immigrants were engaged in neighbourhood or community activities. In general, our findings highlight the relative importance of socio-demographic factors for social engagement of immigrants and their preferences for some neighbourhood amenities. Besides, the results indicate that social participation is correlated with the preference for some social spaces in residential neighbourhoods. The logistic regression also illustrates that although neighbourhood amenities can support social activities of immigrants, some personal and social factors such as gender, social connections with neighbours and a sense of belonging are stronger predictors for immigrants' social participation. Clearly, the results of this study will be of interest to (1) scholars who study immigrant social engagement (2) social and physical planners (3) policy makers at municipal and provincial levels who set policy about community support services. These results help planners identify the barriers to immigrant engagement and promote social inclusion of immigrant communities, and design welcoming neighbourhoods for them.

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Key Words: Immigrants, Social participation, Neighbourhood amenities

BUILDING SPATIO-TEMPORAL COMPARISONS: GENTRIFICATION AND HEALTH FROM THE NATIONAL TO THE NEIGHBORHOOD LEVEL
Abstract ID: 1193
Individual Paper Submission

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A substantial body of literature links neighborhood conditions to health outcomes (Diez Roux & Mair, 2010; Kawachi et al., 2009), but the relationships among gentrification, displacement and health remain unclear. This uncertainty stems, in part, from challenges to measurement: the definition and presence of gentrification, geographic scale, and time (Tulier, Reid, Mujahid, & Allen, 2019). The dynamic nature of gentrification complicates its definition although considerable scholarship exists using existing data sources (Ding, Hwang, & Divringi, 2016; Freeman, 2005). Data availability shapes the geographic scale at which many studies occur, which can present a modifiable areal unit problem. The uneven progression of gentrification and displacement confounds the linkage between exposure and health outcomes measured at the individual level. In short, despite the central roles gentrification, displacement, and health disparities play in urban policy discussions, we need considerable research to clarify relationships among these topics. In this study, we explore datasets linking gentrification and health at the national, state, city, and neighborhood level over time.

We will integrate an existing dataset with national, state, and city data with local findings on gentrification and health. Our previous work created a database linking gentrification indices at the census tract to the CDC's 500 Cities: Local Data for Better Health, and the U.S. Small-area Life Expectancy Estimates Project–USALEEP. We operationalized gentrification using approaches developed by Freeman (2005) and Ding, Hwang, and Divringi (2016). CDC's 500 Cities dataset contains data for 27 measures of chronic disease related to health behaviors, health outcomes, and use of preventive services and the USALEEP dataset (also known as the Neighborhood Life Expectancy Project) provides life expectancy at birth for most U.S. Census tracts for the period of 2010-2015.

In collaboration with Communities in Partnership, a nonprofit based in Old East Durham, and community residents, we will conduct a second round of a door-to-door household survey stratified by type of housing tenure (i.e., tenancy versus owner-occupied) using community based participatory methods in April 2020. The previous survey of 120 household (~12% of the neighborhood) in April 2018 will allow us a second point in time. Both surveys include questions on housing affordability, attitudes, and beliefs

about displacement and/or the threat of displacement, and self-reported health status and behaviors.

By utilizing two similar but different definitions of gentrification, exploring multiple geographic scales including a sub-census tract neighborhood, and measuring health outcomes at multiple points, we hope to build on the literature linking gentrification and displacement to health and continue the dialogue between community stakeholders and decision makers on the topics on disinvestment, gentrification, and displacement and the social determinants of health

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Key Words: social determinants of health, gentrification, displacement, housing, community-based participatory research

COMMUNITY AND WORKER EXPERIENCES IN THE AMERICAN SOUTH'S GROWING MANUFACTURING INDUSTRY
Abstract ID: 1205
Individual Paper Submission

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Planners and economic development officers across the American South have spent recent years smokestack chasing, offering billions of public dollars incentives for manufacturers to open plants in the region. Companies are drawn by these incentives, the region's business-friendly policy environment, access to local markets, and weak environmental and worker protections. Despite decades of literature questioning the effectiveness of business attraction policies (Logan and Molotch, 2007; Chapple, 2012; Boothroyd and Davis, 1993, Rubin 1988, and Perry 1989), the promise of job creation remains politically popular in a region with some of the nation's highest poverty rates and continued legacies of racial inequality. There has been a substantial level of success in attracting manufacturing firms to the region. Last year Alabama was the largest single recipient of foreign direct investment – mostly in transportation-related manufacturing, and manufacturing employs fourteen percent of the population (Alabama and Mississippi). Aside from broad measures of poverty and unemployment rates (both of which remain high), there are few studies of manufacturing workers and communities in the American South.

This paper addresses this gap, presenting new data from the Southern Manufacturing Study, which surveyed community members and manufacturing workers at sites across Alabama and Mississippi. The paper addresses three broad questions (1) how are workers faring in these manufacturing plants, (2) what are the tradeoffs for local communities hosting manufacturing plants, and (3) are the opportunities and costs equitably distributed across racial and ethnic groups? Answers to these questions will provide valuable insight for planners, policymakers, and communities seeking to ensure equitable community economic development. The paper concludes with a discussion of the potential of job-quality and economic justice related community economic development strategies to ensure equitable distribution of

opportunity for southern workers and communities in an industrial South.

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Key Words: community economic development, American South, manufacturing, labor markets

NEIGHBORHOOD SOCIAL TIES, SOCIAL CAPITAL AND SELF-RATED MENTAL HEALTH: COMPARING MIGRANTS AND LOCAL RESIDENTS IN BEIJING
Abstract ID: 1232
Individual Paper Submission

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The mental health effects of neighborhood social capital has been widely recognized by both public health and community development scholars (DeFilippis, 2001; Kawachi & Berkman, 2001). Social ties developed within the neighborhood, along with the resources and leverage embedded in the network, provide critical social support for disadvantaged populations, leading to various mental health outcomes (Carpiano, 2006). In the meantime, Strong neighborhood ties may also create a perception of strong neighborhood social cohesion (e.g. trust, common values, norms of reciprocity) that affects mental health. Nevertheless, community development literature also widely documented potential negative effects on the upward mobility and well-beings of disadvantaged populations such as the urban poor and immigrants, suggesting a potential negative mental health effect of neighborhood social capital. Recent studies of the mental health of rural-to-urban migrants in Chinese cities also suggested that neighborhood environment – including social environment – may pose different mental health effects on local residents and migrants (Wen, Fan, Jin, & Wang, 2010).

Using data from a large-scale questionnaire survey conducted in 26 neighborhoods in Beijing, this study examines the mental health outcomes of neighborhood social capital in urban China. In particular, we investigate the extent to which different forms of neighborhood social capital (cognitive neighborhood social cohesion, neighborhood social support, informal control, and neighborhood participation) may predict the self-rated mental health of residents, and how such effects may differ migrants and local residents. Preliminary findings indicate that whereas cognitive neighborhood social cohesion and neighborly social support may promote mental health for both local and migrant residents, neighborhood social ties may only possess social capital and promote mental health status for local residents.

This research contributes to the ongoing debate on the effects of neighborhood-level social capital on mental health for different social groups. Also, this research highlights the importance of neighborhood social capital in maintaining residents' mental well-being.

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Key Words: Mental health, Neighborhood, Social Capital, Migrants, China

TRANSFORMATIVE STRATEGIES FOR COMMUNITY LAND: PARTICIPATORY COMPREHENSIVE PLANNING, INSIDE/OUTSIDE PARTNERSHIPS, AND COMMUNITY FINANCE
Abstract ID: 1240
Individual Paper Submission

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Community land trusts (CLTs) are an increasingly common response to a racialized gap in ownership of land and wealth, a lack of democratic control over what happens on urban land, and an increase in the power of extractive finance to determine development patterns. While there is a traditional CLT model based in tripartite board governance, ground leases that insulate land from the speculative market, and permanent housing affordability, there is increasing variation in their actual practices as the number of CLTs rises rapidly, with over 280 across North America. This swift growth and mainstream acceptance can come at a cost. CLT organizations that become increasingly focused on professionalized housing development have tended to lose some of the original intentions of the model, including community control and decommodification of land. The CLT model, on its own, is not inherently transformative (DeFilippis et al. 2019).

This paper uses this framework of transformative politics, defined as those that aim to subvert and dismantle the existing power structure, to understand community land organizations emerging at this inflection point for the CLT movement. This paper asks: what common understandings, strategies, and practices are organizations developing and implementing to advance transformative community control of land? We also address select corollary thematic questions: Following a thread of solidarity economy research, how can organizations scale without losing their democracy? How can CLTs overcome reliance on external funding that can compromise their values? What role does participatory planning play for CLTs that either continue to focus on housing or are expanding beyond housing? To answer these questions, we interviewed practitioners and activists in newer community land organizations oriented towards political transformation, racial justice, and economic democracy around North America, and reviewed the documented visions and practices of dozens more such organizations. We also triangulated these sources with our own in-depth participation in the launch of a new CLT in the Bronx, New York.

 This paper finds that the recurrent practices and strategies of transformative community land organizations fall into three categories: participatory comprehensive planning and site visioning, strong partnerships both inside and outside the traditional power structure, and community equity and cooperative finance models. We also find that their community engagement practices often center intergenerational political education on the CLT model and its relationship to solidarity economy and housing movements. Participatory comprehensive plans and site visioning exercises emerge as one potential practice to maintain democratic accountability on the path to scale. These findings are relevant for planners and educators who are invested in the transformative potential of the CLT model and are seeking emerging examples to learn from and to adapt. We hope this work informs further investigations and initiatives that integrate economic democracy and racial justice into community development and land use planning.

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Key Words: community land trusts, community ownership, finance, land use, participatory planning

ASSESSING EQUITY IN THE ACCESS TO CULTURAL OPPORTUNITIES IN SEATTLE'S MUNICIPAL AREA
Abstract ID: 1256
Individual Paper Submission

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Equitable access to urban places is a key issue in planning and often examined using jobs, homes, parks, food outlets, and care facilities as destinations. However, cities are also engines of culture and places of community, requiring a broader perspective on accessibility to spatially scarce resources such as museums, libraries, and creative spaces. Our paper analyzes how Seattle's public and private cultural facilities (assets) are spatially distributed. Specifically, we investigate whether proximity and access to cultural facilities significantly differed between different socioeconomic groups. Our hypothesis is that such difference exists and that the spatial distribution of cultural facilities is not equitable, favoring those most historically privileged in American cities: the White and middle- to high-income sectors of the population. We looked at cultural facilities located in the city of Seattle both as a whole and via their dominant use categories. Five dominant uses (education, entertainment, art, identity & advocacy, and other) were considered. Accessibility to each location was assessed using two modes of transit, bicycling and walking, tied to the transportation network using GIS network analysis. Census tract and block group level data by race and income were integrated with the network analysis to identify which socioeconomic groups were most correlated with proximity to cultural facilities. Accessibility scores were calculated as the deviations of each asset's catchment area's income and racial distribution from the overall income and racial distribution of Seattle. We found that there was a relationship between the location of cultural assets and the socioeconomic characteristics of residents living within walkable and bikeable distances, but not most strongly with White and middle- to high-incomes. When income is examined alone, we found across all metrics, modes, and distances that households with income lower than $10,000 were consistently overrepresented, with the lowest accessibility scores amongst the wealthiest groups. When extremes were not considered, distance scores tended towards a more homogeneous distribution, with values close to Seattle's overall distribution. When assessing accessibility by race at the block group level, people who self-identified as White alone had the lowest walkability scores for short distances. However, for biking and longer walking distances, this group frequently had the best scores. For short walking distances Asians typically had the highest scores. Blacks consistently had the worst scores across all distances. Combining race and income revealed additional insights. While Blacks had predominantly the highest accessibility at the lowest income level, they had the worst accessibility scores across other low- to mid-income categories. This shows an equity gap for Blacks, to whom cultural assets are not as accessible as for other racial groups. Identity & advocacy assets showed the most heterogeneous distribution across the different groups of household income by race. Positive scores significantly higher than Seattle's distribution were found for every racial group at low- and mid-income levels. This may show that identity and advocacy institutions tend to intentionally place themselves in proximity to a variety of socioeconomic groups that need access to resources and services. While the past decades have

broadened what is included in the analysis of resource accessibility in urban areas, there is still a dearth of studies on how cultural assets are distributed across different income and racial groups. Our study seeks to contribute to this debate and inform policy discussions regarding equity in cities by expanding accessibility considerations through the inclusion of cultural and community focused elements. Future research will investigate how the distribution of cultural facilities pertains to the demographic and socioeconomic patterns that emerge from the real estate market.

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Key Words: equity mapping, accessibility, cultural facilities, race, household income

COMMUNITIES LEFT BEHIND? EXAMINING THE SCOPE OF, AND DECISION-MAKING PROCESSES UNDERLYING, PUBLIC SCHOOL CLOSURES IN ONTARIO, CANADA
Abstract ID: 1273
Individual Paper Submission

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Public schools are more than educational institutions; they are public assets that are essential to healthy, sustainable, and complete communities [1-3]. Yet, public schools are being permanently closed across Canada, particularly within the province of Ontario, owing to declining student enrolments, aging school infrastructure, and reduced government funding. For over a decade, school closure decisions in Ontario have been directed by the provincial government's pupil accommodation review model [4]. This model has been roundly criticized for prioritizing economic efficiency to the benefit of school boards, while failing to consider the broader impacts of school closures on the households and communities served by these schools. In turn, school closure decision-making processes have led to atmospheres of conflict and resentment, and feelings of powerlessness within affected communities [5].

Despite the turmoil that school closure decisions often generate, little is known about the characteristics of communities in which school closures tend to occur, or of complexities and dynamics that underlie these challenging decisions for school boards. This study aimed to address these knowledge gaps through two objectives: 1) to evaluate the scope of public school closures in Ontario, and the nature of the communities in which these closures have occurred; 2) to explore the dynamics of school review processes as employed by two selected public school boards in Ontario. Using GIS, the first objective involved a socio-spatial analysis of the socio-economic and geographic profiles of communities in which school closures have occurred in Ontario since 2010. The second objective was addressed through roughly 25 semi-structured key informant interviews with school board trustees, city councillors, municipal staff members, former teachers, and school advocates, from two school board districts in Ontario.

Our study found that, since 2010, 354 public schools in Ontario were permanently closed. When compared with the locations of open schools, closed schools were more commonly located in small- to

mid-sized cities, as well as rural communities. Closed schools were also more commonly located in communities with high levels of material and social deprivation, relative to the characteristics of communities in which schools remained open. These findings have important equity-related implications for the communities left behind, since their limited resource base and high concentrations of vulnerable populations pose even greater challenges for residents dealing with the loss of these critical public assets. Analyses of the current use of these closed school properties, which is underway, will offer additional context regarding the extent to which these former school sites are serving residents in meaningful ways, as the public schools on these sites once did.

Our key informant interviews revealed a range of complex and competing priorities and interests that underlie the decision-making processes surrounding school closures. Emergent themes from the interviews included a lack of transparency in the boards' decision-making process; an over-reliance on flawed and highly technocratic analyses by external consultants; and a lack of long-term planning in coordination with municipal planning departments. Intensive analyses of these interviews are underway, and the findings will highlight opportunities for enhancement in the school closure decision-making process for public school boards in Ontario.

It is well established within the field of planning that public schools are essential elements of complete and sustainable communities. Thus, the ability of public school boards to unilaterally decide on the fate of these public assets undermines the goals of community planning. More collaborative decision-making processes that meaningfully engage with municipal planners, residents, and other local stakeholders are urgently needed to ensure that complete and sustainable communities are prioritized and protected, in Ontario and elsewhere.

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Key Words: school closures, public asset management, community livability, mixed methods, Ontario, Canada

#THEHOODISNOTFORSALE: COLLECTIVE IDENTITY AND HOOD SOLIDARITY IN THE GENTRIFICATION DEBATE IN BOYLE HEIGHTS AND BEYOND
Abstract ID: 1348
Individual Paper Submission

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The Boyle Heights neighborhood of Los Angeles has become a battleground of intense anti-gentrification activism and resistance against displacement carried out by neighborhood organizations. One group of neighborhood organizations is made up of self-proclaimed radical grassroots organizations who forcefully engage in the gentrification debate with insurgent planning (Miraftab 2009) and high-risk direct action to push their anti-gentrification politics and target gentrifiers (e.g. coffee shops, galleries) online and offline. Their goals lie outside traditional channels of local politics and market driven urban development as they demand direct democracy in urban planning. The insurgent groups even target non-profit neighborhood organizations, claiming that they promote gentrification.

Organizations and activists that engage in high-risk activism and rely primarily on the support of a marginalized grassroots base are typically thought of as being less centralized and struggle for resources compared to their non-profit counterparts who often depend on traditional political structures and elite donors. Such conditions can lead to greater instability, barriers in achieving sustained mobilization, and cause group fragmentation over time. Yet, the ongoing anti-gentrification activism coming from radical grassroots organizations suggests otherwise. They continue to mobilize and foster unity with other like-minded groups within and outside of Boyle Heights around a collective political identity rooted in hood solidarity. This research focuses on the discursive mechanisms used by autonomous grassroots organizations in Boyle Heights to develop a collective identity and strategy against gentrification and the hostile conditions it creates for working-class residents in the city. As demonstrated through this case, symbolic boundaries and frames are used together to articulate a global sense of place for working-class residents (Massey, 1991) and a larger call to action against capitalist urban development that distinctly separates them from others in the neighborhood.

Using Facebook and interview data collected from local activists, this research focuses on the iterative framing processes in developing a collective identity. Such processes help activists interpret the threat of gentrification, construct meaning around threat through networks, and maintain a sharply defined identity. As demonstrated through this case, framing and identity formation occur through activist interactions both online and offline.

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Key Words: Urban Social Movements, Gentrification, Insurgent Planning

PREDICTING BLACK OUTMIGRATION IN THE AMERICAN METROPOLIS
Abstract ID: 1373
Individual Paper Submission

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Scholarly research on municipal population decline has traditionally focused on white flight and its explanations. However, municipal population decline in the US is now explained almost exclusively by a Black population exodus to the suburbs and to the South. While this shift began as early as the 1970s, the press began covering this "great reverse migration" with the release of the 2010 decennial census. Nowhere has this coverage and conversation been more salient than in Chicago, an epicenter of Black population decline. In Chicago, competing "push" explanations have been put forth to explain Black outmigration: cost of living, lack of employment opportunities, crime, schools, and segregation. However, there has been no scholarly attempt to test these explanations; to estimate the causal effect of each of these variables and understand why this exodus is occurring.

This paper seeks to answer the research question: which neighborhood and demographic characteristics are predictive of Black outmigration in Chicago? The paper explores relationships between Black outmigration in Chicago and metrics that include housing market characteristics, small business investment, crime levels, and indicators of segregation and neighborhood change. A series of multivariate regressions are run for the years 2010 to 2015, at the census-tract level, based on the hypothesis that there is a relationship between Black outmigration and these variables. Anticipated findings: based on the

broader literature investigating factors associated with neighborhood change, this study hypothesizes that housing related indicators such as per-capita foreclosure filings, residential segregation levels, and the occurrence of gentrification will most effectively predict going through Black population decline.

Understanding the causes of Black outmigration has intellectual and practical implications. It contributes to our understanding of the motivating factors of migration; and it can inform policy recommendations to jurisdictions experiencing Black population decline.

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Key Words: Black Flight, Segregation, Mobility, Crime, Neighborhood Change

MANAGING WATER RESOURCES IN LA RÉUNION: COMMUNITY RESILIENCE, TERRITORIAL CAPABILITIES AND INSTITUTIONAL ARRANGEMENTS
Abstract ID: 1376
Individual Paper Submission

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The study of collective capabilities shows the extent to which communities, with their specific cultural, political, economic and social systems contribute to freedom expansion or reduction. However the connection between community capabilities and the ecosystems they depend on has attracted less attention from the research community.

This paper describes how different contingencies (e.g. personal heterogeneity or the environment) impact the "territorial capabilities" of communities. Indeed, from a human development perspective, community well-being depends upon expanding capabilities, which depend upon Socio-Ecological Systems (SES) and their contingencies.

Over the 2017-2019 period, participatory action research was carried out in three hilltop villages in the circus of Mafate, in the mountainous heart of La Réunion Island's National Park. Village communities were observed, as well as public and private actors in charge of water appropriation and distribution in the setup of water management projects. In contrast to common practice, these projects recognized the inhabitants as experts and authorizers of the management of the resource.

In situ observations were analysed through the lenses of an SES framework based on Ostrom's institutional arrangements. The results show various phases in the adaptative management cycle of the resource by the stakeholders, which explain the process of continuous change of communities in order to adapt and exist within their SES.

Results show that community territorial capabilities are systematically related to local institutional arrangement processes. The possibilities for reorganization are linked to a "bundle of capabilities" which can translate into operating modes that respond to emergencies and local problems such as resource depletion.

Therefore, the expansion of territorial capabilities is linked to changing institutional arrangements, which

depend upon the appropriation of resources within the SES. In this sense, territorial capabilities correspond to a bundle of collective capabilities that are location-specific and defined by the milieu (SES) in which communities exist.

The combination of two theoretical approaches (capabilities and institutional arrangements) into a single analytical framework offers an integrated vision of human development, including an understanding of how living well and protecting SES equilibria are complementary.

In conclusion, analyzing the "territorial anchoring" of capabilities shows the importance of freedom with respect to environmental policies, the role of communities in the political apparatus, and the impact of cultural rights on the functioning of Socio-Ecological Systems.

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Key Words: community resilience, commons management, territorial capabilities, institutional arrangements, La Réunion

LATINX INSURGENCIES: RESILIENCE THINKING AND PLANNING IN THE CITY OF CHELSEA (MA)
Abstract ID: 1393
Individual Paper Submission

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The City of Chelsea (MA) is one of three cities in the Boston Metro Region (alongside with Lawrence and Holyoke) that are minority-majority occupied as 65.9% of the population is of Latinx heritage, primarily Salvadorian, Honduran and Puerto Rican. In the early 90s, the city went through a phase of high corruptions of public offices leading to the total bankruptcy, a major event coeval with increasing social tensions due to ethnic conflicts, street crime, and demoralized police (Chelsea 2000). This major economic and social upheaval definitely marked the urban history of Chelsea in 1991 when the state of Massachusetts legislature placed the City of Chelsea into receivership. Such a major event prompted the City and its community to engage in a process of re-imagining their future while addressing pervasive conflicts "from below" (at the community level) and "from above" (at the city level). A major milestone was the achievement of the City Charter in 1993 after a long process characterized by an exacerbated ethnic and social conflict, but also unique mediation skills used to reconcile forces from "above" and "below" (Forester 2013, Chapter 8). Lessons learned from this turning moment – still very recent in Chelsea history – are still at the basis of a public city life where non-profit organizations, citizens, and city departments try to maintain a constructive dialectical relationship to address citywide issues.

Today, increased immigration phenomena and the rise of housing prices due to the thriving of the Boston housing market are causing a new wave of upheavals: while the City and local organizations keep trying to work together, residents are struggling to have access to basic essential human needs such as food. In 2018 the Chelsea Hunger Network (CHN) Coalition established a capacity building community/university partnership (Reardon 2006) with the Urban Planning and Community Development (UPCD) Program at UMass Boston. The CHN/UPCD Partnership was born to carry out an action research project designed to generate a community food assessment as background study for the development of a community food security strategy. This research project aimed at answering the following questions: What are the structural causes of food insecurity in Chelsea? What collective efforts are currently under way to address these causes? How community-based planning can acknowledge, support, and expand those existing efforts? Findings show how the community's demand for food security in Chelsea is strictly intertwined

with current formal planning and policy decisions affecting local space, culture, economy, and governance. More specifically, findings are unveiling the more complex struggles faced by the Latinx Community to cope with uncertainty and what practices are currently undertaken to counteract its disruption.

Reflecting on those findings, this paper contributes to two main areas of planning scholarship: (1) resiliency planning (Davoudi and Porter 2012) and (2) Latinx place identity (Irazábal and Farhat 2008). In particular, it conceptualizes a form of resilience "from below" through the exploration of Latinx collective efforts trying to re-orient Chelsea's planning and policy dimensions. The paper concludes with some more general reflections on how contingent upheavals shape community reactions and how these can substantially inform resiliency-planning practices.

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Key Words: Social Resilience, Action Research, Social Upheaval, Latinx

RURAL PHILANTHROPY: A CASE STUDY OF RURAL ENGOS AND CHARITIES IN NEWFOUNDLAND AND LABRADOR
Abstract ID: 1399
Individual Paper Submission

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Philanthropy in rural regions is often considered core social norm, seen in the propensity of individuals and communities to help those who are struggling (Gibson et al., 2014; Barrett & Gibson, 2013; Lorinc, 2019). While the role of philanthropic organizations within community development has been examined within the Canadian context (Gibson et al., 2014; Harrow & Jung, 2016; Jackson, 2004), little research has examined the role of 'charity' as a form of philanthropy, as well as the impacts it can have as a vehicle to address socioeconomic and environmental issues, in rural Atlantic Canada and within Newfoundland and Labrador (NL) more specifically. NL's economy has been, and remains largely reliant on natural resource extraction and the associated boom/bust cycles reduces organizations' and communities' ability to provide services or expand the scope of their social and environmental justice work (Gamble, 2014; Tomblin, 2002). Furthermore, NL has the highest charitable donor rate, and highest sense of belonging to their province and local community in Canada (Turcotte, 2015; Statistics Canada, 2015), and NL offers opportunities for philanthropic growth (Barrett & Gibson, 2013). The goal of this research paper is to contribute to the discourse on philanthropy in rural Canada and will be addressed in four objectives: (1) to map existing patterns within the landscape of philanthropy in NL; (2) to examine the nascent nature of philanthropy in the environmental sectors of NL and Atlantic Canada; (3) to examine the suitability of obtaining charitable designations for small, rural (E)NGOs.

This project, informed by grounded theory and a qualitative research approach, will explore its research objectives through: (1) a literature review and jurisdictional scan of Canadian philanthropy/rural philanthropy and; (2) a review and analysis of secondary data from the Canada Revenue Agency to measure who gives/receives within NL and Atlantic Canada.

Findings from this study may increase the presence, scope and impact of social and environmental charities in NL, enhancing relationships between governments, communities and grant-making organizations and their ability to influence the creation of good public policy and environmental stewardship in NL and Atlantic Canada.

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Key Words: Rural planning and development, Rural philanthropy, Environmental non-governmental organizations, Rural giving

SO LONG CHARITY! PHILANTHROPIC LENDING TO CDCS REBUILDING HISTORICALLY BLACK NEIGHBORHOODS POST-DISASTERS
Abstract ID: 1405
Individual Paper Submission

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After Hurricane Katrina hit the Gulf Coast in August 2005, philanthropic capital and capacity flooded the region, reshaping not only the Charity Hospital campus and Daughters of Charity medical system but also the investment practices of community foundations and public trusts that previously supported residential stabilization and commercial revitalization. Yet, planning scholarship on disaster-affected places has yet to analyze how philanthropy--from individual gifts and institutional grants to impact investing and lending--affects the rebuilding of neighborhoods and redevelopment of commercial corridors. This paper, which draws from the author's mixed-methods, multi-case study of foundations' grantmaking and lending after disasters, reveals the rebuilding of New Orleans's historically Black neighborhoods depended on construction loan guarantees from community foundations as much as government land grants.

This case study of precarity and privilege among neighborhood preservationists builds on community development literature concerned with philanthropic power over neighborhood preservation capacity (BondGraham 2011; Harrow, Jung and Phillips 2016; Lowe 2004) but is modeled after studies of historic tax credits in economically depressed commercial areas (Ryberg-Webster and Kinahan 2014; Kinahan

2019). The latter, which assess the geographical and social equity of federal rehabilitation tax credits, demonstrate this financial instrument of historic preservation and commercial revitalization presumes developers of depressed Main Streets accumulate tax-liability. Yet, tax-exempt nonprofit developers such as CDCs and local redevelopment authorities are often the only agents of commercial revitalization in disinvested corridors and communities, especially after a disaster (Johnson 2011). Similarly, the author argues philanthropic program officers' low-interest loans to CDCs —one of several market strategies by which these grantmakers generate revenue from their grantees—can discount and even double-down on distrust in local Black stewardship of public land and private capital. Assessing development finance and outcomes via interviews, document reviews, and participant observation with Pontchartrain Park CDC and its underwriters, the paper illuminates lending foundations have become not only fixes for acute destruction of New Orleans's built environment but also fixtures of chronic disinvestment in historically Black communities of urban America.

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Key Words: disaster recovery, housing recovery, community foundations, impact investing, financial crisis

REBUILDING THE LOST PUBLICITY: THREE CASE STUDIES OF URBAN REGENERATION IN SHANGHAI
Abstract ID: 1408
Individual Paper Submission

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In recent years, Shanghai has entered an era of stocking regeneration. Shanghai Master Plan 2017-2035 plans to achieve a negative growth of construction land in the future. In the era of the stock economy, community development has begun to pay more attention to the coexistence of cultural diversity, spatial inequality, and lack of justice and publicity brought about by social stratification. Besides capital and power, a third force known as non-governmental initiating, a kind of grassroots power, has started to participate in urban space production and create inclusive space by community place making. Applying the methods and approaches of architecture, urban planning, sociology and anthropology, this paper selects three urban practice cases we participated in to illustrate NPO in China trying to achieve sharing of public space, realize equity and justice of social space and rebuilding of urban publicity by breaking boundaries and enhancing social cohesion with multi-participation.

Firstly, KIC garden, operated by Clover Nature School (NPO), integrated community residents of different incomes, household registration, birth places, occupations, education and living conditions to realize the connection of space，eliminate inequality among groups and promote social integration by breaking the walls between old and new communities with multi-participation of the government, local citizens, academic and social powers.

Secondly, the gatehouse of Xinfeng village, full of private express packages, was supposed to be the public space and community information transmission. In 2019, a micro-neighborhood-space, revitalized from the former gatehouse by Big Fish (local NPO), broke the former boundaries between public and private areas, rebuilt publicity and justice of community space and enabled citizens to regain community identity while strengthening a sense of unity by holding photo exhibitions and reconnecting community history.

Thirdly, at the beginning of 2019, Daxue Road in Shanghai experienced a mandatory fire prevention rectification led by the government, which has led to mass retreat of the creative merchants and the gradual disappearing of vitality. The reason for the fire prevention rectification was that the upstairs merchants changed the original function of living and office to commercial, causing the original residents' complaints to local government. Happening Store on Daxue road, an open, inclusive, and non-profit Third Space operated by local KOL, cooperated by media, invested by developer, realized a connection of society by breaking boundaries between commercial space and residential area and encouraging local merchants, residents, staff and students to initiate activities spontaneously to redefine the authenticity of the mixed block and promote equity and justice of public space.

In conclusion, there was no absolutely grassroots-power-led urban space practice in Shanghai. The model, initiated by social organizations, empowered by local government, and cooperated by multi-stakeholders, is helpful for the flexible allocation of social resources and the growth of humanized urban space. People's inner connection takes much longer time to achieve than physical connection. It requires breaking the boundaries of disciplines, promoting an awakening of public consciousness, encouraging a multi-connection based on local NPO/ NGO, and establishing a sustainable local empowerment system.

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Key Words: publicity, community place making, equity, justice, social integration

TRACK 2 – POSTER ABSTRACTS

"RENTIFY CHINATOWN" - DIGITAL TOOLS FOR EXPLORING THE SENSE OF BELONGINGNESS IN BOSTON CHINATOWN
Abstract ID: 206
Poster

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Boston Chinatown is reshaped by the influx of luxury residential developments, institutional expansions, and short-term vacation rental models such as Airbnb. Not only does the increasing rent burden the low-

income immigrant residents, but it also gentrifies the local retails, restaurants, and grocery stores, which dilutes the identity of Chinatown as a cultural harbor for its community. This research introduces and reviews the work done by our Boston-based research initiative, Rentify Chinatown, which leverages the joint power of digital tools, data analytics, and in-depth interviews to document and explain place-based identity for the low-income community of Boston Chinatown.

As part of this research, the Rentify Chinatown research team created a shared database of quantitative and qualitative data for Boston Chinatown community organizations, including Chinatown Community Land Trust (CCLT), Chinatown Progressive Association (CPA), and Alliance of Downtown Community Organization (ADCO). Combining the big data including housing price, inventory of ongoing development, change of building ownership, local demographic with micro-data featuring granular, individual inputs of local narratives through online and offline engagement, we present a conflict between a culturally rich local community with the ongoing trend of development. Our work complements the current Boston Chinatown master planning schemes from the perspective of individual experience and highlight the importance of maintaining local culture as it contributes to the overall diversity of Boston Downtown districts. With the construction of an organized database and an engaged documenting process, Rentify Chinatown devotes the efforts in paving an avenue for future work that will further strengthen the sense of belonging for vulnerable communities.

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Key Words: engagement, digital, data, collaboration

THE INSTITUTIONAL DILEMMA OF URBAN REGENERATION IN CHINA: A CASE STUDY OF THE URBAN REDEVELOPMENT PROJECTS IN SHANGHAI OLD TOWN
Abstract ID: 1025
Poster

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In recent years, planning scholars in China have been advocating for new urban regeneration approaches. However, existing urban regeneration practices that generated from the country's social and institutional context still dominate most Chinese cities. Urban regeneration is traditionally implemented in two ways, the first is "demolition-reconstruction", by tearing down old houses to make room for new development. This approach achieves stated urban renewal goals at the expense of the loss of historical areas and the gentrification of the community. The second is "frozen protection", namely, designating no-growth areas around certain historical sites and neighborhoods. This approach has the potential to retain the recognized cultural values of specific urban areas, but has also deprived the communities of the opportunity of upgrading their facilities and improving their deteriorating built environment. This study selects the Shanghai Old Town as a case to discuss the institutional factors of urban regeneration dilemmas in Shanghai.

Shanghai Old Town (Lao Chengxiang) used to be the city center of Shanghai, and is now one of the city's

municipal-level historic and cultural areas in downtown. The city government has been attempting to promote regeneration projects in this area. Residents are also eager to improve their living environment. However, the two types of regeneration methods (phenomenon) mentioned above have been implemented repeatedly in this area for a long time, resulting in a fragmented and collaged built environment. Social organizations and scholars have engaged in the discussions of developing new urban regeneration approaches in this area that achieves both objectives of historic preservation and urban renovation. This study attempts to analyze the causes of the traditional urban regeneration approaches from the perspective of the institutional context. Specifically, this study explores two research questions: what are the institutional factors that have determined and sustained the traditional regeneration methods? What institutional factors prevent the new regeneration approaches from being implemented?

This study argues that urban regeneration is a collective social activity. It adopts sociological institutionalist methods to analyze regeneration activities from the dimensions of the institutional framework, main actors, dynamic structures, and mechanisms. We builds our analytical framework on the empirical evidence of the redevelopment projects in Shanghai Old Town, and conducts a theoretical analysis surrounding the two research questions. Our research suggests that path dependence significantly influences Shanghai's urban regeneration process. Existing land management methods, urban development models, plan-making and implementation mechanisms, and social governance models determine and shape the urban regeneration dilemmas. The successful transformation of urban regeneration strategies in China requires both institutional and technical innovation.

This study attempts to propose a new analytical framework for understanding the urban regeneration in Shanghai, and provided new evidence on the institutional dilemma of urban regeneration in Chinese cities. At the same time, this study contributes to urban regeneration theory through the discussions on the dominant discourse, technical instruments, and the interaction of actors in urban regeneration and the transformation of urban generation strategies.

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Key Words: Regeneration, Institutional Analysis, Models, Dilemma, Shanghai Old Town

CREATING AN ADAPTIVE REUSE PLAN FOR THE HISTORIC STEPWELLS OF HYDERABAD, INDIA
Abstract ID: 1061
Poster

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Stepwells are subterranean rock-cut structures used to supply communities with water in all seasons. They have a unique architectural style that is found only in India and they are the traditional means for harvesting water. These wells first came into use in the early sixth century, and were two to nine stories deep, with pavilions, chambers, and corridors connecting them. Indian royal families would typically commission the construction of the well monuments to serve the community. Women significantly used

stepwells to fetch the water for household purposes. Due to modernization, hand pumps and taps replaced stepwells to supply water. Out of thousands of stepwells in existence, only a handful have been adequately preserved and many have been filled in or left abandoned since the primary utility of these architectural monuments was no longer needed.

The history of stepwells is not well documented in India. There are very few resources or books about them. Most stepwells have pre-colonial history, and they still have significant value to the people who resided in areas around them. They were built for patrons and patronesses to serve as asylums, gathering places, and spiritual centers. Some of the stepwells were also used to serve the community and provide a counterbalance to the extreme famine conditions by serving the harvested rainwater and ground water for irrigation purposes. Stepwells were sited in neighborhoods as well as along important trade routes, available for use by the whole community and by traders a place for rest.

The literature review for this research details the history of stepwells in India, as well as its style, function, and characteristics. Historical research about stepwells and their function was synthesized through the literature review of the books: Steps to Water by Morna Livingston, The Stepwells of Gujarat by Jutta Jain, Her Space Her Story by Purnima Bhatt and Vanishing Stepwells of India by Victoria Lautman.

This study aims to aid the preservation of these stepwells by identifying community-based, adaptive reuse options to revitalize these astonishing structures. Alternative use options with some interventions are submitted for two stepwells selected based upon their historical significance. Precedents like Stepwell Square in Jodhpur and a local level comparative study of five Global Heritage Fund restoration projects in Rajasthan are identified to discern common threads. These stepwells were restored with help from the local community and came to be reused as civic spaces, providing community facilities and public health utilities. Examining these precedents helps to shed light on the appropriate preservation approach for the stepwells. Finally, recommendations were developed using a values-based preservation approach. In terms of Social Value, the stepwells contribute to the authenticity of the place, which is important to the community's connection to it.

Traditional rituals and routine household chores linked women intimately with the stepwell. Stepwells were often referred to as women spaces as they not only provided water yearlong but also served as a gathering place for the women. The stepwell was the place where women could socialize in the same way men used village squares to socialize (Chowk). In some villages and the countryside in India, it is still common for women to gather at water sources.

Restoring stepwells as historical monuments is essential for the conservation of India's heritage. Providing them with new uses has the potential to reinvigorate the social and economic life of the communities. In general, to develop stepwells across India, place-making strategies can be adopted. Instead of creating a new place for the public, these sites can be used as plazas or public squares. Stepwells can be transformed into "Indian Piazzas."

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Key Words: international development planning, gender & diversity in planning, economic development

PLANNING AND RESIDENTIAL GROWTH PATTERNS IN THE MID-SIZE CANADIAN CITY
Abstract ID: 1165
Poster

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Smart Growth is a well-established planning policy framework to facilitate more sustainable development in Canadian cities. One of the core principles of the movement is the call for greater levels of intensification to direct development towards existing urbanized areas, while reducing development pressures on open space at the periphery and urban sprawl. Planning for more compact communities has become the normative approach advocated by planning professionals and scholars, however the status quo of low-density development on the periphery continues to perpetuate (Curic and Bunting, 2006, 206; Brewer and Grant, 2015). These patterns of growth are typical of the mid- size Canadian city which is noted for its low-density, high rates of dispersion/decentralization, auto-dependency, poor transit service, and stagnant growth in the core (Filion et al., 2004; Bunting et al., 2007).

In the context of eight mid-size Canadian cities, this research explores the shift to intensification as a Smart Growth strategy reflected in municipal policies and plans and long-term plans (Filion et al., 2015). The research develops a conceptual framework, which draws on the political market model and the public choice model to explain adoption of certain policies by municipalities emphasizing the impact of institutional factors on planning policy outcomes (Levesque, 2017). An important component of the conceptual framework is content analysis of municipal plans with a focus on intensification strategies, targets, monitoring & evaluation instruments. Our findings from the comparative analysis of eight conceptually appropriate case studies suggest that the commitment to intensification depends on fiscal resources, the capacity of planners, their responsiveness to development interests and the commitment to growth management by provincial governments. We argue that there is a significant gap in the implementation process.

This research contributes to the limited empirical evidence on planning and growth management strategies in mid-sized Canadian cities.

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Key Words: growth, management, planning, residential, cities

CO-DESIGNING DISASTER RISK REDUCTION IN THE PLANNING AND DESIGN OF RESILIENCE HUBS IN OCEANIA
Abstract ID: 1288
Poster

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Low-lying Pacific Atoll nations like the Republic of the Marshall Islands (RMI), face increased vulnerability to climate change risks, such as flooding, drought, and typhoons. These environmental risks are compounded by broader social issues, such as lack of access to education and expertise, which are needed to increase civic capacity and climate resilience. Environmental risks and social issues are compounded in the built environment, where development often ignores them, and is built without input from community stakeholders. These develop processes also disregard input from Indigenous knowledge. Continental American mindsets have privileged western notions of development in the Marshall Islands – further inducing settler-colonial structures. As new development is built, resilience strategies must be integrated during the design process. Two known methods for utilization are: (1) Community-Based Disaster Risk Reduction (CBDRR) -- providing a method for assessing risk, building capacity, and assisting in climate change adaptation -- and (2) Participatory Design -- which brings the community into the design process. While these methods are known, examples combining CBDRR and Participatory Design are few. In Pacific Atolls, where action is imperative, there are fewer.

This project aims to leverage the real-world design of a K-12 school to provide a case study in the integration of CBDRR and Participatory Design that will help build a framework for other such projects in communities facing similar challenges across the globe. Through the participatory process the aim is to include Indigenous methods within the design and development process and prioritize Indigenous knowledge within the frameworks developed. Indigenous community members will be assisting within the research methodology. Integration of CBDRR into school design is uncommon, yet the school (located in Laura, RMI and about to begin design), provides an unusually ideal medium for this research, since its components (educational platform, community-hub, and use as a disaster shelter) provide traits central to CBDRR's success. This project, as alluded to, allows for the centering of indigenous frameworks within the design and development of resilience hubs in the Marshall Islands.

Our main research questions are: (1) How can Community-Based Disaster Risk Management be integrated within the master planning and design of a K-12 school? (2) How can Community-Based, Participatory-Design processes improve community agency in Disaster Risk Reduction? (3) How can a partnership between private enterprise (architect, planner), academic institution, and community organizations (school, municipality, non-profit) work together to accomplish these goals?

The exploration and analysis will build a framework to (1) assist community stakeholders to develop sustainable and resilient land use strategies; (2) illustrate community based best practices for development; (3) promote the applications of sustainable local resources and local knowledge, more specifically local Indigenous knowledge, in building design and development. These approaches will be applicable to the specific community of Laura, Majuro, RMI; and more broadly, to vulnerable coastal communities facing similar issues, such as the Northern Inuit communities of Canada.

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Key Words: Climate Change Adaptation, community based, disaster risk reduction, resilience hub

ACCESSIBILITY TO GREENWAYS AMONG DIFFERENT RACIAL GROUPS
Abstract ID: 1330
Poster

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Urban greenways are part of the green spaces in urban areas for peoples' physical and mental health. In order to study the racial equity of accessing greenways in urban areas, this study addresses the issue of whether the areas per person within the effective influence range of greenways are equal among difference races and therefore create an equal accessibility for people with different ethnicities. The effective influence range is defined as the 10-minite walk buffer of the greenway, which is one kilometer. In this study, the results not only include the general areas per person within the effective influence range of greenways for people with different ethnicities, but also include the areas per person within the effective influence range of prime greenways which have broader paths and bigger vegetation areas than average greenways or of those where are waterfront.

In this study, a case study in the city Columbus, OH was used to investigate the research question. Columbus has 54.3% white people, 29% black people and 6.13% Asian people. Geographic Information System (GIS) was utilized at the 2010 census block groups and the greenway trails for calculating the aforementioned areas. One-kilometer buffers were created first and the number of residents of one block was calculated by multiplying the whole number of people of a specific race and its ratio which is the proportion of areas covered by the effective influence range of greenways to the areas of this block. In addition, the prime greenways were selected out to conduct the calculation further.

This study is still in progress since the greenways in the city are designed differently according to the design guidelines. However, according to the previous studies, I assume that there would be a difference among different races on the areas per person within the effective influence range of greenways.

The implications of my work to planning practice would provide urban planners and policy makers a notice to pay attention to the equal accessibility to urban greenways among different racial groups when it comes to designing new greenways and managing the existing greenway systems.

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Key Words: Greenways, Race, GIS, Areas per person

TRACK 3 – ECONOMIC DEVELOPMENT

TRACK 3 - PRE-ORGANIZED SESSION SUMMARY & ABSTRACTS FOR THE SESSION

NEW DIRECTIONS IN WORKFORCE DEVELOPMENT AND THE FUTURE OF WORK
Pre-Organized Session 62 - Summary
Session Includes 346, 347, 348, 349, 350

RENSKI, Henry [University of Massachusetts Amherst] hrenski@larp.umass.edu, organizer

This session includes a variety of papers exploring the connections between skills and innovation, technology and work, new models for training and talent development, community and economic development and workforce opportunity, and climate and work – among other topics.

Objectives:

- Workforce development strategies
- Technological trends and its impact on labor demand and skills

HOW MANY TRUCK DRIVING JOBS WILL AUTONOMOUS VEHICLE ELIMINATE? AND ARE WE PREPARED?
Abstract ID: 346
Abstract within Pre-Organized Session 62

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Research Question: This paper will answer two questions: 1) How many truck driving jobs will be eliminated by the adoption of autonomous vehicles (AVs) in the United States, and how much variation is there across geography? 2) How well prepared are planners for this upcoming change in the labor market?

Background: The wide-spread adoption of AVs appears inevitable in the near future, yet our understanding of their influence on the labor market is limited. Most prior research has focused on AV technology and the impact of AV on traffic flows (Childress et al., 2015), but ignored its impact on job displacement. A few recent reports have estimated the total number of trucking jobs subject to elimination at the national level (Groshen et al., 2018), while the geographical variations have not been fully explored. However, different regions vary in their pace of adoption, concentration of trucking jobs, and level of policy preparedness. These differences are unlikely to be uniformly absorbed across (regional) labor markets, and workers in certain regions will experience employment hardship more than others. Thus, this paper aims to differentiate the degree to which regions will be impacted by AV, and how well prepared planners are to combat the upcoming change in their labor markets.

Methodology: This paper contains two parts. The first predicts the number of trucking jobs subject to elimination across metropolitan areas. Building on Groshen et al. (2018), I developed a series of AV adoption scenarios and allowed the pace of adoption to vary across geography. These scenarios were then applied to CBSAs combined with the spatial distribution of trucking jobs to predict the magnitudes of job

elimination induced by AV.

The second part analyzes the policy preparation for AV across geography. I collected long-range transportation plans (LRTPs) in metropolitan planning organizations (MPOs) and comprehensive economic development strategies (CEDSes) in economic development districts (EDDs). Following the methodology of Freemark et al. (2019), I searched for keywords and contents related to AV and automation, and conducted a content analysis to examine what AV-related issues have been discussed in these plans.

Putting the two parts together, a spatial analysis is conducted to explore whether the regions expected to be more seriously impacted are also better prepared. A list of "best practices" will be formulated based on the existing plans to help guide regions forward.

Findings: Preliminary results show that the adoption of AV threatens 1.2 to 1.4 million truck driving jobs by 2035, and 1.8 to 2 million by 2050 in the United States. The most affected metropolitan areas are Atlanta-Sandy Springs-Roswell, GA, Charlotte-Concord-Gastonia, NC-SC and Riverside-San Bernardino-Ontario, CA. Only one-third MPOs have mentioned AV in their LRTPs, and about 20% of EDDs mentioned AV or automation in CEDSes. The spatial correlation between policy preparation and expected job loss is minimal: none existent for CEDSes, and correlated with a 0.1 correlation coefficient for LRTPs. This is an alarming sign of under-preparation for the upcoming change; planners have a lot to do in order to prepare US workers for an automated future.

Relevance: The adoption of AV is expected to exhibit significant impacts on the future of human labor. This paper estimates the magnitudes of such impacts on trucking drivers, and how these impacts unfold across geography. The estimated magnitudes can be used to target the most impacted regions and pace the formulation of AI-related regulations and policies. In addition, this paper also identifies a list of "best practices" in existing plans, which can serve as a starting point for planners to move forward in their preparation for AV.

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Key Words: autonomous vehicle, trucking job, policy preparation

UNDERSTANDING STATE VARIATIONS IN NON-DEGREE PROFESSIONAL CREDENTIALS
Abstract ID: 347
Abstract within Pre-Organized Session 62

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Non-degree credentials, such as professional certifications, have garnered considerable interest in recent years as an alternative pathway to demonstrate job-ready skills, especially among those with lower levels of formal education. Non-degree credentials can be less expensive, quicker to obtain, and more effective at imparting specific skill sets than traditional degree programs. Many see this as a particularly attractive

option for an anticipated future of rapidly changing workplace technologies and contingent work arrangements. Attainment of non-degree credentials is also associated with positive employment outcomes and higher earnings, and often act as a compliment to more traditional forms of higher educational attainment.

We use newly added measures of professional certifications in the Current Population Survey (CPS) to examine why some states have higher certification rates and related wage premiums than others. We use multi-level modeling techniques to a document the influence of occupation/industry mix, individual endowments, and metropolitan size as possible sources of cross-state variation. By examining differences across states in attainment rates and premiums, we hope to inform strategies aimed at expanding coverage and employer confidence in professional certifications as valid credentials.

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Key Words: Workforce, Skills, Certifications, Education

UNEVEN ROBOTICS DIFFUSION: IMPLICATIONS FOR SMALL/MEDIUM MANUFACTURERS AND FEMALE AND MINORITY WORKERS
Abstract ID: 348
Abstract within Pre-Organized Session 62

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While the development of robotics and AI technology is rapidly progressing, the diffusion of these technologies has been uneven and relatively slow. Robotics adoption has been greatest in manufacturing, concentrated in the automotive sector, and almost exclusively of traditional industrial robots. Small and medium size manufacturers have been much slower to adopt robots. The development of collaborative robots (co-robots) holds the promise of much higher levels of adoption across the manufacturing sector, and in particular, small- and medium-sized manufacturers (SMMs). Manufacturing is an important source of jobs for women (30% of workers) and minorities (34% of workers). However, they are concentrated in lower paying occupations that are less likely to require STEM skills, and vulnerable to displacement from automation and robotics. The introduction of collaborative robots shifts traditional manufacturing into the advanced manufacturing category, generally defined as using innovative technology to improve products or processes. This paper explores the potential for up-skilling and moving into middle skill and wage jobs without having college level STEM skills when women and minority workers use collaborative robots in their manufacturing firms.

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Key Words: women and minority workers, manufacturing, robotics diffusion

RECOVERY FUNDING, BUSINESS RELOCATION, AND THE IMPACT ON FUTURE EMPLOYMENT ACCESS
Abstract ID: 349
Abstract within Pre-Organized Session 62

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The economic effects of a disaster are not uniform across space, therefore the ability for businesses to adapt to changing populations, demands, and labor pools after a disaster may make the difference in their survival. However, encouraging businesses to move as an adaptation strategy may have consequences for future employment access, particularly for socially vulnerable populations in hazardous areas that may not have the means to be as mobile. To complicate this issue, Federal disaster spending has been increasing in the last several decades due to more frequent hazard events and an increase in the federal share as outlined by the Stafford Act; because disaster assistance often takes the form of loans, it is possible that the disbursement of these funds impacts residential and business mobility decisions either through additional debt burden or supplemental financing streams.

This research, therefore, seeks to understand the relationship between federal disaster assistance, business and residential adaptive strategies, and its consequence for future employment access. Using parcel data and data from Freedom of Information Act requests to the U.S. Small Business Administration, we explore the relationship between recovery funding and the mobility decisions of businesses and residents after Hurricanes Ike and Harvey in Galveston County, Texas. We investigate whether federal recovery funds serve as hindrance or catalyst to post-disaster adaptation in the form of moving out of hazardous areas. We explore if businesses and households differ in this regard, as well; although businesses may see moving as a strategic decision, household decisions may be complicated by other factors outside of market indicators. We discuss the consequences of this research on long-term development patterns, namely the distribution of businesses in relation to households and economic opportunity considering social, economic and physical vulnerability.

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Key Words: Climate adaptation, Economic adjustment, Recovery funding, Business relocation

OPEN KNOWLEDGE NETWORK FOR SPATIAL DECISION SUPPORT TOWARDS URBAN SUSTAINABILITY

Abstract ID: 350
Abstract within Pre-Organized Session 62

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The proliferation of online data and mapping technologies has greatly increased access to and utility of spatial decision support (SDS) systems in a wide range of application domains in urban sustainability (Gorsevski et al., 2013). SDS combine data, tools, models, and maps within a user interface to help people, often representing diverse stakeholder groups, make scientifically-based, data-informed decisions (Ye, 2010).

Despite these successful applications, SDS contributions are limited by challenges in integrating information across complex organizational networks and across an array of tools developed for narrow (often disciplinary) applications (Nyerges et al., 2014). A basic challenge is that SDS researchers and professionals lack structured ways to locate and interrelate existing data, models, visualization tools, and workflows. This need is becoming ever more challenging as the volume, velocity, and variety of available data and tools increases substantially. A second challenge is with the ability to share and co-develop the more fundamental building blocks of these data and tools, including conceptual, methodological and applied data objects. Third, decision support activities must involve diverse knowledge perspectives broadly, deeply, and flexibly, but participatory mechanisms for decision support remain immature.

In order to lay the groundwork for broader open knowledge network (OKN) development, we will focus on building the semantic structures and tools needed to support Open knowledge network (OKN) development focusing on SDS (OKN-SDS) for urban sustainability. OKN development relies heavily on creating ontological structures to enable machine reading and reasoning of networked information, and we will test the effectiveness of participatory and machine learning approaches to assembling these ontologies, using wildland fire, water quality, and biodiversity conservation as the case studies.

Three domain-specific case studies will build on participatory GIS and ontology development work through engagement of problem-focused stakeholder networks. At the same time, the utility of automated tools for resource discovery, ontology development, and social network analysis will be tested in these real-world problem environments for urban sustainability. Through integration and comparison of these techniques, we will deliver insights into efficient and effective methods for OKN development.

SDS-OKN will address each of those three challenges using a multi- and cross-disciplinary approach. There are three advantages of using OKN-SDS as a seed for contributing to the broader OKN development: 1) it embraces geographic space as a natural integrator between disciplines, 2) it is use-inspired and action-oriented towards supporting important societal decisions, and 3) SDSS are already designed to operate at the human-computer interface. Hence, SDS-OKN will dramatically enhance organizational opportunities for developing use-inspired and knowledge-based spatial decision support applications towards urban sustainability. For example, diverse stakeholder will be able to address challenges with managing wildfire and forest fuels, such as those conditions which led to the Camp Fire in California, the deadliest and most destructive wildfire in California history. The Puget Sound Partnership, composed of 750+ organizations working on the monitoring, cleanup, and recovery of Puget Sound ecosystem, will have access to digital resources that could reduce some of the costs, which in 2017 were estimated at $500+ billion over the coming decades. Scholars and policy makers on biodiversity conservation will advance planning techniques needed to maintain services that healthy ecosystems provide humans, such as food, clean water, and cultural services. Synthesizing outcomes from these examples will demonstrate how combining different disciplines and aspects of an overarching problem in urban sustainability can be accomplished through OKN technologies.

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Key Words: open knowledge network, spatial decision support, urban sustainability, convergence research

TRACK 3 - ROUNDTABLES

CLIMATE CHANGE AND THE FUTURE OF WORK
Abstract ID: 155
Roundtable

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ISKANDER, Natasha [New York University] natasha.iskander@nyu.edu, moderator
TEWARI, Meenu [University of North Carolina at Chapel Hill] mtewari@unc.edu, participant
LOWE, Nichola [University of North Carolina at Chapel Hill] nlowe@unc.edu, participant

Climate warming is the fundamental challenge of our time, not only because it will radically transform our natural environment, but also because it will redefine jobs and livelihoods. This roundtable discussion will bring together labor and urban planning scholars who are critically exploring the intersection of climate change and the future of work. Panelists will focus their comments on a set of questions that reflect on uncertain employment future in our rapidly changing environment.

The goal of this session is to move beyond overly stylized, hopeful narratives of 'green' job creation to consider the multifaceted challenges that workers and their employing industries will face due to climate change pressures. The panel will explore what climate threats to livelihood and economic stability will mean for policy coordination and advocacy, at both the local and global levels.

Panelists will address the following questions:

- What do we really know about green jobs? Are they the antidote to inequality, or sources of inequality themselves?
- What are the obligations of a "just transition"? To what extent must fossil fuel dependent workers and communities be made whole?
- In what way do climate change pressures shape conditions for workers at the worksite, either directly or indirectly, by influencing the ways that industries have moved to restructure their systems of production in response to global warming?
- How are firms' efforts to respond to the effects of a changing climate (rising temperatures, precipitation) on firm productivity and performance touching down on differently situated workers within the firm's supply chain? How are they reshaping work processes and work environments and how are workers' responses, in turn, foregrounding the connections between sites of production and sites of social reproduction in coping with the pressures of climate change.
- With climate change exacerbating inequities, should we limit our focus to work and employment?

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Key Words: climate change, work, just transition, green jobs, inequality

URBAN DATA SCIENCE IN ECONOMIC DEVELOPMENT RESEARCH AND TEACHING
Abstract ID: 242
Roundtable

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With the rapid advancement of data science methods, the use of urban data science in planning research has been on the rise (Schweitzer, 2014; Zook, & Graham, 2007). Economic development researchers are relatively slow adopters of these new techniques compared to planning's other subdisciplines, particularly transportation. This roundtable invites scholars with experiences of using data science in economic development research and/or teaching to share their perspectives on what advancements data science has brought, and can bring, into the field of economic development, and what challenges exist in using data science to address economic development issues.

Additionally, panelists will reflect on how they have taught data science in their economic development classes, what challenges they have to overcome, and how we can effectively equip students with the increasingly necessary data science skills both public and private employers demand.

Specifically, in the spirit of the theme of this year's conference, the panelists will discuss distinctive challenges for female scholars (Cheryan, Master, Meltzoff, 2015), African American scholars (Rankin, Thomas, Brown, & Hatley, 2013) and other minorities to develop coding skills and enter the field of data science. The female and African American scholars on the panel will share their stories, and the panel will discuss ways to overcome stereotype and create equal opportunities for all.

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Key Words: Data Science, Economic Development Research, Economic Development Pedagogy, Diversity

COVID-19 AND NATIONAL, STATE AND LOCAL RESPONSES TO HELP VULNERABLE POPULATION, INDUSTRY, AND REGIONS
Abstract ID: 515
Roundtable

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NAMIN, Sima [Medical College of Wisconsin] sima12898@yahoo.com, participant

COVID-19 has spread rapidly from mobile populations to local communities throughout the world. With a delayed development of the vaccine and the less known routes of contagion, this highly contagious virus slips through the crack of cutting-edge science, technology, big data, and medical systems. Many countries have imposed social distancing and lock-down orders to prevent further spread of the virus. While these measures seem to work slowly, it is uncertain how long they should continue and how it will affect the local, national, and global economy. In the midst, it is evident that the situation will continue to affect vulnerable population, industry, and regions, and it will take years to unfold.

Although many local and national governments around the world keep on fighting to get ahead of the epidemic and provide stimulus packages, these efforts seem to have limited impact. Unless the epidemic dies out, it will be like a water tank with a sinkhole in it. As such, due to the complexity and variability of the economic impact of COVID-19, the response to mitigate the local economic downturn has to be a more systematic organization of resources instead of solely relying on compartmentalized economic development strategies.

This round table will shed light on the different cases and models of the systemic organization of local resources such as science, technology, data, public services, and industry. We will provide a comparative perspective with cases from South Korea, Puerto Rico, Hawaii, Ohio, and Wisconsin. We will primarily discuss 1) what policy measures were employed to reduce the socio-economic consequences of the disease and how they worked; and 2) what need to be done to prepare better systematic ways of local-level response to unknown 'manufactured risks' to come in the future.

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Key Words: Epidemics and social insecurity, Risk management, Innovative policy and social responses, Inclusive planning

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TRACK 3 INDIVIDUAL ABSTRACTS

THE ONLINE MARKETPLACE: A ZERO-ORDER CITY?
Abstract ID: 72
Individual Paper Submission

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Past studies on the drivers of online shopping have focused predominantly on demographic variables like age, race, and ethnicity (Zhou and Wang 2014). Other studies have attempted to quantify the utility gains to consumers (if any) from shopping online. Dolfen et al. (2019) drew upon both approaches, and transaction-level credit card data, to estimate the utility gains distinctly provided by online shopping, and in so doing produced the first national county-level estimates of online purchases as a percentage of consumer expenditures.

This paper integrates this prior research on the demographic and economic drivers of online shopping with classical retail location theories to understand how the forces of income and geography interact to motivate engagement in the online marketplace. Using the language of Central Place Theory, online retail might function as a zero-order city: one that carries the most diverse assortment of goods and that can be visited from virtually anywhere. By this logic, rural households would engage most zealously with the online market, due to the larger variety gains possible for those consumers. This effect, however, is hypothesized to be variable, because although transportation costs are ubiquitous, they are realized differently (in time versus money) depending upon both location and income. By parsing the roles of income and remoteness, the paper develops a spatial retail development theory for the online marketplace.

The model includes four groups of independent variables: controls, income variables, measures of remoteness, and the marginal utility of a dollar with respect to time (a ratio of the shipping cost per mile for goods, by income quantile). The results show income and remoteness relating to online shopping in the expected ways, but the interaction effects were surprising. In our model, lower-income counties have the smallest elasticity between propensity to shop online and the cost per mile of shipping charges, while higher-income counties have the largest elasticity. We hypothesized the opposite: that households in lower-income counties would be more likely to "spend" time by driving to brick and mortar stores given higher shipping charges, while households in higher income counties would value the time savings of online shopping with less regard to the cost of shipping. We hypothesize that our findings may result principally from geography. Low-income areas were almost entirely remote, perhaps shying away from online shopping due to the relatively larger sunk costs of travel necessary for other shopping, whereas even remote areas of higher income areas were relatively closer to brick and mortar stores, making online and in-person shopping substitutions more sensitive to price changes.

We conclude that the online marketplace is not a zero-order city. Instead, it appears to largely re-institute the rules of spatial markets. Planners can use these results to anticipate where brick and mortar retail development will shift to online, thus lowering the demand for floor space. Future research should focus on the interactions of luxury goods' price elasticity and online shopping, and the mechanisms at play in counties with household incomes modally near the national median.

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Key Words: online shopping, retail development, regional development, consumer surplus, demographics

ARE INNOVATION DISTRICTS AN EFFECTIVE STRATEGY FOR COMMUNITY ECONOMIC DEVELOPMENT?
Abstract ID: 94
Individual Paper Submission

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Urban planners and policy makers promote innovation districts as benefitting surrounding communities by creating jobs for a wide range of skill sets, from service-oriented to high-skilled professions (Katz and Wagner 2014). They also champion innovation districts for their potential to create or revitalize communities within their borders, producing desirable neighborhoods with housing and amenities in close proximity to work (March and Ribera-Fumaz 2016; Wagner et al. 2019). Both of these goals, however, are mismatched with the application of innovation districts.

We analyze the progression of four, varied innovation districts in the United States (in Boston, Detroit, St. Louis, and San Diego) in relation to community economic development goals. Our empirical information is drawn primarily from interviews with innovation district creators and implementers, entrepreneurs, and representatives of local business and community organizations. We also collected and reviewed primary documents and media reports, diagrammed and toured each innovation district and its environs, and in a couple of cases attended selected local events relating to innovation district development.

We demonstrate how the direction and pace of innovation district development determines whether community goals are realized (Drucker et al. 2019). Promoting innovation involves prioritizing the needs of high-skilled workers, who may not live close to the district or may not share the preferences of other local residents. If real estate development takes center stage, market demands become the focus. The construction of hotels, high-end condominiums, and boutique amenities may leave affordable housing options for lower-income workers and the provision of public services as secondary considerations, if they are included at all (Lawrence et al. 2019). As is true with other economic development tools, the achievement of robust, rapid development may undercut community aims. Surging real estate prices within and around an innovation district hold the potential to push out longstanding residents and services, further negating the innovation district as a space for a diversity of people, ages, resources, and amenities.

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Key Words: innovation district, community economic development, housing, right to the city, real estate development

IN THE SHADOW OF AMAZON'S HQ2: UNDERSTANDING THE ENTREPRENEURIAL ECOSYSTEM NEAR NATIONAL LANDING
Abstract ID: 97
Individual Paper Submission

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The development of the new Amazon HQ2 and Virginia Tech Innovation Campus at National Landing (hereafter called 'National Landing') in Arlington County and the City of Alexandria, Virginia offers unprecedented research and engagement opportunities for scholars and practitioners interested in entrepreneurship and economic development. This paper focuses on the existing entrepreneurial ecosystem (Mack and Mayer, 2016) in the neighborhoods most likely to be impacted by the Amazon HQ2 and Innovation Campus developments. It does so by asking what opportunities exist to leverage assets and build capacity to ensure local small businesses and entrepreneurs participate in economic opportunities related to developments at National Landing? The goal in answering this research question is to better understand these entrepreneurs and small businesses, identify their unique challenges, and effectively communicate these findings using data visualization tools that allow us to see and understand the threats and opportunities presented by extraordinary levels of investment (Mason and Brown, 2013). At the time of the National Landing announcements, the commercial corridors within these targeted communities make up some of the most diverse in all of Northern Virginia.

When dealing with investments as sizable and as potentially disruptive as those that are planned for National Landing, moving quickly to establish baseline data is essential. The paper utilizes data collected through in-person interviews and focus groups with small businesses, entrepreneurs, and resource providers in the neighborhoods surrounding the National Landing developments. Thereafter, a social network analysis and visualization of the ecosystem is conducted using the preliminary ecosystem map, as well as data from identified Twitter feeds. The network analysis maps the region's assets, communities and connections (nodes and edges) and analyzes relationships between different nodes, or in this case, relationships among organizations, small businesses, and entrepreneurs in the ecosystem (Cowell, et al 2019). The mapping aids in the identification of: actors with a strong presence in the ecosystem; sub-communities, resource providers, individuals, or small businesses that may have disproportionate or noticeable influence in the ecosystem; and potential bridges between sub-communities, which can be key to gaining entrée or effecting change in underrepresented communities (Engbers, et al 2017).

Preliminary findings suggest that the entrepreneurial communities in the neighborhoods surrounding National Landing are not monolithic. Degree of specialization, connectedness, and financial health vary greatly across business types and neighborhoods. Additionally, the degree to which the business community in each neighborhood is willing to connect with traditional economic development and small business assistance programs varies greatly across business types. ethnicity of the proprietor, and other dimensions. Nevertheless, common challenges and potential opportunities to connect with the developments at National Landing were identified. For planners and economic developers, the results of this study can help us understand how the National Landing developments are affecting the surrounding small business ecosystem. Moreover, the results will help us to identify the physical and programmatic approaches or strategies most appropriate for maintaining a locally-embedded entrepreneurial ecosystem as these developments take shape over the next decade.

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Key Words: entrepreneurs, small business, economic development, Amazon

SPATIO-TEMPORAL ANALYSIS OF THE ROLE OF NEIGHBORHOOD ECONOMIC DIVERSITY ON SHRINKING REGIONS

Abstract ID: 108
Individual Paper Submission

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The influence of economic diversity and agglomeration economies on regional growth and stability has been gaining broad attention and many economists, regional scientists, and urban planning researchers have focused on clarifying its impact. In the context of regional growth and stability, both strains have proven to have good explanatory power for the success of cities. Although a plethora of studies has attempted to clarify the role of specialized (Marshallian) and diversified (Jacobian) economies in the regional economic growth context, the role of these two strains in shrinking cities is yet to be explored. An exception is Murdoch (2018), whose study examines how these Marshallian and Jacobian economic theories help to explain the variation in growth and decline within shrinking cities at the neighborhood (census tracts) level and concludes that there is some evidence of economic specialization for shrinkage reduction.

From a different perspective, Hartt (2019) attempts to identify the existence of prosperous shrinking cities, their locations, and influential factors for their economic prosperity in the U.S. However, he did not take economic structure (i.e. either Marshallian or Jacobian) into consideration in his study. Building upon and further expanding Murdoch (2018) and Hartt (2019), the present study investigates the role of neighborhood-level economic diversity within shrinking regions. We hypothesize that some census tracts would reveal economic prosperity while others would not, and this disparity can be explained by the diversification of their economies.

In particular, this study examines the role of space, time, and economic diversity on the economic performance (e.g. employment growth or per capita income growth) of each census tract in a shrinking region. Unlike previous studies, we attempt to incorporate temporal dependency along with spatial influence, which further allows us to identify the dynamic changes in economic performance over space and time at a small-area level as well as to capture its variation within the region. This contributes to expanding the body of existing knowledge in terms of shrinking cities.

We select the Cleveland-Elyria Metropolitan Statistical Area (MSA), which consists of 635 census tracts, as the study region. In order to capture the shifts in economic diversity for each census tract over the 2002-2017 period, an economic diversity measure (i.e. an entropy index) is calculated for six temporal spans (every three years) using the Longitudinal Employer-Household Dynamics (LEHD) data. We adopt a flexible space-time Bayesian hierarchical approach (Knorr-Held, 2000) and the penalized complexity (PC) priors (Simpson et al., 2017) as our analytic framework.

The outcomes suggest that 1) accounting for space, time, and space-time interaction contributes to a significant increase of explanatory power for the model; 2) diversification of economies leads to employment growth within shrinking regions; 3) we can identify census tracts experiencing prosperity in terms of economic performance as well as their unique characteristics including economic diversity, proportion of skilled workers, labor force participation rates, and size of the units; 4) dynamic influences of economic diversity within shrinking regions are clarified.

These findings allow us to advise planners and decision-makers on where and how they should concentrate their efforts in order to improve the economic conditions of specific neighborhoods within shrinking regions. Planners can also consider revising current economic development strategies to be economically diversified (i.e. more localized) or how to maximize the benefits of pre-existing economic conditions by encouraging multiple industries.

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Key Words: Economic Diversity, Shrinking Regions, Space-Time Hierarchical Bayesian, Small-Area Estimation, Employment Growth

INCORPORATING POLICY LEARNING IN TORONTO TO KEEP CREATIVITY DOWNTOWN
Abstract ID: 126
Individual Paper Submission

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I examine the City of Toronto's interest in the process of policy learning regarding possible solutions to development pressure in its downtown though understanding extant cultural policies from San Francisco, Seattle, and Vancouver. I foreground Toronto's efforts to mitigate the increasingly frenetic development pressure in its central city through creative economy policy learning and lesson drawing, with the policy transfer inquiries focusing on related efforts in three other North American cities. I also explore how the return to urban living and the creative cities movement challenge city centers in preserving creative and cultural businesses and organizations.

I investigate Toronto's interest in the policy learning process regarding possible solutions to development pressure downtown though understanding policies from these cities. Grounded by the analysis of creative city interventions and incorporating a theoretical framework of policy adaptation, the research is informed by interviews with 51 multi-sector stakeholders, historical and archival materials, and policy documents. Emergent data themes include: (1) research and strategic planning; (2) stakeholder partnerships; and (3) economic development incorporating economic benefit and social good.

Toronto's urban core is where a number of creative businesses, nonprofit arts organizations, and arts producers are located, and while Toronto's city boosters, politicians, and cultural institutions remain interested in bringing the creative economy to the city, they want to leverage their city's institutions and established private sectors for organized district development. Here, I examine the interventions and smart practices municipal actors undertook in three similarly sized North American cities, recognizing the political will underlying Toronto's desire to explore policy options from other urban centers.

Municipal as well as regional actors have focused on finding ways to bring talent into cities and regions through policies that offer opportunities to interact with like-minded individuals, in addition to economic factors. Return to urban living and the creative cities movement challenge city centers in preserving creative and cultural businesses and organizations. Municipal actors often use central city district development to attract creative economy talent into their cities, promising that targeted policies, such as cluster formation, repurposing city-owned properties, and tax incentives will revitalize their city. However, many cities are facing challenges regarding the over-popularity and hyperactive developer agenda within downtown areas, due to the increased interest in city centers for both residential and commercial purposes.

Municipal actors often use central city district development to attract creative economy talent into their

cities, promising that targeted policies, such as cluster formation, repurposing city-owned properties, and tax incentives will revitalize their city. Municipal as well as regional actors have focused on finding ways to bring talent into cities and regions through policies that offer opportunities to interact with like- minded individuals, in addition to economic factors. However, many cities are facing challenges regarding the over-popularity and hyperactive developer agenda within downtown areas, due to the increased interest in city centers for both residential and commercial purposes.

Toronto's willingness to leverage this kind of policy learning in the trajectory towards making policy change shows that the city continues to be one that is open to innovation in municipal strategies. An important factor to consider is the role not only of placing this policy learning on the city agenda, but that of the implementation and subsequent evaluation of policy interventions. It is only through the careful rolling out and monitoring of any policy that the results of strategies for dealing with development pressure in center cities may be gleaned. This will lead to new knowledge for academics and practitioners alike and could prove to be of great value in the ever-evolving cycle of study, adaption, implementation, and evaluation in the field of urban policy today.

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Key Words: municipal cultural planning, Toronto, city center, development pressure, policy learning & adaptation

REGIONAL INDUSTRY EMERGENCE AND THE DIFFERENTIAL ROLE OF FINANCING
Abstract ID: 245
Individual Paper Submission

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Within any emerging technology, a few locations are able to establish an agglomeration of entrepreneurial firms. Firms in these locations benefit from the higher productivity associated with agglomeration economies. While places around the globe search for the appropriate recipe to create firm agglomerations there is increasingly a realization that an underlying spatial-temporal dynamic may be at work (Lévesque & Stephan 2019). This is a dynamic process as a region passes through a series of punctuated stages of emergence as an agglomeration of entrepreneurial firms forms. Understanding how industries take hold and transform regional economies is critical for public and private investment and for entrepreneurs who build their companies in places.

Regional industrial emergence, most simply, is a function of the entry and survival of startups (Spigel 2017). Organizational ecology provides a conceptual framework to study a population of firms, with a geographic region forming an appropriate boundary (Aldrich 1990; Sorenson 2017). Startup formation is

a response to collective patterns of activity in the environment, with prior entrepreneurial entry encouraging subsequent entry (Agrawal & Tripsas 2008; Carroll & Hannan 2000). An increase in the density of new firms indicates legitimacy, attracting resources that make it easier to establish firms (Baum & Singh 1994; Carroll & Khessina 2005). Finance is one of the most important resources for startups. It serves a direct role in development but also an indirect role crowding in other investment at the community level.

Prior work suggests the population focus of organizational ecology may be integrated with a micro level analysis of new firm financing to explain regional industrial emergence. Of course, this process is endogenous; individual regional contexts are highly differentiated and establishing causality is elusive. This paper puts forward a complementary theoretical framework that can provide new insights into the growth of regions. We change the focus from the individual entrepreneur and firm to consider conditions that shape the community in which the entrepreneur operates. Rather than comparing regions which contain heterogeneous resources and differing institutional contexts, we focus on emergence in one region over time, holding the external environment constant.

Organizational ecology suggests we should be able to discern temporal patterns as a regional industry emerges. Karniouchina et al. (2013) argues that the elements that determine firm performance will reconfigure as the industry lifecycle shifts from one stage to another and notes that the literature that examines performance variance has failed to account for the potential effects of lifecycle stage changes. We plot the density of firms over time in an emerging technology region, using a new method, threshold regression, to find inflection points where the radiant growth changed. Next we seek to understand how the reliance on different financing niches changes over the regional industry lifecycle using a dynamic random effects probit model with regime-switching analysis. We then estimate the relationship between the different sources of funding and firm survival within different stages using discrete event history analysis and regime-switching.

To develop this synthetic approach and explain industry emergence, we study the development of the life sciences industry in North Carolina's Research Triangle Region from 1980 to 2016 – an unlikely region to develop a successful agglomeration that provides a more realistic model than well studied highly successful archetypes. The novelty of this paper is the use of a unique, detailed database that links firm entry over time to different funding sources. We find that public and private funding sources are complementary but exhibit different signaling relationships and impacts on firm survival during different industry stages. Results have implications for startups seeking funding and for economic development policymaking and planning trying to encourage industry emergence.

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Key Words: regional industry emergence, entrepreneurial finance, industry life cycle, organizational ecology, startup survival

SUBURBAN YOUTHIFICATION, IMMERSIVE ART EXPERIENCES, AND HOW THEY ARE ALTERING THE PROVINCIAL FABRICS SURROUNDING DENVER, COLUMBUS, AND SANTA FE
Abstract ID: 329

Individual Paper Submission

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Much has been written about the youthification of cities, whereby increases in urban millennial residents are driving amenities that appeal to them (Florida, 2015). Youthification has been posited as another way to understand the changes to inner-city neighborhoods that may appear to be gentrification, but are driven by large increases in younger residents following knowledge economy jobs (Moos, 2016; Moos et al, 2019). However, with increasing inner-city real estate costs inhibiting entry of youth into these areas, we may expect to find evidence of youthification within outer-ring suburbs, where real estate costs are dropping (Hanlon, 2010). We present a case study investigation of three U.S. cities experiencing youthification of their outer-ring suburban areas in the form of immersive art institutions locating there. These nontraditional institutions have been identified as part of the millennial pallet for arts & cultural institutions and leisure activities, in general (Owens, 2018). This comparative case study analysis (1) uses quantitative methods to present how each of the cities' urban cores have experienced changes with respect to inner-city real estate prices and an influx of younger residents to the general metropolitan area, driving opportunity for immersive art institutions to locate within the cities' suburban areas, and (2) provides a qualitative analysis of resident reactions to the development of outer-suburban immersive art institutions within these three contexts. Findings suggest that there are differences in perceived value to these immersive art galleries that relate to socio-economic status -- as it relates to inclusions within the knowledge economy -- as well as that of age. This study furthers the literature on the role arts and cultural institutions play in the change of neighborhoods that they locate in, as well as furthering an understanding of how suburbs may change in the 21st century (Hanlon, 2010; Kemper, 2019; Meyer, 2020).
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Key Words: artists, creative cities, youthification, suburbs

THE EFFECTS OF DRIVERLESS CAR ADOPTION ON EMPLOYMENT IN THE US ECONOMY
Abstract ID: 374
Individual Paper Submission

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The advent of driverless vehicles (DV) is expected to be highly disruptive to travel modes in US metropolitan areas. Adoption is expected to accelerate from testing pilot programs during the early 2020s, and reach a substantial (but not preponderant) market share within the next 20 years. By 2050, the majority of US metro travel is expected to be in app-driven shared or solo DVs (Simons, 2020, chapter 9). There will be certainly be job displacement, as taxi drivers get scaled back, but some job sectors would grow, such as tech support. Other job sectors would see indirect changes, like car insurance.

This study seeks to translate the DV adoption phenomenon into economic impacts, measured by changes

in employment. Some initial work on this has already been accomplished, looking at existing sectors that could be affected, and at potential first-order effects, e.g., before economic multipliers (Simons 2020, Chapters 5 and 17). This approach posited three strata of affected jobs attributable to DV adoption. Primary jobs (taxi driver, bus driver, truck driver and similar direct transportation services, car dealerships), are directly affected. Secondary jobs are more indirect, (insurance claims, auto body shops, EMTs, organ donor networks, police) since they may rely heavily on private vehicle activity. The tertiary sector (power plants to serve electric cars, junior colleges to retrain, engineering and tech firms, data centers computer mapping) supports the general economy in places where DV and job retraining could occur, and many sectors here could expand rather than contract. We will begin with this base research, and expect to use IMPLAN or a comparable economic development software package to estimate national changes, and relative changes in 3 US states, over the next 20 years, under a range of DV adoption scenarios. Policy implications for Planners and economic development professionals would be set forth.

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Key Words: driverless cars, economic impact, jobs, disruptive, technology

PLACE-BASED COLLEGE SCHOLARSHIP PROGRAMS, LOCAL ECONOMIC DEVELOPMENT, AND RACIAL DISPARITIES: PROSPECTS AND PITFALLS OF THE BIRMINGHAM PROMISE
Abstract ID: 453
Individual Paper Submission

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This paper examines the potential prospects and pitfalls for the newly established Birmingham Promise (Alabama), a place-based college scholarship program providing universal last-dollar full-tuition college scholarships to in-state public post-secondary institutions for graduates of the Birmingham City Schools starting with the graduating class of 2020. The program is based on the Kalamazoo Promise program and other subsequently established place-based scholarship programs that have the dual objective of promoting academic success in secondary and post-secondary education, as well as contributing to local economic development (Miller-Adams, 2015; Miller 2018). The Birmingham Promise represents a novel application of a place-based scholarship program to address racial disparities in local economic development as the school district's students are roughly 90 percent African-American and more than half of the school district's college-bound graduates typically go on to attend Historically Black College and Universities (HBCUs).

The Birmingham Promise contrasts with existing place-based scholarship programs in locations such as Kalamazoo, Pittsburgh, and Buffalo in terms of the underlying the demographic, institutional, and economic factors that may impact the potential success of the program (Bifulco et al., 2019; Page et al.,

2019; Perna & Leigh, 2018). Five specific issues will be examined and contrasted to existing "promise" programs and their locations, including: (1) the demographic composition and academic performance of the Birmingham City School (BCS); (2) the preference of BCS graduates to attend HBCUs; (3) the public-private partnership funding and operational model of the program; (4) the inclusion of the scholarship program within a suite of related local economic development programs, and (5) the relevance of Birmingham's city and metropolitan economic structure.

Examination of these structural issues serves as the context for evaluating the strengths and weaknesses of the Birmingham Promise as it begins to pursue its stated objectives, including: (1) promoting economic development, (2) enhancing human capital, (3) stimulating urban revitalization, and (4) addressing racial disparities (www.birminghampromise.com). The concrete findings of this work will be used to establish benchmarks for the success of the program, as well as to deliver operational recommendations for the on-going program that can be implemented by post-secondary institutions receiving Birmingham Promise students, as well as stakeholders in the local public-private partnership for local economic development.

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Key Words: economic development, workforce development, community development, education, HBCUs

WHO BENEFITS FROM URBAN INNOVATION? ASSESSING PUBLIC GOODS CLAIMS IN URBAN INNOVATION INITIATIVES
Abstract ID: 469
Individual Paper Submission

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Cities around the U.S. and the world are undertaking initiatives that are intended to promote "urban innovation." The goals and approaches taken in these initiatives vary, but generally revolve around two broad types of strategies: "smart city" approaches that seek to prototype and deploy new technologies for gathering, processing and disseminating data in the urban context, especially those that relate to public services or planning interventions (Miller 2019; Clark 2020). The other approach is "innovation districts," which seek to catalyze research and commercialization activities on the part of institutions, existing firms and new entrepreneurial ventures through efforts to promote spatial proximity and functional synergies (Katz and Wagner 2014; Drucker, Kayanan and Renski 2019). Increasingly, such projects claim to yield broad public benefits beyond economic development, from environmental sustainability to social and racial equity. Yet these claims remain largely unexamined, leaving considerable room for skepticism about the credibility of such claims, especially in light of the demonstrable private benefits accruing to technology firms and real estate interests through these initiatives (Clark 2020; Schrock and Wolf-Powers 2019).

In this paper we undertake an inventory of publicly-initiated or supported urban innovation efforts in North American cities in the past two decades. We define "urban innovation" broadly to include the two primary categories mentioned above, but also related planning efforts, such as creative placemaking, that frame their objectives in terms of "innovation." Second, we conduct content analysis to catalog the claims to public goods and benefits made by project officials through published reports and project websites. We define "public goods" as social benefits providing use value to individuals through collective provision, or as an external benefit of private actions. We categorize the public goods claimed in terms of economic, environmental, and social benefits. Finally, and most importantly, we assess the quality and credibility of these public goods claims. Using a qualitative coding methodology, we assign a quality score to each initiative-public good combination, based on the following factors: theoretical plausibility, resources allocated to achieving outcome, measurement of relevant outcomes, and inclusion of impacted communities in planning efforts. We find, not surprisingly, that economic benefits like entrepreneurship are the "highest quality" claims of urban innovation initiatives, while social benefits such as racial equity are the least clearly specified and demonstrated.

The goals of this research are both scholarly and practice-oriented. We fill a knowledge gap among scholars studying urban innovation, "smart cities," and related efforts regarding the broader public benefits of those initiatives, especially in relation to social and racial equity. In that regard, our findings – descriptive in its current form – contribute toward a body of scholarship that has been largely critical of the political economy of urban innovation strategies (Clark 2020). However, by identifying conditions and practices that would be more likely to yield inclusive public benefits, we also seek to inform planning practice in progressive ways, so that urban innovation efforts can indeed benefit more than just technology companies and real estate interests.

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Key Words: urban innovation, equity planning, urban economic development

PRIVATIZATION AND INTER-MUNICIPAL COOPERATION IN US LOCAL GOVERNMENT SERVICES: BALANCING FISCAL STRESS, NEED, AND POLITICAL INTERESTS
Abstract ID: 513
Individual Paper Submission

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The 2007-2008 Global Financial Crisis (GFC) motivated calls for public sector reforms in a highly politicized context. At the center of this context is the 'austerity narrative' (Blyth 2013) that views cuts to public spending and taxes as necessary for recovery, and unions as an obstacle to reforms. With this emphasis on lower costs, the ideas and tools of New Public Management (NPM), such as delivering

services through for-profit contracts ('privatization'), are back in the spotlight. The 'austerity narrative' (Blyth 2013) shows a level of 'discursive convergence' (Pollitt 2002, 477) toward NPM ideas after the GFC that has raised concerns about its impacts, especially in communities with greater need. Do we see convergence on an austerity response (Blyth 2013) reflected in US local government actions or do we see a more balanced approach, as we look across a national sample of local governments (Kim and Warner 2016)?

With high levels of service responsibilities and fiscal autonomy, US local governments are key actors that can push back against austerity or implement it through service cuts and privatization. The two most common service delivery reforms among US local governments are inter-municipal cooperation (contracting with other local governments) and privatization. The use of cooperation is particularly meaningful in the debate of whether NPM tools are compatible with public values (Jorgensen and Bozeman 2002), because previous research finds inter-municipal cooperation, in addition to seeking lower costs, also is motivated by broader goals, such as higher service quality and better service coordination across the metropolitan region (Aldag and Warner 2018). Broader equity and quality goals may limit the cost savings potential of cooperation but may help ensure broader public objectives are met.

We conducted a national survey of US local governments in 2017 to explore which factors differentiate their use of privatization and cooperation in service delivery. In the highly politicized context of more than a decade after the GFC, do local governments prefer the use of NPM tools such as privatization? Or, do they continue to balance fiscal stress and service needs with a broader approach (e.g. inter-municipal cooperation)? Using data on 2,109 US local governments, we build regression models of privatization and cooperation as a function of fiscal stress, capacity, need, place characteristics, political interests, and managerial factors. We find inter-municipal cooperation is responsive to both fiscal stress and community need, while privatization is more responsive to wealth. As US local governments manage the various political and fiscal pressures with service needs, cooperation appears to be the service delivery alternative more closely related to a broader set of public values.

The findings of this study will have practical implications for city planners searching for reforms that balance community needs with shrinking fiscal resources. Moreover, the findings will allow us to test previously established characteristics of privatization and cooperation in a context of long-term fiscal stress.

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Key Words: Privatization, Cooperation, Local government, Fiscal stress

RECONSIDERING "BUT-FOR" ANALYSIS IN PLACE-BASED ECONOMIC DEVELOPMENT POLICIES: A NOVEL METHODOLOGY FOR EVALUATING OPPORTUNITY ZONES
Abstract ID: 628
Individual Paper Submission

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With the passage of the 2017 Tax Cuts and Jobs Act, Congress created Opportunity Zones—the first new economic development tool aimed at assisting low-income neighborhoods in decades. Opportunity Zones (OZ) aim to redirect private investment flows into real-estate projects or local businesses in certain designated census tracts by offering significant tax breaks to wealthy investors. While certain aspects of the OZ law are new, this policy builds on a legacy of federal, state and local place-based policies, including Empowerment Zones, Enterprise Communities, and Tax Increment Financing that seek to leverage private capital to improve economic outcomes and alter the physical landscape in distressed neighborhoods. What makes the OZ program unique is that it is being offered at a time when many central cities are undergoing profound economic change marked by the reversal of decades disinvestment, growing population, and an improved competitive position (Hartley, Kaza, & Lester, 2016 2016). Critics of OZs—and other place-based policies—worry that such policies will end up subsidizing gentrification in that they will encourage investment in areas that are already primed from private sector development (Jacoby, 2019).The critical factor in assessing the effectiveness of place-based policies like OZs is the so-called 'but-for' test, or, asking if the investment outcomes observed would have happened anyway without a public subsidy.   Most place-based policies include some kind of selection criteria to select the geographic areas targeted for public assistance. These criteria typically involve a threshold poverty or unemployment rate, or some kind of "blight test" based on physical deterioration or devalorization.

A critical problem with these selection criteria is that they focus only on the values in targeted census tracts or blocks, and do not consider the levels of distress or market attractiveness in surrounding areas. Thus, a given census tract may qualify as an OZ, based on its poverty rate, but may be located in or adjacent to a rapidly gentrifying area. In this case, the but-for test would fail, and public subsidies may end up accelerating displacement. Alternatively, an OZ located within a much larger disinvested neighborhood, which has seen little or no private investment would closer align with the program's stated goals of providing subsidies needed to stimulate private investments.

In this paper we present a new methodology for answering the 'but-for' test that accounts for the spatial context of potentially targeted tracts and assigns a likeliness score to each tract based on the economic characteristics and investment trends in surrounding areas. We begin with a descriptive case study of the problems with ignoring spatial context when designating the boundaries of place-based subsidy programs. Specifically, we use case of the Lincoln Yards TIF (involving over $1 billion in public funds) in Chicago to motivate this issue. Next, we demonstrate how a spatially-weighted regression model can be used to assess the likelihood of development for each potentially targeted zone. Finally, we compare our spatially contextualized model results to the existing OZ designations in Chicago to evaluate the potential for the OZ program to pass the 'but-for' test in the City. Finally, we conclude by offering recommendations to planners and local officials on how they can better incorporate spatial trends into their own evaluations of local subsidies and capital investment decisions in OZ targeted areas.

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Key Words: Opportunity Zones, Placed-based economic development, Policy Analysis, But-For test

SHRINKING CITIES IN URBANIZED CHINA: DIVERGENT DEVELOPMENT PATHS UNDER STATE RESCALING

Abstract ID: 717
Individual Paper Submission

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Shrinking cities are now considered one of the most critical challenges in urban planning. However, the issue of urban shrinkage has not been explored much in the developing world, especially in rapidly urbanizing China. The "developing" character tends to divert the research focus to the growing and mega cities, masking the paralleled uneven development and the problem of shrinkage in other cities. In fact, the massive state-led urbanization in China has created different development trajectories for cities.

To fill the gap of shrinking cities in developing contexts, this paper contributes to the study of urban shrinkage in China both methodologically and theoretically. Instead of choosing two time points and calculate urban changes, this paper utilizes an innovative technique, Dynamic Time Warping (DTW) algorithms, to conduct time-series clustering analysis on urban growth and shrinkage. It groups all 290 prefecture cities in China into different urban trajectories from 2006 to 2015, such as continuous growth, recent growth, stabilized shrinking, recent decline etc. The typologies are further created based on the trend of time-series clustering results of urban population and economy dimensions.

Then, the paper further explores the factors that may affect urban shrinkage in China using a multinomial logistic regression. The impacts of state spatial selectivity, local responses to state rescaling, core-periphery neighboring effects and economic restructuring are examined across different urban trajectory typologies. In general, cities in the northern China, especially in the Middle Yellow River region and the Northeast suffer from population loss and economic decline due to not being privileged by the state for development, higher local economic share in resource-based sectors, lower natural growth rate, less competitiveness and attractiveness to the market and developers. In contrast, shrinking cities in the south-central China, especially in the southeastern coast and Middle Yangtze River, can be attributed to their proximity to state-selected high-level large cities that have a gravitational pull of people and economic activities. Since these middle and smaller cities are not favored by the state policies, they are likely to rely on debts to sustain local economic growth.

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Key Words: Shrinking Cities, Time-Series Clustering, Urbanization, State Rescaling

FOUNDATION COALITIONS AT CROSSROADS: TRACING THE RELATIONSHIP BETWEEN DISCOURSES BY NATIONAL PHILANTHROPIC COALITIONS AND FOUNDATION PRACTICES IN LOCAL ECONOMIC DEVELOPMENT

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While philanthropic foundations have long played a role as a partnership builder in American cities, foundations have been increasingly collaborating with each other across larger geographies in the past two decades. In particular, a number of prominent philanthropic foundations have formed national coalitions to collaborate on a specific set of issues across multiple cities. Simultaneously, in cities such as Detroit and Cleveland, national and local foundations have worked closely together to take on leadership roles in forming and implementing local economic development agendas. By analyzing discourses and supported projects channeled by two prominent national foundation coalitions, this paper investigates: How do national philanthropic coalitions and their discourses relate to foundation practices at the local level?

Recent planning scholarship has identified emerging roles for foundations at the local level. In Detroit, high-profile foundations, such as the Kresge Foundation and the Ford Foundation, planning professionals, and private developers have been a driving force in many of Detroit's revitalization initiatives in the past decade (Thomson 2019; Berglund 2020). Berglund (2020) points to the profoundly influential role and decision-making authority these foundation-led partnerships wielded. The foundation-led partnerships, she argues, produced outcomes that exacerbated existing economic disparity in the city. A highly nuanced comparative analysis of the roles local foundations played in urban revitalization across multiple jurisdictions uncovers tremendously complex and highly contextual dynamics of foundation practices in cities (Rocco, 2016).

The findings of this recent planning scholarship highlight potential tension in foundation practices at the local level. While the findings point to potential risks associated with emergent roles of foundations in urban revitalization as observed in Detroit, they also suggest complexities and contextuality of such dynamics. As national foundations often actively engage in local economic development efforts, research on how national philanthropic coalitions and their discursive practices relate to local foundation activities will shed light on the workings of foundations in cities.

This paper investigates this tension at the local level by analyzing the discourses and associated practices of two national foundation coalitions and their selection of local interventions. It presents systematic comparison across different "discourse-coalitions" (Hajer, 1995). The selected national coalitions focus on urban development and include Living Cities and the Funders' Network for Smart Growth and Livable Communities. Living Cities (formerly Comprehensive Community Development Initiative), a coalition between large foundations (12) and financial institutions (6), aims to improve the economic prospect for low-income citizens in over 40 cities in the United States. The Funders' Network for Smart Growth and Livable Communities is a coalition of 175 foundations that support equitable as well as sustainable economic development in regions and communities.

In order to investigate the relationship between national discourses and local activities, this paper uses mixed methods: discourse analysis and grantmaking analysis. It first examines discourses taking place at the national level coalitions. This paper then systematically compares those discourses to descriptions, narratives, and justifications of local economic development initiatives funded or even created by these national coalitions to determine whether meaningful differences or even tensions exist between national discourses and actual foundation practices in local economic development. Interviews with relevant participants provide more nuanced understanding of how foundations may rely on different frames of reference and how meanings may be interpreted differently (Healey, 1996).

This paper finds that discourses at the national level do not always linearly translate into practices taking place at the local level. In particular, key themes such as 'innovation' (which means 'taking risks' in the national discourses) are often in tension with projects those foundations support in urban development, indicating many foundations' knowledge of innovation may not be advanced or transformed through

national discourses.

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Key Words: philanthropy, foundations, economic development, coalitions, discourse

UNDERSTANDING THE FACTORS INFLUENCING EQUITY WITHIN ENTREPRENEURIAL ECOSYSTEMS: EXAMINING THE ROLE OF DIVERSITY, INCLUSION, AND ACCESSIBILITY
Abstract ID: 769
Individual Paper Submission

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The entrepreneurial ecosystem framework has been widely embraced by economic development practitioners, scholars and policymakers as a key strategy for building strong economies. The aim is to create a network of organizations and key stakeholders who each play a role in creating, nurturing and growing new businesses in hopes that they will mature and contribute to the area's economy. The key is the connectivity which enables knowledge, information, and resources to be disseminated efficiently. The specific patterns of resource-flow through the system have implications for which entrepreneurs, organizations, and communities participate and prosper from a particular ecosystem. Entrepreneurial support organizations (ESO) play a critical role in entrepreneurial ecosystems by acting as the conduit through which individual entrepreneurs receive a great portion of their resources and information. However, not all entrepreneurs have benefitted equally from this process.

Inequality in entrepreneurship has been well documented, particularly among minorities and women. Historically, minority firms have higher closure rates, lower sales, fewer employees and lower profits than white-owned firms (US Census Bureau 2006; Fairlie and Robb 2008; Harper-Anderson 2018). Inclusion and accessibility are two of the primary barriers to minority entrepreneurs accessing critical resources and information through the ecosystem. Prior research suggests that a combination of geographic, industry and network factors help to shape the minority entrepreneur's experience in their ecosystem.

The purpose of this study is to determine which internal and external factors influence the level of equity (diversity, inclusion, and accessibility) for minority entrepreneurs within each ecosystem. More specifically, the study will assess the influence of ESO organizational characteristics, services, policies, and practices as well as external economic and policy factors on equity levels for minority entrepreneurs within the ecosystem in four U.S. entrepreneurial ecosystems (Detroit, New Orleans, Pittsburgh, Atlanta). While most other research on entrepreneurs uses the entrepreneur as the unit of analysis, this focuses on ESOs.

This research takes a multi-method approach employing both quantitative empirical data and qualitative

case studies to examine entrepreneurial ecosystems. An online survey is employed to collect data from ESOs in each study region. Survey data is combined with regional demographic and economic data to control for environmental factors external to the ESO. Regression analysis will be used to assess the impact of each factor on overall equity levels. Interviews provide context around the culture, policy environment, and leadership within each ecosystem. By understanding the influence of internal and external factors on ecosystem equity levels, policies and strategies can be derived to promote and increase diversity, inclusion and accessibility to critical resources, networks and information for minority entrepreneurs and thus improve their chances of starting and running successful businesses within their evolving ecosystems.

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Key Words: Entrepreneurial Ecosystem, Equity, Inclusion, Diversity

RESEARCH UNIVERSITIES AS GATEWAYS: FOREIGN-BORN POPULATION GROWTH IN UNIVERSITY CITIES AND COLLEGE TOWNS
Abstract ID: 793
Individual Paper Submission

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In 2017 the foreign-born population of the United States reached its highest share since the turn of the last century. In contrast to previous periods of peak immigration, new arrivals are frequently skilled workers, pursuing advance degrees, or moving to states with relatively low historical immigrant populations. While many studies have pointed to the importance of large research universities as critical to the economic development functions of learning, innovation, and knowledge production, the mechanisms underlying the potential role of universities in the attraction and retention of ethnically and culturally diverse populations to city-regions has received less attention. This study aims to extend the literature concerning the role of universities in economic development by examining their potential to serve as gateways for foreign-born populations and contributors to diversity. More specifically, it examines whether differences in the share of foreign-born residents in US counties with and without research universities can be observed following 1990 amendments to the US Immigration and Naturalization Act. The Act created further pathways to permanent residency for skilled professionals and international students who acquired degrees at US higher education institutions. Using a sample of 258 US counties (distinguished between those containing research universities and those without such institutions), it analyzes the relationship between foreign-born population growth and two experimental indicators of university presence before and after 1990. Results suggest that while a significant share of foreign-born population growth in counties within small and medium-sized cities is attributable to the presence of highly educated residents, counties with a research university exhibited significantly larger foreign-born population growth in the study period than counties without such institutions.

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Key Words: universities, economic development, immigration, diversity, small and medium-sized cities

HOUSING THE NEW ECONOMY: AN ANALYSIS OF ECONOMIC DEVELOPMENT AND HOUSING PLANS IN US AND CANADIAN CITIES

Abstract ID: 816
Individual Paper Submission

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Cities have embraced talent attraction as a core element of their economic development strategies (Florida 2018). While the critiques of this approach are well-rehearsed amongst scholars of planning and allied fields, it continues to be a mainstay practice amongst city builders and planners. Urban governments are commonly engaged in place promotion to attract young, highly skilled workers. Relatedly, there is growing concern that housing in major North American cities is becoming unaffordable. While large cities have always been relatively more expensive, there is now concern that there is a growing share of young adults experiencing affordability concerns, and that high housing costs could become a barrier to attracting young, skilled workers (Moos et al. 2018). This has become of particular concern in new economy cities that rely heavily on tech-oriented activity and the service sector for economic growth.

In this paper, we explore whether housing is considered in economic development strategies, and whether housing and economic strategies are linked in metropolitan regions. Neo-liberalization, globalization and financialization have contributed to increasingly market oriented housing provision and land value appreciation in many large North American metropolitan areas. There is growing concern that major cities that are 'successful' in the new economy have become less affordable for, and inclusive of, a broader spectrum of people (Lee 2018; Zukin 2019). Although housing affordability issues should arguably be recognized as social issues in their own right, in the contemporary neo-liberal city, unaffordable housing is increasingly positioned as a potential concern that impacts economic competitiveness by limiting labour flows, especially highly skilled workers seen as central in the new economy.

We conduct detailed content analysis of 131 local economic development plans and 119 housing strategies across 59 metropolitan regions in Canada and the United States with populations greater than 1 million. Drawing on methods used by Filion and Kramer (2011), we code these documents to derive 13 variables capturing the local economic development and housing policy context. We analyze these data to find out if the economic development plans in these metropolitan regions identified talent attraction as a key element of their strategies, whether there was a specific youth or young adult focus related to talent attraction, and if housing and housing affordability issues were considered. Similarly, we assessed housing strategies within these same jurisdictions to determine whether there was a bias toward young, skilled workers. Finally, we assemble socio-economic data from the 2016 US American Community Survey (ACS) and the 2016 Canadian Census for these jurisdictions. We conduct an exploratory quantitative analysis using these socio-economic and policy variables to establish the types of relationships that exist between concentrations of a young, skilled workforce, housing affordability and the local economic development and housing policy context.

We find that most strategies tout the presumed value of 'talent attraction', particularly young workers, as well as the importance of housing. Yet, in most cases, housing and economic development strategies are not explicitly linked, especially when it comes to actionable items. We empirically evaluate whether

lower income households receive less attention in housing strategies, as affordability has become a middle- and upper-class concern. We find that most housing strategies consider low-income and marginalized populations, especially in the US due in part to federal requirements. We also find that young adults entering the housing market for the first time receive little explicit attention in housing strategies. We conclude that these two domains of planning remain largely disconnected in practice and argue that economic development planners must actively consider housing market dynamics and affordability. Moreover, planning scholars have a role in drawing closer attention to the relationship between these domains.

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Key Words: economic development, housing affordability, youth, new economy, talent attraction

THE IMPORTANCE OF TECH-FIRMS IN LEASING AND DEVELOPMENT MARKETS: ITS IMPACT ON MARKET PRACTICE AND EMERGENCE OF NEW SUBMARKETS IN CHICAGO
Abstract ID: 923
Individual Paper Submission

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Over the last decade, growing interest in tech firms as anchor institutions and ecosystem for knowledge-intensive firms have shifted the focus of many cities to accommodate firms and jobs in tech-sector as a driver of economic development. From the perspective of economic development, tech-sector is viewed as a provider of public benefits: providing high-quality jobs and growing rapidly, which continues to trigger real estate development in the locality. After the recent global financial crisis (GFC), the local government and media emphasized the role of tech-firm and startup in the local economy and its growth as a key indicator of the local economic achievement in the same way as many other metropolitan areas.

However, according to the County Business Patterns data, Chicago has shown 11 percent of employment growth in tech-sector while broader geographies such as Cook County (8.6%) and Chicago MSA (16.2%) have lost a significant number of IT jobs. Even though the overall CBD submarkets in Chicago has shown growing a trajectory in this particular economic sector, the only gains are drawn by emerging submarkets such as River North and West Loop and the rest of existing CBD submarkets have lost IT employments during the recovery period from the GFC. The recent submarket creation in Chicago is driven by the overall economic growth of the city to some extent, but it may be linked to the outcome of the interplay between the new urban redevelopment politics and changing market practices in the GFC period.

While we have witnessed the uneven development in office market development since the post-crisis, there is a gap in the literature that investigates the role of urban politics and their practices in the marketplace of how these submarkets are formed and its implications on urban space. This study views the emergence of new inner-city submarkets in the post-2008 period as 'a co-constructed process' of urban development that facilitated by both public and private sector to focus on identifying the micro-dynamics of rising submarkets and unfolding abstraction of market in boom and recovery period (Weber 2015). The study asks about: what is the role of urban politics in this particular urban transformation and how new development politics and networks have engaged in this process in relation to the growing tech

and startups in marketplaces. This research employs a mixed-method approach: interviews with local stakeholders in the development of emerging submarkets; extensive archival research at two submarkets; and analysis of the consolidated database from zoning, planning instrument, development project profile, transaction and financing of project.

The study identifies new politics and networks (i.e., real estate developer, institutional investor, local government, technology company, and hospitality group) have emerged and intensified throughout the post-GFC period that control and manage a wide range of the portfolio within a submarket. The study rethinks a portfolio not simply as a form of asset management but as a way of practice in which provides both spatial and temporal control that allows to internalize and capitalize the aggressive expansion and growth of rising blue-chip tenants within a short period of time. The local economic development institutions also engaged with the creation of the new submarkets and development vehicle by providing incentives and adopting private sector approach, which shifted local office demand from one place to other and promoting old industrial space to global investors. These findings problematize the assumption that naturalizes the direct relationship between macroeconomy condition and the inner-city revitalization in the current era; and revisits the role of local government and planning in local marketplace during the period of boom cycle that typically undermines the significance of planning and public sector.

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Key Words: Property Market, Planning Practice, Economic Development

THE LOCATION OF SPECIALIZED CREATIVE CLUSTERS AND THEIR RELATIONSHIP WITH FIRM PRODUCTIVITY IN THE UNITED STATES
Abstract ID: 1023
Individual Paper Submission

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Following the evolution of a global, service-oriented economy in which arts, culture, and creative clusters are economic assets that help regenerate and revitalize particular places, cultural and creative policies aim at enhancing local communities. Creative clusters are thought to be catalysts for sustainable economic development; they provided 29.5 million jobs globally, and with a global revenue of 2,250 billion $US, the industry exceeded Telecom services revenues, and surpassed India's GDP (EY 2015).

With all the competitive advantages of the inner city for industry clustering (Porter 1998) in general, these advantages are especially present for the creative industries dependent on "the salient features of the innovative milieu of the 21st-century inner city" (Hutton 2006, 1822). Creative clusters, in general, are expected to be more centralized than other industries, partly as a result of their need for proximity to better facilitate information flows vital to these industries.

This research investigates whether and to what extent specialized creative clusters contribute to the firm

productivity in their local community. The relationship and effects of creative clusters on firm productivity and local and regional economic development is a relatively understudied and assumed part of the creative economy. In most extant empirical studies about the benefits of clusters for creative firms, the subject of research is limited to either the creative cluster as a whole, one or few industries in particular, or the number of artists or creative workers, and not the relationships within the different creative clusters of various types.

This study seeks to address these gaps by investigating creative firms' productivity in specialized creative clusters, drawing upon a typology of creative clusters based on a comprehensive list of the NAICS codes (Markusen et al. 2008). This is one of the first national studies that uses disaggregated address-level employment size and sales volume for all firms within 20 metropolitan areas in the US to measure and compare the benefits of creative clusters for the creative firms. The author categorizes the creative industries into eight separate groups of 1) performing arts, 2) visual arts and photography, 3) film, radio, and television, 4) design and publishing, 5) educational services, 6) software publishing and gaming, 7) crafts and jewelry, and 8) museums and collections. Using cluster analysis to find specialization among creative clusters, this research compares two methodologies for investigating the relationship between firm productivity and the location of creative firms.

The results of regression analysis and propensity score matching methodologies demonstrate a positive and statistically significant relationship between the creative clusters and firm productivity for most of these clusters, as supported by the literature. The sales volume for both creative and non-creative firms within the clusters is significantly higher as compared to non-cluster areas, for some of the specific sectors such as gaming and software publishing as well as media. This approach offers a systematic and comparative analysis across the country, by studying the creative clusters in terms of their relationship with firm productivity.

Planners and policy makers can benefit from the findings of this study as it measures to what extent creative firms may benefit from clustering patterns in cities, while also providing a basis for assessment of cities' success for creative and cultural policies and strategies in the studied metropolitan areas. Instead of anticatalysts epitomizing inequality and gentrification, a thorough understanding of where the specialized or diverse creative clusters locate and to what extent they benefit the firms can enable policymakers to utilize the benefits of these clusters as effective catalysts for urban and rural revitalization.

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Key Words: Creative Clusters, Spatial Statistics, Cluster Analysis, Firm Productivity

BUILDING OPPORTUNITY: HOW ECONOMIC DEVELOPMENT PRACTITIONERS LINK OPPORTUNITY ZONES TO PRE-EXISTING PROGRAMS

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Opportunity Zones (OZs) are the latest in a long line of urban programs meant to spur economic development in low-income neighborhoods. Considerable research suggests that similar incentive programs—including place-based programs, such as Empowerment Zones, and programs that target individual firms, such as those used during Amazon's HQ2 search—are not a panacea for urban problems. Still, after decades of practice and research, local practitioners have also learned how to make these programs work better for communities, for example by requiring Community Benefits Agreements or targeting distinct industries. As one of the largest federal programs to be rolled out in recent years, OZs thus provide an opportunity to ask: have local government applied lessons learned from these previous programs in their responses to and strategies for OZ development?

Opportunity Zones remain relatively new. Their designation was included in the Tax Cuts and Jobs Act of 2017, and allowed states to declare up to 25% of low-income tracts to be Opportunity Zones; private investors, in turn, can defer capital gains invested into the zones, and even waive them altogether if the investment is held for ten years. OZs are thus a novel approach to marshalling private dollars into neglected communities.

Yet local policymaking is an iterative process, with practitioners reconciling new institutional realities against existing institutional structures and logics. How practitioners frame new programs (like OZs) against established practices and approaches to economic development thus has implications for the responses they choose to undertake—and the impact newer programs have. For example, cities that identify similarities between OZs and more traditional firm-based incentive programs might respond by layering complementary programs together to achieve previously-determined community goals, by ensuring community groups have meaningful participation at critical junctures throughout the development process, or by prioritizing brownfield redevelopment and historic preservation, etc. Alternatively, cities may instead frame Opportunity Zones as a unique federal program that leaves little room for community input or involvement may choose to not develop such find-tuned responses.

We therefore ask three questions: First, how do practitioners frame OZs and theorize differences and similarities between OZs and established incentive programs? Second, what lessons have planners learned from past programs and initiatives—and to what extent and how have they applied these lessons to OZs? Third, what examples or lessons can we draw from studying heterogenous responses to OZs that we can apply to future programs?

We focus on the case of Connecticut to address these questions. Connecticut has 72 Opportunity Zones, drawn from 27 urban, rural, and suburban municipalities. Our data includes marketing materials produced by the state and all of these municipalities, media coverage and archival documents, and interviews with municipal and state officials (both elected and appointed).

We find substantial heterogeneity in responses to OZs. While practioner framing impacts prioritized projects and strategies, so, too, do pre-existing resources. We conclude with thoughts on how future economic development programs could include instructive efforts to help planners draw connections between newer and existing or former programs, but also on what role state government could play to help "level the playing field" between diverse municipalities so as to not reinforce pre-existing inequalities.

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Key Words: Opportunity Zones, Economic Development Incentives, Connecticut, Practitioners, Institutions

FIRM NETWORKS, GLOBALIZATION, AND INTER-REGIONAL DIVERGENCE: A RELATIONAL PERSPECTIVE ON UNEVEN ECONOMIC DEVELOPMENT
Abstract ID: 1060
Individual Paper Submission

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Average income levels of U.S. urban regions have been diverging since about 1980. The cause of varying degrees of economic development across city-regions is typically argued to be a function of differing levels of human and physical capital at the urban-regional level. And yet, it could also be argued that these factor endowments may not be the causes of regional economic development, but instead are the outcome of even deeper processes that shape economic disparities across city-regions.

This paper argues that urban income levels and development are not just dependent on local factor endowments but are instead dependent upon a larger fabric of actors' economic relations at the local, national and international levels. Focusing on CBSAs (core-based statistical areas) in the United States, this paper identifies the patterns of firms' ownership networks between cities that form a basic architecture through which crucial knowledge flows and transaction relations unfold. We argue that it is through these channels that innovation processes are stimulated and growth impulses transferred which impact urban income development. For the period from 1993 through 2017, we use a large-N database of firms' ownership networks to first trace how changes in these networks are related to qualitative understandings of inter-regional inequality and divergence. We then propose an alternative approach to conventional models of regional economic development that centers on the impact of local, national and international connectivity on urban income levels. Using a combination of social network analysis and longitudinal regression models, we find that our relational model of regional economic development strongly predicts differences in average income levels across U.S. CBSAs. In particular, we find that both local connectivity and urban scale stimulate economic development, as well as the degree of national and international connectivity of firms within a city-region. The results are consistent with a number of case studies that highlight the need to foster increased linkages between actors within and across city-regions in order to stimulate regional economic development.

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WHEN STATE ECONOMIC DEVELOPMENT PLANNING SUBVERTS LOCAL PLANNING: THE CASE OF EMPIRE STATE DEVELOPMENT CORPORATION IN EAST GREENBUSH, NEW YORK
Abstract ID: 1116
Individual Paper Submission

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The Empire State Development Corporation (ESDC), New York State's chief economic development agency, is a powerful public authority that can condemn property, issue tax-exempt bonds, and override local zoning ordinances. The ESDC plays a critical role in shaping local planning and policy outcomes through its use of loans, grants, tax credits, marketing, and other forms of assistance primarily brokered "behind the scenes" and sometimes at the expense of local public planning. Using existing literature on the politics of planning (Forester, 1989), the role of public authorities (Doig, 1983; Radford, 2013), and intergovernmental relations (Sbragia, 1996), this paper seeks to better understand how this state entity acts in (and on) localities by using the case of ESDC grants to Regeneron Pharmaceuticals, Inc. in East Greenbush, New York.

Regeneron Pharmaceuticals, Inc. is an internationally renowned biotechnology company. In September 2018, the company announced it would invest $800 million and hire an additional 1,500 employees in East Greenbush, where the company already operated a manufacturing facility. At the same time, Empire State Development Corporation (ESDC) announced $70 million in capital grants to Regeneron for the expansion. Loretta Beine, the director of industry and life sciences at ESDC, told ESDC's board of directors in a meeting that the company would have expanded to Ireland without the incentives.

As of early 2020, the company's expansion is progressing thanks in part to the support of Empire State Development Corporation and steps the authority has taken to expand the biotechnology sector in the region. In East Greenbush, existing roadways and sewage facilities are insufficient to accommodate Regeneron's expansion. Further, the Town Board says it does not have adequate amenities that would motivate Regeneron employees to live in the town and spend money locally. While plans are underway to upgrade necessary infrastructure and the town is receiving development proposals for luxury apartments and other amenities suited for Regeneron employees, the town finds itself in a precarious situation. East Greenbush is a recipient of Regeneron development and expansion, rather than an active player in shaping its own future. Regeneron is changing the fabric of the East Greenbush community while the Town Board struggles to keep pace with the changes.

Through interviews, site visits, and media and document analysis, this paper explores the East Greenbush case in detail. This paper concludes that, first, while statewide public authorities can facilitate planning by providing financial, administrative, or other resources that may be lacking locally, they can also interfere with local planning efforts by imposing their own goals on local government. Second, a public authority brings a level of opacity to the local development process both in terms of its lack of transparency to local officials and residents and in terms of its ability to ignore local planning regulations and regulations regarding resident participation in the planning process.

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Key Words: economic development, local planning, intergovernmental relations, public authorities, Empire State Development Corporation

RACIAL SEGREGATION AND SPATIAL INEQUALITY OF OPPORTUNITY
Abstract ID: 1120
Individual Paper Submission

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Given recent structural changes in urban geography that are largely characterized by expansion to suburbs, this research investigates the spatial inequality of opportunities within metropolitan areas relating to the suburbanization of blacks and the locational patterns of jobs. Based on studies that argue the spatial disconnection between blacks and job opportunities continue in racially segregated suburbs and blacks have no choice but to sort into "unattractive" suburbs (Johnson, 2014; Moretti, 2012; Theys et al., 2019), it is argued that such patterns created spatial inequality between neighborhoods well beyond the boundaries of the inner city. Moreover, studies have shown that job growth most often occurred nearest concentrations of affluent, native-born whites and away from concentrated minority populations. To examine whether such trends have created spatial disparity within American cities, the spatial divergence in the locational distribution of black concentration and job opportunities are examined separately for neighborhood subareas (the inner-city, the inner-suburb, and the outer-suburb) using the decomposition of inequality measures. This provides an indication of whether urban structural changes in recent decades have shifted the "inner-city problem" of the SMH to other parts of metropolitan areas, and how these contributed to the spatial disparities within MSAs. The findings reveals that compared to existing notion that suburbs are homogeneous entities, the spatial distribution of blacks and jobs in the outer suburbs are greatly diverged and the inequality of opportunity across neighborhoods are greater in the outer suburbs than in the inner city depending on the development patterns of metropolitan areas. In metropolitan areas with suburban expansion in the Southern region – Atlanta, and Dallas – much of the inequalities are derived from the outer suburb, suggesting growing inequality between opportunity-rich neighborhoods and opportunity-deprived neighborhoods within the outer suburbs. This suggests that urban structural changes involving suburban expansion in metropolitan areas increased inequality in the suburbs, requiring more attention paid to more balanced suburban growth as much as the redevelopment projects in the inner city for achieving spatial equality in American cities.

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Key Words: Spatial inequality, Spatial mismatch, Neighborhood differentiation, Suburbanization

AN INPUT-OUTPUT ANALYSIS ON ECONOMIC DEVELOPMENT AND GENDER EMPLOYMENT GAP IN CHINA
Abstract ID: 1197
Individual Paper Submission

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Economic development and structural change have different impacts on labor force participation in terms of different gender and sectors. In recent decades, the growing female labor force participation rate has reduced the gender employment gap. By the end of 2017, employed females accounted for 43.5% of the total employed population, which have already exceeded the 40% target set by the China Women's Development Program (2011-2020) for 2020. However, the gender gap in the labor market still existing regarding different occupations and sectors. In this context, this paper evaluates the impact of economic growth and structural change patterns on the evolution of gender employment gaps in China. We explore the influence of consumption, investment, trade, technology improvement, and employment intensity on employment changing in the combination of time, gender, sectorial, and education level aspects. As an empirical study, we use the multisectoral input-output model to analyses structural, intersectoral and technological changes, as well as their impacts on Chinese gender employment gaps from 2002 to 2017. Our results show that economic structural change contributed to reducing the gender employment gap in China. More specifically, we observed a structural change steering China towards more female employment per unit of total output, and a shift toward a more service-oriented economy. The increase in final demand (scale effect) in terms of urban consumption and investment is also an important driver of employment growth. This paper has a contribution to revealing the relationship between economic development and gender equality in the Chinese labor market. In addition, our work is a first step in the study of female employment and gender gaps for China with Input-output model.

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Key Words: Gender employment gap, Economic development, structural change, Structural decomposition analysis

GROWTH BEGETS GROWTH? THE DECENTRALIZATION OF THE BUSINESS PROCESS OUTSOURCING INDUSTRY IN THE PHILIPPINES
Abstract ID: 1208
Individual Paper Submission

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The Philippines is a major global hub for the business process outsourcing (BPO) industry, through which operations such as customer service work, back-office accounting, digital animation, and human

resources management are subcontracted to third parties. As the country's second-largest source of dollar income, BPO directly employed about 1.3 million people across the Philippines in 2018. Scholarly questions are increasingly surfacing in an interdisciplinary context about the impact of the BPO sector, and "offshoring" more generally, on economic growth and urban development in metropolitan regions across the Global South.

This paper focuses on the decentralization of the BPO industry in the Philippines. In the Philippines, the vast majority of BPO offices are concentrated in Metro Manila. Over the previous decade, national and regional government agencies and private trade and industry associations alike have worked to propel the BPO industry into a handful of midsized cities. This paper documents these strategies and, in doing so, asks the following questions: What are the unique challenges faced by midsized cities in the Philippines as they attempt to capture inward investment from the BPO industry? How do midsized cities market themselves as BPO hubs? Is the expansion of the BPO industry in midsized cities, including the urban development projects it has triggered, distinct from those in Metro Manila? And, finally, what are the "urban futures" of the BPO industry in midsized cities, given rapid economic and technological change?

To answer these questions, the paper draws on three months of field research conducted in the Philippines. I focus in particular on the experience of two mid-sized cities, Bacolod and Iloilo, which are located in the Visayas region of the country. I adopt a mixed methods approach, which includes spatial analysis, observational analysis, industry analysis and semi-structured interviews with business leaders, politicians, urban planners and BPO office workers.

Through this analysis, I draw attention to the different strategies that are being taken in the Philippines to decentralize what is currently the country's fastest-growing industry. I argue that the decentralization of the BPO industry is placing significant pressure on midsized cities to invest in electricity and telecommunications infrastructure, office space, technical training schools, and other initiatives so as to attract multinational corporations in the outsourcing sector. Such investments represent a significant reallocation of resources for metropolitan and provincial governments, and, in some cases, have resulted in the construction of excessive office space, unnecessary infrastructure, or a combination of the two. The paper concludes with a more generalizable discussion of how automation in the BPO sector undermines much of the economic development policy currently being implemented in the country.

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Key Words: Economic Development, Small and Medium Sized Cities, Technology, Infrastructure and Development, Workplace Automation, International and Comparative Planning

EVERGREEN: THE PERSISTENCE OF GREEN INDUSTRY GROWTH AND LOCAL ECONOMIC DEVELOPMENT PROSPECTS
Abstract ID: 1229
Individual Paper Submission

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"Green" industries had a brief stint on the center stage of local economic development planning. But among many practitioners and analysts, the green industry road show has definitely moved on due to the failure to expand regulatory initiatives (particularly related to climate change) and the boom in domestic oil and gas resources leading to quiescent energy and materials prices. In recent years many local economic development practitioners have downgraded green industry development as a strategic focus, yet other entities in many cities have continued to promote green industry growth (e.g. sustainability offices, climate action planning offices, local utilities, etc.) The aim of this paper is twofold. First, we will conduct a careful assessment of the size, composition and growth of green industry employment, detailing shifting growth patterns in green industry segments. Using two scenarios we will estimate green industry employment growth (2010-2018) and projected growth (2018-2028). Second, we will examine the current status of green industry development strategies in broader urban development processes and institutions highlighting especially import-substituting "green" activities promoted through local sustainability initiatives.

This paper aims to evaluate recent "green" industry development activities through several angles. We will analyze national industry data to estimate aggregate growth in green industries (2010-2018) and patterns of growth and decline among specific industries (at the NAICS 3 digit subsector level). We hypothesize that aggregate employment growth in green industries has been higher than aggregate national employment growth through 2018. This will be supplemented by using BLS industry growth projections through 2028 to estimate potential future green employment growth. If green industry growth is robust under the current policy and regulatory set up, a more supportive set of national policies could transform environmental industries into a significant future driver of national and regional economic growth.

We will utilize the Bureau of Labor Statistics Green Goods and Services Survey (2012) to estimate green industry shares (as of 2011). These BLS share estimates will be applied to 2018 national QCEW industry employment estimates to estimate green job growth between 2011 and 2018 and to the BLS employment projections through 2028. This simple exercise will provide a baseline estimate of the size, composition, growth and projected growth of green industry employment over the periods. We will then draw upon academic and industry studies to develop an alternative scenario based upon adjusting the green shares of industry employment detailed in the 2011 BLS estimates. This will produce high and a baseline estimates of aggregate and industry specific green job growth.

Finally, we will relate recent performance of environmental industries to an earlier hypothesis put forward by the author(s) that in conditions of weak regulatory action and stable and relatively low energy prices a select set of import substituting, conservation-related industries and activities have constituted the most promising targets of local economic development planning (Oden and Young, 2014). This claim will specifically evaluated by the authors by more in-depth case studies from two case regions: Austin Texas and Buffalo, New York. The cases are selected based upon and earlier emphasis on import substituting green industry development (Austin) and export promoting green activity (Buffalo).

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THE ROLE OF SUB-CENTERS IN U.S. CITIES
Abstract ID: 1253
Individual Paper Submission

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Despite signs of reversal in some cities, the great majority of employment in U.S. metropolitan regions is located outside of central areas. For the most part, employment decentralization is measured in a binary way, whereby the share of employment in central business districts is compared to the share of employment in the rest of regional economies. This approach provides few insights into the nature and form of employment decentralization, such as whether employment decentralization is diffuse and random in nature or concentrated into numerous centers of relatively dense activity. A notable exception in this regard is work on sub-centers, where, using a variety of different methods, researchers identify multiple agglomerations of activity within cities. Due to both data and computational limitations, the detection of sub-centers is mostly limited to the analysis of single regions. No study has attempted to measure the extent and importance of sub-centers to regional economies as part of a comprehensive, multi-regional analysis.

While, in U.S. cities, employment has mostly decentralized from CBDs since World War Two, limited evidence shows that a small number of sub-centers throughout a region can account for as much as 48% of all metro region employment (Cervero and Wu 1997). This study seeks to measure the presence of sub-centers across the largest 100 metropolitan regions in the U.S. The research is motivated by three primary research questions. First, what percentage of employment is found within sub-centers across cities, and does this vary by city size and region? Second, what is the nature of employment activity within sub-centers and which industries tend to locate in sub-centers? Third, has employment within sub-centers become more or less pronounced over time?

The Census Bureau's Longitudinal Employer-Household Dynamic (LEHD) program will be the primary dataset employed in this analysis. LEHD provides employment counts by 2-digit NAICS category for census block groups over the period 2002-2017. For the largest 100 combined statistical areas (CBSAs), sub-centers will be identified following the approach of Redfearn et al. (2012), who employ locally weighted regressions to detect local peaks of employment density within regions.

This research is guided by the idea that employment decentralization in U.S. cities is more nuanced than may be widely perceived. The primary hypothesis of this research is that significant economic activity, while not found in a single CBD, is found in multiple sub-centers of dense activity throughout cities, which approximate many of the benefits of central business districts.

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Key Words: Employment Decentralization, Sub-centers, Urban Form

BROKEN DEVELOPMENTAL PROMISES? HOW THE GOVERNMENT IMPEDED LOCAL ECONOMIC DEVELOPMENT ANCHORED ON FDIS IN THE CASE OF SONGDO, SOUTH KOREA

Abstract ID: 1255
Individual Paper Submission

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Foreign Direct Investment (FDI) through multinational enterprises (MNEs) has become an important source of local economic development. More countries are adopting policies to attract FDIs with industrial targeting and special economic zones. However, evidence that MNE (FDI) has delivered continued and sustainable economic development to localities is surprisingly scarce. Even where zones have successfully generated investment, the benefits to the hosting locality have often been hard to detect.

Songdo, a free economic zone in the City of Incheon in Korea, is not an exception. On January 14, 2002 the Korean government designated Songdo as a site of the new Hub city to induce new FDIs, accommodating a Techno Park and Knowledge and Information Industrial Complex. Songdo meticulously followed FDI-led economic development strategies to forge regional assets to fit MENs' needs. After ten years of the program, however, Songdo continues to lag.

Existing studies account for such cases by placing the emphasis on the lack of MNE-local linkage development. Taking this approach one step further, this article delves into what lies behind the lack of the MNE-local linkage development from the perspective of the role of the government. I do it by building on the structure-agency approach. I found that, while Songdo succeeded in hosting FDI, the synergic effects of industry clustering have not materialized mainly because diffused supports and constant interventions from the national government that have disrupted locally specific strategies, such as industry targeting. Although the national government empowered localities to implement their own Free Economic Zones, it also directly and indirectly imposed its own interests through the legal systems and upper level national plans: for instance, the Korean government directed local FEZs to undertake national industrial policy goals. Songdo was thus required to target MNEs in biotechnology and IT, even though it did not have an existing technological, human resources, or industrial base able to benefit from MNEs in such sectors.

A telling piece of evidence is that, while Songdo struggled, other MNEs in Incheon (outside of Songdo) with more connections to the area's existing industry, such as the electronics and auto industries, show active collaboration with local firms. SMEs in these sectors, not only benefit financially from collaboration with MNEs, they also receive active knowledge and technology transfer and workforce training. This strongly suggests that the trouble lies with the national directive steering local economic development policies in Songdo toward firms it would have had difficulty attracting and away from using its existing resources and advantages.

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Key Words: FDI-led local economic development, Post-industrialization anchored on MNE-centric industry cluster formation, MNE-local firm collaboration, The role of institutions and governance, National-local government coordination

EMPLOYMENT IMPACTS OF BUILDING ALTERNATIVE FOOD SYSTEMS

Abstract ID: 1270
Individual Paper Submission

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The local food literature analyzes systems of production and distribution of local foods as an opportunity for sustainable economic development that combats the barrage of negative impacts on human health and the environment, loss of small farms and food businesses, and the increasingly reliance on inequitable labor practices that are associated with industrial agriculture. Local food and environmental advocates encourage an understanding of local food that connects ecological sustainability with social and economic justice, so that the development of alternative food systems (AFS) offers an interdisciplinary opportunity to bring about sustainable development on several levels (Feenstra, 1997; Born and Purcell, 2006; Donald, 2008).

Intermediated supply chains and larger-scaled systems have become potential assets to shift our food system to more equitable and sustainable practices, where researchers have called for the return of the medium sized farm that relies on wholesale markets and the sales of value-added goods, instead of focusing solely on selling directly to consumers in places like the farmers market. This presentation unpacks a crucial element of this recipe – labor beyond the farm. There is very little research analyzes labor across AFS, and specifically there is little understanding of the work involved in creating the food systems that will meaningfully shift food production and consumption away from industrial agriculture. From frequently small, "grassroots"-esque beginnings, how is work to develop alternative supply chains stimulated? What types of work are necessary to establish and expand sustainable food systems supply chains? What are the spatial patterns for labor demand in this industry? How do these jobs fit into the sustainability paradigm with respect to equity, quality, and environmental protection?

This study empirically estimates the effects of the Local Food Promotion Program on job stimulation from 2014 to 2017. Specifically, it unpacks the influence of this grant program on job creation beyond the job stimulus reported in final grant deliverables, instead examining the county level trends, in order to better understand broader supply chain and industry growth dynamics. Second, it examines the role of existing local food infrastructure and policy as foundational to extending intermediated supply chains for local food, finding that, while efforts to "go beyond local" are important, they may also serve as a critical foundation. Third, it connects this job growth with the first assessment of job quality, equity and inclusion outcomes, as well as spatial patterns of work and supply chain geographies within the industry by relying on a novel dataset document alternative food system jobs over the last decade.

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Key Words: alternative food systems, job creation, job quality

EXPLAINING PROPERTY TAX COLLECTION DISPARITIES IN MEXICAN MUNICIPALITIES
Abstract ID: 1363
Individual Paper Submission

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Property taxes are one of the most important sources of income for Mexican municipalities. However, collection rates in the country are very low (0.3% of GDP), even in comparison to other countries in Latin America. Insufficient local revenues mean cities under-invest in important urban services and infrastructure, such as waste collection, transit networks, and additionally, limit their planning capacities. Achieving a better understanding of the factors that limit property tax collection can be instrumental in improving quality of life, health, and environmental resilience amongst the population in Mexican cities. This study asks why some cities have greater revenues from property taxes. To answer this question, I first analyze the differences between cadaster values and market property values in a number of Mexican municipalities, as a proxy for potential missed revenue for the years 2012-2017. I then analyze the differences in tax revenue collection amongst different municipalities, and assess the role of municipal debt, the presence and involvement of planning institutes, the date of last update of cadaster system and land use plans, as well as urban form variables. The analysis will contribute to the growing body of research on local government performance in Mexico, and present new insight into the factors that influence and interact with increasing revenue streams in Mexican local governments.

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Key Words: property tax, urban public finance, municipal capacities

DOES LARGE-SCALE ANNEXATION OR CITY-COUNTY INTEGRATION POSITIVELY AFFECT LOW-INCOME RESIDENTS?
Abstract ID: 1384
Individual Paper Submission

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Large scale municipal annexation is a public policy that has received support from planners and urban political scientists as a tool to both provide revenue elasticity for central cities and opportunity for low-income residents. In this research we superimpose pre-annexation boundaries on the small number of municipalities that experienced large-scale annexation or county-city integration. We then examine the socio-economic conditions of residents who live within the original city limits and compare them to

residents of central cities that did not annex aggressively. We will restrict our universe to annexations or integrations that took place after the Second World War.

The literature on annexation will be reviewed; examples see Planning Advisory Service Bulletin 114 (1958), David Rusk's work for the Brookings Institution: Inside Game/Outside Game (1999) and Annexation and the Fiscal Fate of Cities (2006), Carr and Richard Feiock (Political Science Quarterly 2001), Mary Edwards (Journal of Planning Literature 2008), and Smith (Southeastern Geographer (2011). However, our quick scan of the literature indicates that it focuses on the motivations for cities to annex, not on the outcomes from the annexation or integration on residents and the fiscal condition of the annexing municipality. Here the Wikipedia page on Consolidated City-County is helpful.

Our research strategy is to first find the beginning of the annexation or integration and then identify a municipality that is a match before annexation takes place. There are three components to the analysis. First, we identify the motivation for the annexation. The we examine the integration of municipal services, especially public safety and schools, and the fiscal condition of the municipality compared to its match. This will be done by examining the Consolidated Annual Financial Reports (CAFR) and school district data. Students, crime, and fiscal outcomes (including bond ratings) will be compared. Third, we examine differences in socio-economic outcomes for people who live inside the original city limits.

The number of observations may not allow for the use of econometric techniques, such as difference-indifference regression models. Central Cities that have undergone large scale annexation include Columbus (Ohio), Indianapolis (In), Lexington (Ky), Jacksonville (FL), Kansas City (KS), Louisville (Ky), Miami (FL), and Nashville (TN). We also need to recognize that public schooling is often a county function in southern states and a municipal function in northern states.

Pre-war annexations took place in Atlanta (GA), Baltimore (MD), Denver (CO), New Orleans (LA), New York (NY), Philadelphia (PA), and San Francisco (CA). In these cases, the merged city-county is now hemmed in by municipalities and can no longer expand. Georgia has two smaller city-county integrated governments, Athens and Macon.

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Key Words: Municipal, Annexation, Residents, Outcomes

PROGRAMMATIC INNOVATIONS ON POST-DISASTER SMALL BUSINESS RECOVERY PROGRAMS.
Abstract ID: 76
Poster

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Small businesses are critical stakeholders in local economic recovery after disasters. And their resilience against disasters can affect that of the economic development as a whole. But rarely do they receive the same level of attention or aid as their neighboring households. Unlike large and medium-sized businesses, small businesses are particularly vulnerable to disaster recovery. Small businesses tend to have fewer

financial resources, less access to political capital, take fewer mitigative actions against disasters and generally are less prepared for disasters. Small businesses not only have fewer programmatic options to aid them in their post-disaster recovery, but these programs often require significant and tedious paperwork that acts as a barrier to business participation. For instance, the U.S. Small Business Administration (SBA) requires small businesses to show Credit Requirements (e.g. credit history, repayment, and collateral) to receive a disaster recovery loan, which some small businesses cannot easily provide. Furthermore, existing small business recovery aid programs underutilize the recovery moment as an opportunity to promote long-range mitigation and resilience actions such as business continuity plans. Also, small businesses are less likely to adopt disaster mitigation and resilience-based strategies. It is unclear as to whether small business recovery programs, sparse as they are, provide an opportunity to take mitigative actions against the next disaster. This missed opportunity is rendered even more significant in light of the fact that businesses are more likely to do mitigation and resilience planning immediately after a disaster, rather than before it occurs.

While research on indicators of disaster resilience has grown significantly in the last few years, much less is known about programmatic dimensions of resilience-building. Insights from disaster planning and environmental management literature suggest that programs that focus on mitigation and resilience-thinking generally share a set of specific characteristics. They encourage long-range planning, including mitigation planning; encourage adaptive thinking in the face of uncertainty, such as through circumventing red tape; promote the use of creative funding mechanisms, to work around resource constraints; increase engagement with nonprofits to improve resource availability; and promote networking and collaboration between various stakeholders to better identify local needs and improve response.

This paper uses this resilience-focused framework to examine whether small business recovery programs are utilizing the opportunity presented by disaster recovery to promote mitigation and resilience-thinking. We review business recovery plans, grant programs, loan programs and other economic recovery schemes in six disaster-affected cities, namely New York City, NY and Hoboken, NJ (2012 Hurricane Sandy); Charleston SC and Hilton Head SC (2016 Hurricane Matthew), and Port Aransas TX and Houston TX (2017 Hurricane Harvey) to identify program aspects such as implementing agencies (federal, state or local), scale of implementation (state or local), primary funding source, and programmatic innovations. These include creative financing mechanisms, incorporation of mitigation or resilience-focused actions(e.g. promoting use of insurance, business continuity plans, structural upgrades, and etc), and other innovations such as involvement of nonprofits in program design or implementation, efforts to reduce red-tape. We expected that some programs are more likely to mitigate for the next disaster, others programs only focus on recovery right after disaster despite of the fact that they name the mitigation.

This study fills many gaps in the literature. It sheds light on small business recovery after disasters, its relationship with disaster recovery policy, and the ways in which the post-disaster recovery moment can be used as an impetus to promote resilience-based thinking in the long-run.

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Key Words: Small businesses, Economic recovery, Disaster mitigation, Disaster resilience

EVALUATION OF ECONOMIC RESILIENCE IN THE GUANZHONG PLAIN URBAN AGGLOMERATION（CHINA）FROM AN EVOLUTIONARY PERSPECTIVE
Abstract ID: 597

Poster

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Cities probably suffer from huge shock due to natural disasters, climate change, epidemic diseases, terrorist attacks and so on. In the social-ecological system, cities are extremely vulnerable ascribed to their complexity and independence. The Guanzhong plain urban agglomeration is located in northwest China, a relatively less developed region in China's economic landscape. How to make the region respond effectively to cumulative risks from the economic, social, and environmental changes, and actively adjust itself to reduce the uncertainty and vulnerability, improve resilience to prevent risk have become an agenda for local organizations, governments, and the academic community.

The growing emphasis on the study of regional and economic resilience lies in an increasing external risk and domestic vulnerability in economic disturbances(Christopherson et al., 2010). In recent years, research works focus on analyzing resilience from "factors" and "domains" from the "engineering" and "ecological" perspective. There is a tendency in the literature that the concept of resilience resonates with the growing importance of an evolutionary perspective within economic geography(Simmie & Martin, 2010; Martin, 2012; Boschma, 2015).

This study aims to answer the questions as follow: (1) How to apply an appropriate method to assess the economic resilience from an evolutionary perspective? (2) Wha are the assessment results of economic resilience in the Guanzhong urban agglomeration and its spatio-temporal characteristics. (3) What optimal measures should be taken to improve the local economic resilience? To respond to these questions, this study discusses the theoretical evolution process of economic resilience. A gravity model is introduced to construct the economic network structure, and then the network structure analysis is used to assess the economic resilience in the Guanzhong urban agglomeration from 2008 to 2019. Using the GIS and Ucinet network analyses, this article analyzes three features of network: hierarchy, assortativity and clustering, then the variation characteristics of economic resilience in different periods are illustrated. Suggestions for optimizing the economic resilience are put forward in the conclusion.

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Key Words: economic resilience, city network structure, resilience assessment, Guanzhong plain

AN EXAMINATION OF MUNICIPAL EFFORTS TO MANAGE BROWNFIELDS REDEVELOPMENT IN ONTARIO, CANADA
Abstract ID: 613
Poster

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Since the 1990's, the reuse of brownfield sites for urban intensification has emerged as a core strategy in government efforts aimed at remediating pollution and prioritizing renewal, regeneration, and retrofitting. While upper levels of government in Canada engaged in early efforts to devise policies,

programs, and funding strategies to support redevelopment, the job of overseeing it has largely fallen to local government. This research project investigates the role of municipalities in Ontario, Canada's most populous and industrialized province, in managing and facilitating brownfields redevelopment via a so-called Community Improvement Planning (CIP) approach. Online surveys of municipal brownfield specialists, site visitations, and data provided by the province are used to answer the following questions:

- What role are Ontario municipalities playing in managing and facilitating brownfields assessment, remediation, and redevelopment activity in regulatory, financial, technical, and other relevant terms?
- What barriers continue to inhibit the redevelopment of brownfields?
- What redevelopment outcomes and impacts have been evidenced by municipalities?
- What is the municipal relationship with other public, private, and nonprofit sector stakeholders?

Results reveal that there has been moderate growth in the number of municipalities of different sizes using CIPs and offering incentives to support brownfield redevelopment throughout the province. The CIP approach also helps standardize how municipalities perceive their role and the role of brownfields in planning for growth and urban economic development. But, while objectives and perceived roles may be common, the research reveals that municipal capacity to deliver on those objectives and roles is extremely diverse. Indeed, three groups of municipalities have emerged, with one group very experienced in how to apply a CIP and the financial tools therein, another group muddling through as opportunities and interests arise, and a group with brownfields goals and plans but little capacity to move them forward. As such, the development barriers that continue to inhibit brownfields redevelopment in Ontario are not only related to development costs, risks, and complex procedures, but are further complicated by the need to maintain and improve municipal capacity to engage in and support brownfield activities and partnerships.

Overall, the province's hope of empowering municipalities with the ability to both plan and facilitate brownfields redevelopment locally via the CIP approach seems to support a common vision, but realities are fragmented on the ground. While this may be fine for some, it doesn't provide hope for those keen on seeing brownfields achieve more to advance renewal, regeneration, and retrofitting. The research is of relevance to urban planners and policy makers interested in this domain of urban revitalization and redevelopment, as well as the strong cohort of planning scholars who have made significant contributions to this field of research over the last two decades.

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Key Words: brownfields, redevelopment, municipal, policy, management

DOES TRAVEL BEHAVIOR AFFECT INNOVATION?
Abstract ID: 668
Poster

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Are physical spaces important to innovation? If so, are there particular elements of the physical space that matters? While research has been done on financial, political and institutional factors, I'm more interested in discovering the role of the built environment in economic performance. Scholars such as Edward Glaeser and Richard Florida have argued that the built environment could attract high-skilled talents so as to improve a place's productivity. This argument has been criticized by many as it's excluding a large share of the population to be considered in the policy actions and put an emphasis on place-making as a policy tool without an understanding of the exact causal mechanism behind. I'm less concerned about how would public amenities attract talents to the city, but how does the built environment improves its current situation, and thus bring more economic opportunities to the local community. One argument is that the physical environment could increase the frequencies of face-to-face interactions, which are important because of its facilitation knowledge spillover, and also build relationships and trust.

There has been little empirical evidence to prove the link between the built environment and the level of innovation through face-to-face interactions. In a recent study by Rosen(2019), she argues that the physical layout of a neighborhood makes a significant contribution to innovation capability through street connectivity. Another channel that could explain how the built environment affects innovation is through travel behavior. My hypothesis is cities that have a higher proportion of non-motorized commuting behavior and use of public transit yield a higher level of innovation. Why? Entrepreneurs value time at higher value than average workers because they're under intensive competitions. Therefore, time spent on commuting especially congestion on a daily basis will be a waste for entrepreneurs. As planners, we should advocate for more investment in public transit to increase its usage and have a positive impact on innovation and productivity.

The empirical framework of this analysis is as follows: first, use patent data to measure the level of innovation, identify innovation clusters in each MSA. Second, use Longitudinal Employer-Household Dynamics (LEHD) data to match residential locations of innovation clusters, then calculate average travel time (minimum travel time by auto, public transit and walk) for the identified work-home location for each city. The dependent variable is the number of patents in the innovation clusters in each city. The key independent variable is the average travel time, ration between public transit, non-motorized travels and auto travel along with other control variables.

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Key Words: Innovation, Travel behavior, Public transit

TRACK 4 – ENVIRONMENTAL PLANNING & RESOURCE MANAGEMENT

TRACK 4 - PRE-ORGANIZED SESSION SUMMARY & ABSTRACTS FOR THE SESSION

COORDINATING PLANS TO REDUCE RISKS TO HAZARDS AND CLIMATE CHANGE: NEW PERSPECTIVES ON NETWORKS OF PLANS AND PEOPLE
Pre-Organized Session 29 - Summary
Session Includes 110, 111, 112, 113

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By 2050, global flood damages are projected to increase to more than $60 billion per year. Costs continue to rise in part due to the isolation of hazard mitigation planning from land use and other planning processes. In many communities, lack of coordination across these types of plans allows development to continue in risky locations. But there are examples of where coordinated planning has been leveraged to reduce risks and advance multiple community goals. These lessons indicate that plans should not be treated in isolation. Rather, to understand the effectiveness of plans – particularly hazard mitigation, climate adaptation, and resilience plans – we must take a "network of plans" approach. This session examines current perspectives on networks of plans: What do we learn by examining network of plans and interdependencies compared to looking at plans in isolation? What are the different methodological approaches to studying networks of plans? What drives coordination and conflict among plans? What are the outcomes of coordinated planning? What are the implications for the future of hazard mitigation, climate adaptation, and resilience planning?

Objectives:

- Describe methodological approaches to study networks of plans and people.
- Illustrate how communities have coordinated plans for reducing risk to hazards and climate change.
- Identify how coordinated planning results in changes to local understanding of risks, strength of partnerships among stakeholders, and risk to different population groups and the built environment.

APPROACHES TO UNDERSTAND NETWORK OF PLANS
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Abstract within Pre-Organized Session 29

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Communities adopt many plans including comprehensive, hazard mitigation, transportation, open space, climate change adaptation, and resilience plans. Together, these multiple plans create a "network of plans" that collectively guide development in a community. It is increasingly recognized that the field of planning must move away from analyzing plans in isolation and towards a more holistic view of "network of plans." Studying multiple plans together can improve our understanding of how plans drive development and address policy issues. While a network of plans approach to understand planning is valuable, methodological approaches to analyze multiple plans and their relationships have been underdeveloped. In this presentation, I will introduce different methodological approaches to study networks of plans, demonstrate how they can be applied using a case study, and discuss the implications of these different views of a network of plans. The four approaches that I will focus on are: (1) plan quality evaluation, (2) cross referencing, (3) social network analysis, and (4) plan integration for resilience scorecard.

Applying plan quality evaluation techniques to a network of plans in a single community highlights how multiple plans address a single policy issue. For example, do plans in a community consistently address issues of climate change and sea level rise? Do they include goals, information, and policies to address climate change? In Boston, evaluating 17 plans found that 70% of plans discuss sea level rise and 60% include sea level rise projections. Infrastructure plans such as transportation, housing, and capital improvement plans tend to be weakest in this component, suggesting they may inadvertently increase vulnerability to sea level rise. Applying plan evaluation techniques can help identify specific strengths and weakness of plans regarding a policy issue within a community.

Cross referencing, refers to plans explicitly citing or drawing on other community plans. For example, in Seattle, the 2016 comprehensive plan references 7 of the 18 other plans included in the analysis suggesting it is building on existing planning efforts. In contrast, the 2015 hazard mitigation plan only references two other plans suggesting relative isolation from other planning efforts. This type of approach can help identify the importance of specific plans in driving the overall planning agenda, by identifying those that are most central and well connected.

Social network analysis moves from considering plan content to considering the organizations involved in developing and implementing plans. Applying this type of approach can help identify central actors and boundary spanners in planning efforts. It can further help identify which organizations may be excluded from planning.

Lastly, the plan integration for resilience scorecard (PIRS) spatially analyzes plan policies. PIRS was developed by Berke and colleagues in 2015. Researchers identify policies in each plan that may affect physical vulnerability to flooding, score policies on whether they would likely increase or decrease vulnerability, and then spatially map each policy. This approach can help identify specific areas in a community where plan policies may increase vulnerability as well as inconsistencies across plans. In Baltimore, for example, the 2018 Hazard Mitigation and Climate Adaptation Plan has on average 21 policies per a district in the city to reduce vulnerability. In contrast, the 2012 Climate Action Plan tends to increase vulnerability across the city by encouraging denser and mixed use development in risky locations.

As greater emphasis is put on examining networks of plans, there is a need to review the methodological approaches to studying multiple plans and their relationships. The approaches presented here can help advance our understanding of network of plans and develop recommendations to increase consistency and coordination across plans.

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Key Words: Network of Plans, Methods, Coordination, Plan Evaluation, Climate change

LESSONS FOR MOVING TO THE HIGH GROUND: REDUCING FLOOD RISKS WITH NETWORKS OF PEOPLE, POLICIES, AND PLANS
Abstract ID: 111
Abstract within Pre-Organized Session 29

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Since the onset of settler colonialism in the United States, the widespread failure to develop communities in sustainable and resilient ways stems from deeply engrained conceptions of land as an economic resource to be exploited, often with little to no regard to timelines beyond a few years or decades. Research often falls prey to a similar dynamic, with scholars often overwhelmingly focusing attention on the most obvious material relationships amenable to study by 'hard' science and exploitation for economic gain. Meanwhile while ignoring the nuance and messiness of the relationships between people

Millions of research dollars and government studies have examined the relationships between hydrological systems, infrastructure systems, financing systems, and weather systems. For all their benefits, which are certainly non-trivial, these efforts are vulnerable to the trap of focusing of scientific and material conceptions of systems (i.e. rivers, concrete, money, and rain) and losing sight that the systems are run by and meant to serve people. Markedly less attention has been given to the relationships between the people, plans, and policies that shape how land development patterns influence flood risks. We aim to address this gap by investigating local-level flood risk reduction planning and implementation, with particular attention to two questions:

- Do the people involved in local flood risk reduction efforts function as integrated and mutually supporting networks or as isolated individuals?
- Do local flood-related plans and policies function as integrated and mutually supporting networks or as isolated, stand-alone, and even contradictory efforts?

To answer these questions, we apply concepts and analytical approaches from network science, which have gained increase attention and traction in planning in recent years (Albrechts and Mandlebaum 2007, Innes and Booher 2010, Dempwolf and Lyles 2013, Lyles 2015, Berke et al. 2019). Our research design involved selecting six localities in a region of the country highly vulnerable to flood risks: the southern plains. The localities were chosen to offer multiple layers of comparison: within and between states (AR, OK, and TX), within and between population sizes, and within and between participation in the most prominent incentive-based federal program for flood risk reduction: the Community Rating System run by the Federal Emergency Management Agency. For each locale, we systematically applied content analysis approaches to the flood-related plans, focusing on land use policies, cross-referencing of other relevant plans, and stakeholder engagement in the plans. We also conducted semi-structured interviews with key stakeholders, including emergency managers and planners, paying particular attention to the 'soft skills' like emotional and social intelligence that too often are ignored when investigating planning relationships. Our analytical approach consisted of comparative case studies that identify the structure and quality of the relationships that make up the networks of plans, policies, and people.

Our findings identify important commonalities across the cases, notably underwhelming levels of

relationships among the plan documents and land use policies with each community. They also point to important variations as well, though, including some provocative dynamics responsible the remarkable success in flood risk reduction over a multi-decadal time period of one locale in particular, Tulsa. Our findings reinforce and extend previous research that has shown fragmented and disconnected local risk-reduction networks and point to problems when planners play secondary roles to emergency managers in the realm of hazard mitigation (c.f. Lyles 2015). The scope of implications of this study extend from local planner behavior to federal policy, especially when considered in the context of the last two decades' research on hazard mitigation and the growing attention to climate change.

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Key Words: networks, plan evaluation, hazard mitigation, floods, land use

A "NETWORK OF PLANS" ANALYSIS OF SUPERSTORM SANDY RECOVERY PLANS IN NEW YORK CITY
Abstract ID: 112
Abstract within Pre-Organized Session 29

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The aftermath of a major disaster is a time of urgency. Planning activity reaches a fever pitch as many plans are made to address many different issues due to an atypical need for analysis and decisions. A lot of planning is happening, many issues must be addressed, and coordination is difficult, and this period has sometimes been likened to the "fog of war" (Olshansky and Johnson 2010). But while we know WHY so many plans are created in the aftermath of a disaster, we do not necessarily understand the utility of creating multiple plans or how we might harness their existence in more effective ways. This project analyzes post-disaster plan-making activity in New York City after Superstorm Sandy to unpack the benefits and challenges created by the existence of this network of overlapping, though not necessarily coordinated, plans.

Superstorm Sandy struck the east coast of the US on October 29th 2012, devastating parts of New York City. While it has many spatial and policy plans and produces more every year, it is notable that the city, does not, and has never had, a comprehensive plan. Indeed, in 2019 the city's Charter Revision Commission chose not to include a potential question on the November 2019 ballot that would have required the city to create a regularly updated comprehensive plan if approved by voters.

The city, state and civic actors created dozens of new plans – some citywide and some neighborhood-focused – in the aftermath of Sandy (Finn et al. 2019). Most of these plans address not just short-term

recovery but also long-term resiliency and many other issues from economic development to housing policy and social services. Thus, while existence of these multiple plans may represent redundancy and conflict, they may illustrate potential opportunities for coordination, gap analysis and other beneficial actions that would harness the somewhat paradoxical window of opportunity for action presented by a catastrophic disaster. Especially in the case of a city like New York with no over-arching comprehensive planning strategy, the aggregated importance of these many smaller plans is of great importance.

Taking as a given that plans always exist in systems or networks (Finn, Hopkins and Wempe 2007) and not in isolation, we analyze these post-Sandy recovery/resilience plans using a variety of spatial and content analysis techniques (e.g. Berke, Smith and Lyles 2012; Woodruff 2018) to ask a series of questions including: What are the specific types of issues that these plans address? To what degree do these nominally "recovery"-focused plans overlap with content typically expected to be found in other plans? What are the notable spatial gaps in plan coverage? To what degree do the plans share, acknowledge, complement, support or contradict the projects and policies found in other plans? In short, we seek to better understand the utility of using post-disaster recovery plans as a tool for addressing comprehensive resilience and other municipal goals more broadly. Findings from this analysis will help us better understand the role of disaster recovery plans as they relate to broader community development goals and create a more nuanced knowledge base for how the recovery planning process can be refined for future disaster events to be more effective as both a recovery activity as well as helping build long-term resiliency.

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Key Words: hazards, disaster recovery, resiliency, climate change

PHIL'S PRESENTATION TITLE: INTEGRATING RESILIENCE INTO NETWORKS OF PLANS: THE EXPERIENCE OF THREE COASTAL CITIES
Abstract ID: 113
Abstract within Pre-Organized Session 29

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Planning to reduce risks from hazards is often isolated from other planning initiatives governing land use and development in hazardous areas. Arguably, the disconnect is one of the major causes of the exponential rise in losses to disasters for much of the past five decades, losses likely to increase due to climate change. To address this concern, organizations representing science (National Research Council 2014) and planning practice (American Planning Association 2018) recommend development of a new tools and practices that enable communities to improve integration of risk reduction policies across plans adopted by different agencies.

In the is paper, we chronicle and critically examine engagement experiences of three pilot communities at risk to floods and sea level rise – Nashua, NH; Norfolk, VA; and Rockport, TX – that tested application of a Plan Integration for Resilience Scorecard™ (PIRS), first introduced by Berke and colleagues (Berke et al. 2015). The scorecard allows local planners and staff of agencies responsible for planning (emergency management, housing, infrastructure) to determine whether the goals of local plans conflict and actually increase risk to floods and sea level rise; and, the degree to which local plans recognize or respond to the physical and social vulnerability in different geographic areas and populations.

Our objectives are to determine the degree to which the Resilience Scorecard process:

1. Produces changes in local capacity to plan for reducing the destructive effects of hazards. Indicators of capacity include use of new technologies to better incorporate scientific information and local experiential knowledge into planning, improvement in cross agency communication and coordination, and greater stakeholder support for their communities to be more equitable, resilient and adaptive; and
2. Generates outcomes that are expected to achieve the intended effects of the scorecard. Indicators of outcomes include improved integration of risk reduction policies across plans, stronger development regulations and expanded public investments, and reduction in levels of vulnerability to structures and populations at the neighborhood scale.

The project was undertaken by the authors of this report that consisted of a partnership between researchers at the University of North Carolina and Texas A&M, and community engagement planners at Texas Target Communities, a community development organization at Texas A&M. We use a participatory action research (PAR) methodology throughout the Resilience Scorecard process by working with each pilot community in conducting training workshop and advising in revisions of plans and implementation actions. We supplemented PAR with interviews of local teams of plan evaluators, crowdsourcing information linked to community experience with hazards, email notifications of public events, and electronic communication platforms that display relevant reports and revisions of planning documents.

The pilot community experiences indicate that communities can use the scorecard to learn about the degree of coordination among policies of different local plans and the impacts of the network of local plans on risk. The scorecard provided valuable insight on the policies and goals that unintentionally raise the risk of certain areas and populations, especially in the poorest and most socially vulnerable neighborhoods. This gave planners from different agencies the ability to ask crucial policy questions about goals and priorities and how to improve the integration of multiple local plans. The process also gave local leaders a chance to take ownership of scorecard results. As a consequence, the process succeeded in raising understanding and support for resilience planning and adaptation, and in the adoption of better integrated policies and implementation actions.

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Key Words: planning, climate, adaptation, resilience

PLANNING RESEARCH AND PRACTICE FOR EXTREME HEAT

Pre-Organized Session 30 - Summary
Session Includes 127, 128, 129, 130, 131

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Extreme heat is an increasing climate risk for cities across the world due to both the urban heat island (UHI) effect and climate change. While other climate events may often garner more media attention, extreme heat is the deadliest of all climate risks, particularly to vulnerable populations such as children, elderly, and those with lower income. Other impacts include a decline in quality of life, an increase in mental health and behavioral disorders, declines in economic productivity, an increase in stress to urban ecology, an increase in water and energy usage, and additional strain on urban infrastructure. Phoenix Mayor Stanton called extreme heat "…a public health crisis," and Los Angeles Mayor Garcetti framed shade as "an equity issue." Only recently has research focused more on how planners approach extreme heat, which has implications for practice. An assessment of over 3,500 climate adaptation resources in the U.S. found that only 4 percent specifically focused on extreme heat (Nordgren, Stults, & Meerow, 2016). This session will explore diverse perspectives in the current state and innovations in planning research and practice for extreme heat.

Objectives:

- Attendees will learn the current state and innovations in planning for extreme heat.
- Attendees will gain insight from diverse disciplinary perspectives on extreme heat, including public policy, public health, and climate services.
- Future directions for extreme heat research will be identified and discussed.

PLANNING FOR EXTREME HEAT: A NATIONAL SURVEY OF U.S. PLANNERS

Abstract ID: 127
Abstract within Pre-Organized Session 30

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Extreme heat is already the deadliest climate risk in the United States and negatively impacting communities around the world. The combination of climate change and the urban heat island effect is increasing the number of dangerously hot days in cities and the need for them to mitigate and plan for resilience to extreme heat. Given this increased focus and urgency, a better understanding of the current state of heat planning research and practice is needed. We conducted a systematic literature review of the peer-reviewed literature on heat planning. This showed that most of the literature focuses on heat island mapping and modeling, while few studies delve into extreme heat planning and governance processes. We therefore surveyed planning professionals to examine how heat risk perceptions, current planning activities, and barriers to action vary across the county. The same survey was conducted on two different samples: 1) a stratified random sample of planners working for U.S. cities from different regions and of different population sizes (n=69); and 2) a convenience sample of planners who are members of relevant professional networks (n=114). The survey was co-produced with input from planners, designers, and climate service providers to establish important baseline information for a growing area of planning practice and scholarship. Survey results reveal how different cities and sectors are impacted by extreme heat, the planning and design strategies that communities have pursued to mitigate those impacts, barriers to advancing heat planning efforts, and heat information sources and needs. We also look at how different individual characteristics, such as planning specialization and employer type, are related to planners' perceptions of heat risks.

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Key Words: urban resilience, extreme heat, climate change, adaptation, hazards

HOW ARE CITIES PLANNING FOR HEAT? A NATIONAL ASSESSMENT MUNICIPAL PLANS
Abstract ID: 128
Abstract within Pre-Organized Session 30

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Heat is a central environmental, public health, and social justice concern in cities. Urban regions are already hotter than surrounding undeveloped areas due to the Urban Heat Island (UHI), extreme heat events are predicted to increase with climate change, and heat impacts disproportionately affect disadvantaged communities. In response, some cities have begun to incorporate cooling strategies into official planning documents as part of broader climate planning efforts. Outdoor cooling through urban design interventions like urban greening and cool surfaces is of central interest due to several potential co-benefits. These include mitigating UHI, improving pedestrian thermal comfort to encourage active transportation, and reducing indoor energy demand. Yet, heat is a multifaceted concept and the effectiveness of outdoor cooling strategies are scale, context, and regionally dependent (Georgescu 2014, Martilli 2020). Lack of nuance in heat policy could promote "panaceas": strategies that are likely to fail because they assume too much similarity in context (Ostrom 2007).

Through a content analysis of 228 municipal planning documents spanning 70 cities across the United States, this study addresses three interrelated questions: (1) Which heat related problems are cities incorporating into planning documents? (2) Which hard (e.g., green infrastructure) and soft strategies (e.g., education, studies) are cities planning to implement to address those challenges? (3) How does problem framing and strategy selection vary by climate region (National Climate Assessment), plan type (Hazard Mitigation, Climate Action, Sustainability, Resilience, Infrastructure, General Plans, Other), and membership in national/international networks (Urban Sustainability Directors Network, Rockefeller 100 Resilience Cities, and Cities Climate Leadership Group, C40)?, and (4) To what extent do the strategies suggested actually address the problems invoked according to urban climate science? We hypothesize that strategies will conflate multiple dimensions of heat—land, air, and surface temperature—which operate differently across scales, leading to claims of co-benefits across heat related goals that are not scientifically supported. Moreover, we hypothesize that regional differences in urban heat dynamics will not be considered.

We found that more than half of the municipal planning documents analyzed (59%, n=134) contain at least one statement mentioning heat. The most pervasive goal statements pertained to adapting to extreme heat events or mitigating urban heat island. Soft interventions like education and outreach were more pervasive than infrastructure interventions, but many statements contained no soft or infrastructure intervention was prescribed at all. This reflects the fact that addressing urban heat was most frequently

mentioned as a co-benefit of broader efforts to vegetate the city. Many documents addressed vulnerability, variously defined, but mostly focused on exposure as opposed to sensitivity or adaptive capacity, and mentions of equity were infrequent. Finally, while explicit misinterpretations of urban climate science were rare, vague generalizations were pervasive and could potentially lead to misinterpretations in translation to policy.

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Key Words: Heat, Urban Climate, Plan Evaluation, Panacea, Social-ecological Systems

EVALUATING THE USE OF URBAN HEAT ISLAND MAPS FOR EXTREME HEAT PLANNING
Abstract ID: 129
Abstract within Pre-Organized Session 30

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The impacts of extreme heat to cities and urban systems are well documented, including an increase in mortality, a decrease in quality of life, additional stresses on urban infrastructure and ecology, reductions to economic productivity, and increased energy and water usage. A growing number of cities concerned about the increasing risk of extreme heat, due to climate change and the urban heat island (UHI) effect (Oke, 1995), seek to increase extreme heat resilience through strategies such as increasing urban forestry canopies, reducing paved surfaces, and increasing shade. Despite the current interest in these strategies, there is a lack of resources and information available for planners related to extreme heat. One assessment of 3,500 climate adaptation resources in the U.S. found only 4 percent specifically referred to extreme heat (Nordgren et al., 2016). UHI maps are one of the best-known tools for planners for extreme heat, but the maps are diverse in their development methodology and in what and how they display information (Mirzaei, 2015). There are also legitimate questions about the usefulness of UHI intensity for decision-making (Martilli et al., 2020). As planners weigh these extreme heat-related policies and strategies, a better understanding of the uses and limitations of UHI maps for planners is needed.

We utilized an exploratory multi-case study approach to document the current use of UHI maps by planners in Arizona and New Mexico and evaluate challenges and opportunities related to their usability. Out of 44 communities in the two states with populations above 20,000 included in the initial scoping, we identified four cities with UHI map use, including Albuquerque, NM, Las Cruces, NM, Phoenix, AZ, and Tucson, AZ. We systematically collected information on map development, map users, and policies and strategies created with referral to the maps. We also worked iteratively with four additional pilot communities in the coproduction of new UHI maps as an additional way to explore UHI map development and use.

This study provides several important findings related to UHI map development and use for planning researchers and practitioners. Several challenges with UHI maps included concerns over their appropriate use, accuracy, and reliability for planning purposes. The maps were not updated once created and did not reflect changes in the built environment or vegetation over time. There was also inconsistent buy-in across the departments in the case studies, although the public availability of Tucson's UHI map allowed

it to referred to by external groups such as non-profits. Finally, the UHI maps had a wide range of displays which limited the ability of the communities to learn from their peers. Despite these challenges, we documented the use of UHI maps as a boundary object (Wenger, 2000) in the case study communities, where they served an important role in bringing diverse stakeholders together to discuss and plan for extreme heat. During the creation of new UHI maps for the four pilot communities, the maps also provided an opportunity to increase stakeholder awareness and understanding of extreme heat risk and interdisciplinary strategies to increase resilience. More research on the use and limitations of tools, such as UHI maps, that planners have available to inform decision-making is critical as cities seek to increase resilience to climate impacts such as extreme heat.

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Key Words: urban heat island, extreme heat, climate adaptation, urban resilience, urban heat island map

SYNTHESIS OF CLIMATE-ADAPTIVE DESIGN IN OUTDOOR PHYSICAL ACTIVITY SPACES FOR HEALTH EQUITY
Abstract ID: 130
Abstract within Pre-Organized Session 30

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Active living research has repeatedly demonstrated the importance of built environments in supporting healthy habits. Two public outdoor physical activity spaces are particularly important: active transportation is an essential source of physical activity while parks and schools are critical outdoor recreation spaces. Avoiding outdoor spaces during prolonged extreme heat to manage health risks may result in less physical activity for long periods and thus increase chronic disease risk. This urgent paradox has been inadequately studied despite considerable health equity implications. Communities of color and low-income communities are at higher risk of chronic disease and premature mortality (World Health Organization, 2008). Further, children and older adults have a higher heat health risk (Mayrhuber et al., 2018). These groups are more likely to be dependent on public, outdoor physical activity spaces; more likely to live in urban heat islands (Mayrhuber et al., 2018); and generally have reduced access to active transportation (Adkins et al., 2017) and public, outdoor recreation (Jennings et al., 2019) facilities.

Objectives/Methods: This paper reviews the state of the literature for the intersection of physical activity with climate science. Particular attention is paid to understanding the state of the science for managing heat health through climate-adaptive design in public physical activity spaces. Understanding this multidisciplinary space required reviewing several distinct fields (urban planning, public health, climate science, and landscape architecture) and literatures including but not limited to: active living and active transportation; urban heat islands and heat health; and microscale design and thermal comfort. Using a flexible and snowball keyword approach, this paper reports on several literature searches performed over the past year to define this emerging field. For example, to understand the implications of climate science on pedestrian spaces, variations of ((health OR climate) AND (physical activity OR utilization) AND

(pedestrian)) were used in a literature search of PubMed and WebofScience. Similar searches were also employed for playgrounds and for greening along active transportation and/or park facilities.

Results: Heat-health is an important consideration for active living, public health, planning, and climate researchers and professionals. Heat-health is often mentioned as the rationale for examining design features of outdoor public spaces when attention is paid to thermal comfort. However, the vast majority of the literature stops short of linking neighborhood or microscale design features to physical activity or health outcomes. The topical literature can be organized by design features: shade and vegetation; surface materials; and presence of water in public recreation spaces. The science indicates that each design feature influences both temperature and thermal comfort and thus likely impacts physical activity levels. Research on shade, in general, and vegetative shade, in particular, appears to be the most developed. Heat risk on playgrounds for children is also growing but does not explicitly examine physical activity levels. Indeed, there is almost no literature examining temperature or thermal comfort and resulting utilization and physical activity of public physical activity spaces. A conceptual map helps delineate these links and organize future research and practice needs.

Conclusions: While some literature examined design features and influence on temperatures or thermal comfort in public physical activity space, very little explicitly links design to physical activity. Research about how best to support public active transportation and recreation in extreme heat situations is needed. With climate change increasing risks, practitioners will need guidance in designing outdoor, public physical activity spaces with extreme heat and heatwaves in mind to maximize healthy habits.

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Key Words: heat health, physical activity, active living, health equity

HEAT EQUITY AND INTER-SECTORAL MANAGEMENT OF THE THERMAL ENVIRONMENT
Abstract ID: 131
Abstract within Pre-Organized Session 30

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Climate change has its roots in economic change – the industrialization and carbonization of our economic processes, with concomitant development of cities. Due to their biophysical landscape, it is those cities which are now particularly susceptible to heat islands, intense flooding, sea level rise and other forms of extreme weather. But which cities are able to harness resources to aid in recovery and to which social groups within cities those resources get directed is a matter of politics, power and exclusionary practices. Examining how social separateness that forms unequal climate burden is embedded in planning, policy and economic practices across sectors is crucial for transforming those institutions to design adaptation strategies that protect vulnerable communities from extreme weather.

Here, I explore the role of social separateness in producing spatial heat injustice and heat inequity. In the

United States, extreme heat is a leading weather-related killer, contributes to thousands of emergency department visits and hospitalizations, and adversely impacts many people's quality of life. And yet, heat impact is not typically addressed proactively—among the list of factors that an environmental impact statement must consider, for instance. Nor do we have an adequate understanding of the pathways through which heat inequity is produced and reproduced. Nonetheless, in support of efforts to protect people against heat, heat vulnerability scholarship in fields of urban planning, public health, geography, urban ecology and related disciplines has focused on describing geographic and temporal patterns of heat vulnerability and outcome distribution, as well as social correlates of those patterns. I argue that more full integration of environmental justice theory into this vulnerability scholarship holds potential to produce more equitable outcomes in climate, and particularly heat justice.

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Key Words: Heat inequity, Environmental justice, Urban climate, Climate inequity

CLIMATE JUST CITIES & REGIONS
Pre-Organized Session 66 - Summary
Session Includes 326, 327, 328, 687, 727

FITZGERALD, Joan [Northeastern University] jo.fitzgerald@neu.edu, organizer

Urban climate action cannot be undertaken in isolation from the interconnected issues of poverty, racial division, and gentrification evident in so many cities. While many mayors say they are committed to reducing poverty and income inequality and to climate action, few city leaders are connecting the two issues. This panel examines aspects of climate action and social justice: how do we measure and evaluate equity as a goal of climate action? What is the relationship between climate investments and displacement pressures? How does urban climate action framed as a green new deal differ?

Objectives:

- understand linkages between climate action and social equity
- understand how climate action can lead to gentrification
- understand how "green new deal" approaches changes urban climate action

DOUBLE JEOPARDY: THE UNINTENDED EFFECTS OF CLIMATE CHANGE MITIGATION
Abstract ID: 326
Abstract within Pre-Organized Session 66

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California leads the nation in legislation, programming, investments and research to reduce greenhouse gas emissions and mitigate the negative effects of climate change. From coordinated land use and transportation planning, to climate investments made possible by the Cap and Trade program, California is investing in a wide range of housing, active transportation, complete streets, and transit in low-income and vulnerable communities. While climate investments have the potential to transform these neighborhoods towards more sustainable land use and transportation patterns, they also may have impacts on displacement, creating a double jeopardy situation. If vulnerable residents are displaced due to climate

investments, mitigation strategies may not just further disadvantage already disadvantaged populations, but also endanger climate goals if displacement shifts residents to lower resourced neighborhoods with relatively poor accessibility. Furthermore, the potential impacts of different types of investments still remain unclear. To the extent that they provide new amenities, climate investments may raise local land values, which could then impact local rent levels and destabilize communities.

Previous studies have attempted to examine investment-related displacement, but with limitations, and thus inconclusive results. Studies of the relationship between transit station proximity and change in low-income households found mixed effects depending on station location within the region (Boarnet et al. 2017, Chapple et al. 2017); these studies were both limited to rail transit and did not examine other types of investments, whether market-rate or public sector. Thus, studies to date have not been able to examine the impact of investments on housing stability in many of the disadvantaged communities, raising questions that then may contribute to political conflict and impede the passage of legislation.

This study estimates the relationship between climate investments and displacement pressures. Three research questions will be addressed. First, what features of climate mitigation investments are associated with declines in housing affordability in surrounding neighborhoods? Second, what features of climate mitigation investments are associated with displacement of low credit-score households? Third, how can our understanding of the impact of mitigation investments be incorporated into a predictive model? Focusing on three regions, the Bay area, Los Angeles County, and Fresno County, we characterize representative investment projects, and generate a typology of climate investments related to infill housing and sustainable community investments. Relying on Zillow data and subsidized housing data from the California Housing Partnership Corporation (CHPC), we develop block-level data of housing developments to explore the unintended affordability impacts of investments. These data sets are then merged with the Infogroup data which allow us to examine residential mobility patterns associated with climate investments. Exploring the role of a variety of investments, across diverse geographies with use of fine-grained data on investments, housing, and households, we expect to effectively predict and mitigate the displacement impacts of future investments.

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Key Words: Climate change, climate investments, housing affordability, displacement

HOW NEW IS THE GREEN NEW DEAL? TRACING THE CONSTRAINTS OF 'SUSTAINABLE DEVELOPMENT' THROUGH A NEW ERA OF ENVIRONMENTAL PLANNING"
Abstract ID: 327
Abstract within Pre-Organized Session 66

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In 1996, Scott Campbell influentially argued, via his conceptualization of the planner's triangle, that the emerging framework of sustainable development contained inherent conflicts; the economic, environmental, and equity pillars of sustainability could not easily be advanced simultaneously. In the decades since, Campbell's observations have been echoed and amplified by theorists and empirical researchers. Researchers evaluating environmental plans from sustainability to climate adaptation have argued that the three components do not have equal power or legitimacy in policy-making: development interests dominate, usually subjugating environmental and social justice goals (Anguelovski et al. 2016; Berke and Conroy 2000). Ecological economists argue that infinite economic growth exacts increasing costs on a finite planet, and thus cannot resolve environmental crisis or social inequality (Daly 2002). Critical geographers argue the project of capitalism necessarily depends on the exploitation of bodies (especially non-white bodies) and nature, making economic growth under capitalism inherently incompatible with environmental protection or social justice (Pulido 2017).

The green new deal promises a way out of the intractable contradictions of sustainability. But can it be operationalized? Can the conceptual framing of the green new deal provide planners with a path towards equitable mitigation of the climate catastrophe and associated environmental crises?

To determine the extent to which the Green New Deal offers something substantively different from a prior generation of sustainability planning, we have undertaken a deep read of recently adopted Green New Deal legislation and plans from Los Angeles, New York City, and Seattle. We employ a grounded theory approach in our analysis as a way to identify driving interests, priorities, and potential conflicts within the plans.

Early evidence suggests that by centering social equity and climate mitigation and reframing economic growth as green jobs, the plans short circuit some of the conflicts that Scott identified in 1996. However, some key conflicts remain, and the plans also appear likely to get caught in a new set of intractable tensions.

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Key Words: Green New Deal, Sustainability, Planner's Triangle

JUST DECARBONIZATION TO COMBAT DEEP-SEATED REGIONAL POVERTY: THE REGIONAL CASE
Abstract ID: 328
Abstract within Pre-Organized Session 66

GLASMEIER, Amy [Massachusetts Institute of Technology] amyglas@mit.edu, presenting author

Defeating Two Birds with One Stone: Can Decarbonization Polices Counter Decades of Economic Malaise

Decarbonization calls for a radical reshaping of the U.S. energy system. To circumvent intensifying damage accompanying climate change requires fossil fuel producing regions to abandon their long-held means of livelihood generation. On the surface, shifting out of resource extractive industries offers the potential to unshackle rural areas from the grip of environmentally compromising sectors. Perhaps even more beneficial, abandoning fossil resource production could lead the way toward a new social system unhindered by the effects of the "resource curse." Beyond environmental problems with few exceptions, resource extractive industries of the 20th-century have embodied a form of economic development that benefits the few, the wealthy, and the powerful. Left in its wake are high levels of poverty, stunted economies, and compromised institutions undergirding norms and practices. And yet, for decades and even centuries, resource extraction represents well-worn ways of life for generations of rural families. Shifting from carbon-intensive activities to alternatives will be difficult and costly. Conventional development regimes can shed light on the recalcitrance of deep-seated poverty in these regions. Far more challenging and less well-tested are development tools that address the transformation of the underlying social structures accompanying extractive industries. Efforts to transform dependent territories leave little doubt that ill-considered gestures serve only to reinforce rather than redirect local economies toward more sustainable pathways. With more than 60 years of experience, the case of Appalachia serves as a reminder of the necessity to maintain realistic expectations as well as to embrace the necessary patience to support the formation of institutions and practices capable of overcoming decades of malaise. Reviewing more than a half-century of well-documented research can offer insights into practices that lead not only to impartial adjustment but, more importantly, the just transformation of the fabric of oppression that otherwise accompanies resource development.

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- Economic Development Potential of Conventional and Potential Alternative Energy Sources in Appalachian Counties June 2006 Glasmeier, Amy and Tom Bell Pennsylvania State University This report examines the economic development potential of energy resources in Appalachia. Abstract & Report Contents Full Report in PDF (4.7 MB)
- Trends in National and Regional Economic Distress: 1960-2000 April 2005 Wood, Lawrence E. Ohio University This report analyzes recent demographic data to examine the factors explaining the graduation of distressed counties and the persistence of distress in Appalachia and other regions of the U.S. Abstract & Report Contents Full Report in PDF (1.7 MB)

Key Words: poverty, decarbonization, Appalachia, rural, inequality

COORDINATING LOCAL PATHWAYS TOWARDS DEEP DECARBONIZATION THROUGHOUT THE UNITED STATES
Abstract ID: 687
Abstract within Pre-Organized Session 66

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Multiple, recent studies of pathways to eliminate the carbon emissions of the United States – a goal known as deep decarbonization – find that the U.S. must reduce approximately half of its future energy

consumption with increased efficiency and use, and replace the remaining half with decarbonized electricity and other fuels from clean resources. Pursuing any of these pathways will require three things: first, the dismantling or repurposing of fossil fuel infrastructure; second, the building of new renewable resources and efficient systems of use; and, third, any new systems must be climate-resilient. Places differ in their existing level of investment in fossil fuels, renewable potential, and climate risk, but coordinating both efforts and energy between cities, regions, and states will be faster, more efficient, and probably more equitable.

This paper therefore combines these criteria with existing data sources to analyze the potential of different cities, regions, and states to contribute to any economy- or nation-wide effort towards eliminating carbon emissions. We analyze fossil fuel data from the U.S. Energy Information Administration, renewable potential information from the National Renewable Energy Laboratory, employment and industry data from the Bureau of Labor Statistics, and climate risk data from the firm 472mt, in addition to data about populations and growth from the U.S. Census. We then use data clustering methods and mapping overlays to identify diverse but complementary strategies for different localities, and then discuss how the approach of representative cities, regions, and states in order to illustrate the possibilities for local climate actions to be coordinated at a national scale. Identifying representative cities, regions and states can help other similar localities to decide how to contribute best to a national effort towards deep decarbonization.

The paper concludes by arguing that planners should be leading efforts to think through some of the local land-use implications of building new renewable energy resources, dismantling or repurposing fossil fuel infrastructure, and planning for future climate risks to the energy system. Furthermore, given recent discussion of the National Environmental Policy Act (NEPA) and an upcoming Supreme Court decision over pipeline siting, coordinating local actions with national strategies has become an increasingly important and contentious issue. The paper concludes by discussing some of the federal legislation and national-level efforts necessary to enable these local actions.

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Key Words: Deep decarbonization, Local government, Local land-use planning, Climate action, Climate risk

MEASURING THE CLIMATE-EQUITY LINK
Abstract ID: 727
Abstract within Pre-Organized Session 66

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What is a Climate Just City?

Climate justice is a framework that focuses on how the effects of climate change are unevenly distributed

within cities. Building on Susan Fainstein's The Just City, which examines how principles of equity, diversity and democracy can underpin urban planning, an emerging climate-just cities framework calls for integrating considerations of social, environmental and ecological justice into urban climate action planning (Steele et al, 2020). While the focus often is on climate adaptation, climate justice is also a concern with respect to mitigation. For example, the energy democracy movement calls for integrative policies that link social justice and economic equity with renewable energy transitions (Burke and Stephens, 2017). Yet equity is a relatively low priority of most U.S. climate action and related plans and there are few attempts to measure the extent to which equity is integrated into climate action. We attempt to fill that gap by developing an instrument to assess the extent to which urban climate mitigation and adaptation are planned and applying it to Boston's climate action planning. The goal of our exercise is to create a self-assessment tool for cities as part of a broader project that identifies leading practices for making equity a priority of urban climate action. This study builds on a slim literature on how cities incorporate environmental justice concerns in climate planning.

Finn and McCormick's (2011) examination of the climate plans of the three largest U.S. cities concludes that environmental justice is not a focus. They measured this by investigating the historical and political contexts surrounding plan development and adoption then analyzing the plans to determine how many times they explicitly or strongly implicitly. The analysis was done by examining the inclusion of local knowledge and agency and their relationship to social equity by counting the number of times each term is mentioned. Bulkeley and Castán Brato's (2013) international survey of more than 100 cities implementing climate change experiments found that about one fourth included environmental justice concerns. They counted explicit mentions of procedural, individual, and collective justice relating to environmental concerns as illustrating environmental justice. Schrock, Bassett and Green (2015) concluded that equity was a relatively low priority of the 28 U.S. cities they examined. Raters counted instances of equity in the plans and whether it was a problem, goal or action item. Plans were then assigned a score based on the rater's evaluation of the quantity and quality of the equity concerns and actions. Following Bullard (1994), equity was defined in three ways: procedural (public participation), geographic (across neighborhoods), and social (race, ethnicity, income) (Schrock, Bassett, and Green, 2015: 286).

Building on Schrock et al., Waud (2018) examines whether social justice, defined by keywords, is identified as a problem, goal, or action, in the climate action plans of 19 Carbon Neutral Cities Alliance global member cities. She differentiates three categories of inclusion: absent, isolated, or integrated. The isolated category refers to plans in which equity considerations are contained in a separate section, with little or no integration with action items, while integrated plans have equity as a key principle integrated into all components of the plan and its action steps. Waud found that only six of the nine U.S. city plans she reviewed had a fully integrated equity agenda. These six U.S. cities were rated by highlighting sections of the plan that included mentions of social justice or climate equity. The sections were then evaluated by determining if the sections on equity included multiple themes. These themes included sustainability, social development, economic inclusion, and health equity. If the plan mentioned more than one theme of equity, it was placed in the "integrated category." The author mentions that this work is the first step toward examining equity in climate change mitigation/adaptation planning research. A shortcoming of these studies is that they only measure whether equity and social justice are mentioned. Second, they only analyze the climate action plan, so mentions of equity or social justice in related plans is overlooked. Boston, for example, has 10 climate-related plans in addition to its Climate Action Plan. A third shortcoming is that they don't require that the city measure its progress on equity goals. A fourth shortcoming is that they don't examine the role of participation of low-income communities in developing the plan and determining priorities and goals for their communities. Despite these shortcomings, these studies are the first step in analyzing how justice/equity is incorporated, but require studies of implementation to determine the outcomes achieved. This Boston case study analyzes implementation to identify the effectiveness of climate action that attempts to address equity concerns of residents.

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Key Words: urban climate action, climate justice, urban sustainability, energy justice

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TRACK 4 - ROUNDTABLES

COMMUNITY ENERGY PLANNING: FROM CONCEPT TO IMPLEMENTATION
Abstract ID: 215
Roundtable

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FARBRIDGE, Karen [Karen Farbridge and Associate] karen@karenfarbridge.ca, participant
ERGUN, Deniz [Town of Oakville] deniz.ergun@oakville.ca, participant
MCVEY, Ian [Region of Durham] ian.mcvey@durham.ca, participant

Community energy planning, alternatively referred to as local or municipal energy planning, represents "a process to develop strategic vision documents that outline the energy goals of a local context" and is a growing trend internationally and in Canada. As a common component or extension of local climate change mitigation and adaptation planning, Community Energy Plans (CEPs) have gained importance as local governments move to address the impacts of climate change and reduce greenhouse gas (GHG) emissions. CEPs offer a structure to integrate considerations around urban form, transportation, energy sources, buildings, and climate change mitigation and adaptation into coherent and integrated community-level strategies. As such CEPs offer substantial potential to advance community and energy sustainability.

CEPs involve complex interactions between local and senior levels of government, publicly and privately-owned utilities, developers, building owners and operators, transportation service providers, community organizations and individual residents. They may engage with federal and provincial policy frameworks around climate change, energy and land-use in varying ways. These policy frameworks have themselves traditionally been relatively disconnected, particularly around the linkages between energy and land-use planning and urban form. The divided and territorialised energy systems that operate across different levels of government in Canada can impede CEP development and implementation.

The round table flows from the work of the Community Energy Knowledge and Action Partnership, or CEKAP. CEKAP is a SSHRC-funded partnership that has been established to facilitate collaboration between researchers, practitioners and community groups across Canada in the area of community energy planning.Core partners include five universities (Guelph, York, Western Ontario, Simon Fraser and Dalhousie) and seven municipalities across three Canadian provinces (Ontario, BC and Nova Scotia), QUEST Canada, a number of government and non-government knowledge mobilizers, policy & governance partners, and community partners. Together, the goal is to leverage techniques in community-based research and community engaged scholarship in order to identify pathways to improve the design and delivery of community energy plans across Canada. A special edition of the Canadian Planning and Policy Journal is under development, based on the key research findings from the CEKAP project.

The round table will feature speakers who have been involved in the CEKAP project and the development and implementation of community energy plans. Three of the participants (Ergun, McVey and Farbridge), have been directly involved in CEP development and implementation at the local level in Canada. The representative of QUEST will provide a national perspective on CEP development across Canada. The

academic participants (Winfield, Calvert) will provide insights on CEP as an exercise in multi-level, polycentric governance and on the role of municipal, academic and civil society partnerships in CEP development and implementation.

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Key Words: Community Energy Planning, Climate Change, Energy, Land-use, Transportation

INFORMING PUERTO RICO'S COMMUNITY RELOCATION PROGRAM: GLOBAL LESSONS FROM THE PAST
Abstract ID: 309
Roundtable

CHANDRASEKHAR, Divya [University of Utah] d.chandrasekhar@utah.edu, participant
OLSHANSKY, Robert [University of Illinois at Urbana-Champaign] robo@illinois.edu, moderator
GANAPATI, Nazife [Florida International University] emel.ganapati@gmail.com, participant
FINN, Donovan [Stony Brook University] Donovan.Finn@stonybrook.edu, participant
IUCHI, Kanako [Tohoku University] iuchi@irides.tohoku.ac.jp, participant
TORRES CORDERO, Ariam [University of Illinois at Urbana-Champaign] ariamlt2@illinois.edu, participant
BALACHANDRAN, Bala [University of Illinois at Urbana-Champaign] bbalach2@illinois.edu, participant
ZAVAR, Elyse [University of North Texas] Elyse.Zavar@unt.edu, participant

Devastated by Hurricane Maria in 2017, Puerto Rico has embarked on what could be the largest community relocation effort in U.S. history. The Repair, Reconstruction, or Relocation Program (R3) program, title notwithstanding, disallows in-situ elevation of structures, which de facto promotes relocation over reconstruction or repair. But how well is the program likely to perform? What are the factors that hinder or enable effective, sustainable, and just community relocation? This roundtable seeks to inform the R3 program by looking into the successes, failures and complexities of disaster relocation programs both domestically and abroad.

Post-disaster community relocation has long-lasting consequences for future settlement patterns, land use, economy, social structure, and local politics. Relocation planning in Puerto Rico however, faces many governance challenges. The commonwealth has a tense history with the mainland U.S. and the current White House administration. It was in the process of implementing a widely unpopular federally-driven austerity plan when Hurricane Maria hit. The commonwealth's central government is mired in corruption and largely opaque to its municipalities and citizens. In addition, the island has significant amounts of

informal construction, inadequate property deeds and titling, and has seen renewed seismic activity. More positively, the island has high levels of community and nonprofit activism, especially from diaspora organizations, and has seen a rise in insurgent planning.

This roundtable brings together experts with significant experience in disaster recovery studies across the world, including Japan, Philippines, India, Nepal, Indonesia, Turkey, New Zealand, Haiti, Ecuador, and the various parts of the U.S. to weigh in on the R3 Program. After an introduction to the problem, roundtable participants will consider the following questions:

1. What are important governance aspects for post-disaster community relocation programs?
2. What lessons have we learned from other cases about the processes and outcomes of disaster-induced relocation?
3. What are considered effective, sustainable, and just practices in relocation planning? and,
4. How might these practices be integrated into the R3 Program, its design and its implementation?

Panelists and moderators for the roundtable are as follows:

- Divya Chandrasekhar (organizer): Assistant Professor, Department of City & Metropolitan Planning, University of Utah.
- Robert B. Olshansky (moderator): Professor Emeritus of Urban and Regional Planning, University of Illinois at Urbana-Champaign.
- N. Emel Ganapati: Associate Professor in Public Policy and Administration at Florida International University
- Donovan Finn: Assistant Professor, School of Marine and Atmospheric Sciences, Stony Brook University
- Kanako Iuchi: Associate Professor, International Research Institute of Disaster Science (IRIDeS), Tohoku University.
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Key Words: disaster, relocation, community, policy, governance

TRACK 4 – INDIVIDUAL ABSTRACTS

VOLUNTARY PUBLIC CAMPAIGNS TO BENEFIT THE ENVIRONMENT: ASSESSING THE EFFECTIVENESS OF THE THERE IS NO POOP FAIRY CAMPAIGN
Abstract ID: 31
Individual Paper Submission

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In the arid southwestern United States (US), drought and maintenance of adequate water quality and quantity for human and ecosystem needs are ongoing concerns. The City of Albuquerque, in Bernalillo County, New Mexico, relies on the Rio Grande as a major water source for drinking, agriculture, business, industry, and recreation. As a strategy for keeping it clean and healthy, in 2014 Bernalillo County joined a growing number of communities in initiating the There Is No Poop Fairy campaign. Bernalillo County's goal with the voluntary campaign was to inform dog owners about the impact of their dogs' waste on the environment, specifically that uncollected dog waste can be transported by storm water into the Rio Grande where it causes water contamination and subsequent transmission of bacteria and disease. Historically, concentrations of the bacterium Escherichia coli (E.coli) in the Rio Grande have been high, but recent monitoring found a significant decrease in the E.coli concentration in the middle Rio Grande that runs through Albuquerque, allowing E.coli to be removed as an impairment. These findings led county officials to ask whether the There Is No Poop Fairy campaign contributed to improvements in water quality.

The effectiveness of policy used to govern pets and their owners is rarely studied, and scholars have not examined the effectiveness of the There Is No Poop Fairy campaign in motivating residents to clean up after their dogs. We conducted a community survey (*n*=502) in 2018-19 to better understand the effectiveness of the campaign in Bernalillo County and its influence on dog owner behavior. The survey also examined dog ownership practices, dog owners' feelings of responsibility for picking up their dogs' waste, and related topics. We used convenience and purposive sampling techniques and administered the survey at various sites throughout Bernalillo County. Excel was used to record the data and the open-source statistical software "R" was used to create all figures and tables and in testing for relationships between dog waste pick up frequency and a variety of demographic variables.

Despite our study's limitations, the data suggest that the There Is No Poop Fairy campaign was successful based on its reach (almost 70% of respondents had seen the sign), its influence on behavior (50% of dog owners reported increased pick up frequency after seeing the sign), and improved water quality in the Rio Grande. Increased age and education were associated with higher pick up frequencies. Pick up frequency also increased with the number of dog walks per week; a high number of weekly dog walks could lead to feelings of connectedness to the community, and it is possible that walking frequency could be seen as a surrogate for social connectedness or social capital. There was a clear association between increased environmental concern and pick up frequency, and those who believed that dog waste had a negative effect on water quality had the highest pick up frequencies. Our study may be one of the first to examine pick up frequency of waste from others' dogs, and our findings on this topic reinforce the idea of dog ownership as a driver of social capital. Though the short and simple message used by the campaign may have contributed to its success, we identify important aspects of the message that are being lost in the aim for simplicity and provide recommendations to improve the campaign's success. This research will contribute to the literatures related to dog ownership and policy in public spaces. The results will be of particular interest to planners in other communities who are interested in the There Is No Poop

Fairy campaign, which is gaining traction across the US.

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Key Words: Public survey, Public participation, Natural resources, Public health, Education

DISASTER HITS INEQUALITIES IN HOUSING RECOVERY: THE CASE OF GYEONGJU EARTHQUAKE IN SOUTH KOREA
Abstract ID: 47
Individual Paper Submission

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[Problems] This paper aims to analyze the impact of the earthquake on inequalities in housing recovery, because disasters can redress the preexisting inequality problems of low-income housing by affecting housing prices. Housing loss is central to understanding the impact of disasters on residents' ability to recover after the event. In particular, South Korea has shown that social inequality and polarization problems centered on land and housing are greater than other socio-economic factors due to the characteristics of high-population density. Low-income housing refers to housing that generates differential social vulnerabilities to cope and recover from natural disasters. In addition, as natural disasters indiscriminately affect communities, it is necessary to consider low-income housing loss in order not to exacerbate preexisting inequalities after disasters.

Previous studies have analyzed the relationship between natural disasters and residential property prices. Most studies have shown that natural disasters have a negative effect on these prices. However, some studies have shown that natural disasters have a positive effect on them. These conflicting analyses are a result from the lack of consideration given to the frequency of natural disasters at the analysis site. That is, in order to analyze the impact of natural disasters on inequalities in housing recovery, analyses must be carried out in areas that have not suffered natural disasters for many years or where there has been no damage previously (Tobin&Montz, 1994).

Research has shown how housing in lower-income areas suffers more damage and lags behind in the recovery process (Peacock et al, 2014). However, since social factors have different effects in different settings, there is a need to analyze the impact of disasters on housing equalities in areas that have been recognized as safe from disasters.

[Research Methodology] The geographical range of this paper covers Gyeongju in South Korea, which

has been recognized as safe from earthquakes in the past. The timescale of the analysis covers the 42 months before and after a 5.8 magnitude earthquake in September 2016. We report on empirical analysis in the South Korean case using longitudinal-multilevel modeling.

[Findings] The results of the analysis show that the earthquake has led to a decrease apartment prices in hazardous areas, and, after the earthquake prices have risen over time. In addition, longitudinal-multilevel analysis showed that low-income housing is more likely to suffer a greater loss and take a longer time to recover to pre-disaster conditions. That is, an earthquake's impact on housing loss is uneven for different types of housing.

[Policy Implications] As developments in hazardous areas continue, the potential for damage from disasters is growing (Berke, 1998). In addition, previous studies have shown that planning policies reduce losses from disasters by affecting land use in urban areas (Burby, 1999). In order not to exacerbate the inequalities that already exist in housing prices, planners must consider social vulnerability before integrating hazard mitigation plans into urban planning. In addition, as there is no system to disclose disaster-history information on residential real estate in South Korea, institutional improvements are required in order not to exacerbate inequalities.

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Key Words: Natural Disasters, Housing Inequalities, Recovery, South Korean Case

GROWING DENSER AND GREENER: THE TALE OF THE "EMERALD CITY"
Abstract ID: 65
Individual Paper Submission

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Seattle, Washington—the Emerald City, so-called for its distinct color and stunning natural beauty—has spent the past 25 years growing denser and taller in response to the state's 1992 Growth Management Act, or GMA (DeGrove 2005). The city lies at the heart of the Puget Sound and is at the epicenter of the region's state-mandated urban growth boundary, whose basic purpose it is to contain development by pushing it inward and upward. Despite the pressure of this urbanization policy, amplified by a massive tech-based agglomeration economy, Seattle has emerged as beautiful as ever: U.S. News and World Report ranks it in the top 10 cities nationwide, a score that is supported by scientific research on urban amenities (see Albouy 2008; Albouy and Lue 2015).

This paper argues that Seattle has achieved its high status, even while living up to the demands of the GMA, though careful attention to the intersection of urban and environmental planning. In particular, even as the city has pursued an intense strategy of urbanization, it has also pursued an innovative forestry program aimed at greening its density—across multifamily residential, commercial, mixed, and other land uses—that it has created. Just a casual glance at data redevelopment and tree plantings shows that the two activities correspond across both space and time. Yet, as a matter of policy, it remains unclear that these activities are functionally linked, raising several questions: (i) to what extent has Seattle consciously pursued urban forestry in parallel with its land use planning activities; (ii) how have tree planning and

related activities enabled the success of the city's innovative Urban Villages plan; (iii) what is the estimate social value (Wachter and Wong 2008) of the linkage; and (iv) what are the lessons for urban and environmental planners in other cities, working toward the goal of simultaneously promoting density and quality of life?

This paper responds to these questions via an analysis of redevelopment within Seattle since 1995. It begins by introducing the terms of the GMA, which have demanded much of the city, and explains the situation through the lens of theory on the consumer city (Glaeser et al 2001) and urban agglomeration (Glaeser 2008) economics. It then systematically explores the spatial and temporal correspondence of urban and forestry planning in Seattle in order to establish the connection, whether formal or happenstance, between the two. Finally, the paper implements a two-equation econometric model of the city's land market, designed to test the joint hypotheses that (i) urban and environmental planning are mutually-reinforcing, interdependent activities; and (ii) that substantive social value has been accumulated via their interplay. A set of generalized policy implications—keyed to cities, regions, and states—and directions for future research follow from the results.

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Key Words: Urban forestry, Land use, Redevelopment, Urban policy

LONG-TERM COMMUNITY RELOCATION AFTER TYPHOON HAIYAN – RESIDENTS' ADAPTIVE AND TRANSFORMATIVE DECISIONS
Abstract ID: 70
Individual Paper Submission

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Internationally, community relocation is increasingly considered after large-scale coastal disasters (Nalau & Handmer, 2018; UNHCR, 2014). When calamities struck, affected governments – both central and local – often support the idea of relocation in rebuilding to secure residents from future risk. Post-disaster relocation is increasingly studied, for instance, to understand how affected governments and communities make decisions whether to rebuild in-situ or relocate (Bukvic, A., Owen, G, 2017; Cong, Nejat, Liang, Pei, & Javid, 2018; Henry, 2013). These studies help governments understand when to adopt relocation post-disaster. However, post-disaster relocation aiming for future risk reduction has not been particularly successful.

This paper aims to understand how disaster-affected coastal residents targeted for relocation make and change their decisions regarding their permanent residence over time. The goal of this longitudinal study is to understand the decision-making mechanism of post-disaster relocation at the community level. After the 2013 typhoon Haiyan (local name Yolanda) devastated the coast, about 14,000 families who originally resided in the newly-defined no-dwelling zone in Tacloban City were targeted to relocate to an underutilized area in the City's north. Under the national socialized housing program (Republic Act 7279 of 1992), relocating residents were eligible to receive new affordable housing units in exchange for their previous informal residence. At the completion of the relocation project, the original, informal residences

along the coast was planned to be cleared as new residences will be provided inland, thus, reducing future coastal risk. However, six years of post-typhoon houses are still found in the no-dwelling zone, even though permanent houses are nearing completion.

This study focuses on the experiences of residents who originally lived along the coast before Haiyan and were targeted for relocation. Interviews were semi-structured and open-ended, with questions related to: i) resettlement process and outlook, ii) livelihood and housing changes before and after Haiyan, and iii) level of residential satisfaction at the time of each interview. On-site interviews were conducted twice a year – once in the coastal area and the other in the relocating area – totaling forty residents each time. To reduce the bias of community members' responses, as well as to interview in the local language warai, local university students were trained to interview together in the field. Interviews were repeated for five years before all the planned permanent housing was completed.

Analysis suggests that community relocation is not a linear development, but an organic, adaptive, and responsive process, as a result of residents seeking a sustainable living. In an earlier phase of relocation, residents strongly desired to distance themselves from the coast to avoid future hazard risk. Therefore, residents being relocated from the coastal areas to other sites were more satisfied compared to those waiting for their turn in the original coastal areas. Over time, residents' satisfaction levels began to correlate with the availability of daily life activities as opposed to mitigating future risk, and thus contentment increased in the original coastal sites. Towards the end of the study, residents in some relocation sites had finally begun to experience normal lives. As a result, their level of satisfaction slowly increased. Longitudinal observation also identified that the original sites were both a gateway for life activities and a financial burden due to the increase in commuting needs between the original and relocation sites.

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Key Words: Community relocation, Longitudinal study, Risk reduction, Coastal disasters, Typhoon Haiyan

WHY AND HOW DO CITIES PLAN FOR EXTREME HEAT?
Abstract ID: 83
Individual Paper Submission

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California, like most places, is facing a future with more extreme heat days and waves. There is some evidence about why and how U.S. cities engage in climate adaptation planning. Municipalities planning for climate adaptation have higher municipal expenditures per capita, greater exposure to local climate impacts, and more committed local officials (Shi et al., 2015). Cities plan for adaptation in specialized plans and comprehensive plans, with those taking a narrower focus on specific risks proving more

effective (Lyles et al., 2018). We know little, however, about why and how cities specifically plan for extreme heat.

Moreover, while scholars and practitioners have presented best practices for managing extreme heat, there is limited evidence about how cities apply these practices. These practices include lighter colored "cool" roofing and paving materials, urban greening, tree planting, building envelope design, cooling centers, early warning systems, and heat response plans (Stone et al., 2019; Stults & Woodruff, 2017).

In this paper, we answer two questions about adaptation planning for extreme heat in California. What are the characteristics of California municipalities that adopt policies and plans for extreme heat? What extreme heat policies do California municipalities most commonly adopt to plan for high temperatures?

The first part of the paper employs regression analysis of the factors associated with municipal adaptation of urban heat island policies and climate adaptation. We specify three sets of logistic regression models. Our binary outcome variables – from the state's 2018 Annual Planning Survey – are (1) city has adopted urban heat island policies, (2) city addresses climate adaptation in its General Plan, and (3) city has adopted climate adaptation plans and strategies. We control for planning staff capacity, population and population density, residents' socio-demographic characteristics, voting in the 2016 election, and projected extreme heat days in the 2040s.

We find that 41% of Californian cities responding to the statewide survey have adopted urban heat island policies and 40% have climate adaptation in their General Plan, whereas 62% have some climate adaptation plans and strategies. Preliminary results show several factors to be statistically associated with climate adaptation. Cities with larger planning staffs, larger shares of Democratic voters, and more projected extreme heat days are more likely to adopt urban heat island policies. Cities with higher shares of black residents are more likely to have climate adaptation in their General Plan. Cities with more college graduates and Democratic voters are more likely to adopt climate adaptation plans and strategies. Our subsequent analysis of these data will focus on how climate hazards are associated with planning interventions, with an intent to shape future state guidelines.

The second part of our paper is a content analysis of adopted policies related to extreme heat. We developed an inventory of best practices based on the literature and professional publications. We selected a stratified sample of cities in California by size and climate zone. Two trained students are working in parallel to review cities' general plans, climate adaptation plans, and other relevant documents to assess the degree to which cities have adopted best practices in the inventory.

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Key Words: climate adaptation, adaptation planning, extreme heat

INCORPORATING STORM WATER MANAGERS' KNOWLEDGE AND PERCEPTIONS INTO AN AGENT-BASED MODEL: SIMULATION OF INSTITUTIONAL DECISION-MAKING IN GREEN INFRASTRUCTURE PLANNING

Abstract ID: 107
Individual Paper Submission

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In the age of climate change, there is an increased interest in urban stormwater management to combat problems related to excessive flooding and pollution of water bodies. Green infrastructure [GI] tries to simulate natural hydrologic systems to address such issues. The advent of GI as a significant piece of urban stormwater and wastewater management reflects the concerted efforts to build an eco-friendlier urban system. Urban areas are, in fact, complex socio-ecological systems [SES] which involve human and natural resources in a multifaceted multi-scalar manner [Gunderson & Holling 2002]. According to Innes and Booher [2010], the logical way to plan for a complex urban system is through collaborative rationality. A popular method of collaborative planning is participatory modeling, which is the process of incorporating stakeholders into an otherwise purely analytic modeling process [Voinov & Gaddis 2008].

Although GI for stormwater management is on the rise; there is little research that has examined the role of stakeholder perception and decision making in the planning process [Montalto et al., 2013]. Additionally, most GI implementation plans are based on deterministic physical models that fail to account for variability in perception. Agent-based models [ABMs] provide a tool to simulate and study human decision making. ABMs comprise agents who mimic real-world rules and interactions, can incorporate dynamics of the social and physical environment, and quantify complex interactions [Railsback & Grimm, 2011].

The purpose of this paper is to present results of an ABM designed to explore dynamics of institutional decisions about green infrastructure implementation in Utah. The model is built to capture impact of stormwater managers' existing experience and knowledge in implementing green infrastructure. The specific research question is how the incorporation of stakeholder perception in an otherwise deterministic model changes the overall GI implementation rate and achievement of corresponding benefits, and how this may lead to sub-optimal outcomes.

Based on 31 key informant interviews and 67 stormwater program manager surveys on GI perception, we formulated the agent knowledge base for an ABM developed in NetLogo to simulate GI implementation in Salt Lake County, Utah, under two different scenarios. Agents in the model are stormwater managers making final decisions on GI types and locations in both scenarios. In the first scenario, we assume perfect, objective knowledge on the part of the stormwater managers, leading to an optimal solution for the distribution of GI. This model then uses deterministic variables used to assess suitability and overall cost and benefit accrued after implementation [in terms of flood reduction, pollutant removals, etc.], i.e., based on benefit maximization. In the second scenario, implementation decisions are weighted using insights from stakeholders concerning the awareness of GI types and effectiveness of various GI types in flood control, nutrient reduction, with the resulting implementation representing a suboptimal solution defined by preconceptions about GI. We then extend this second model to study how knowledge transfer through direct experience of GI efficacy, contact with other agents, and policy incentives can be used to counter these preconceptions and encourage optimal implementation.

Our findings demonstrate the importance of knowledge transfer as both a top-down and bottom-up process plays a role in designing GI for flood control, pollution reduction, and local infiltration. In particular, the results illustrate the role of innovation spread [Hagerstrand, 1952], through dialogue and interaction between agents. The primary relevance of this study is in bridging the gap between a purely objective choice model for GI and more qualitative information on stakeholders' preconceptions and preferences. Although a simplistic model, this produces realistic simulations that can be used to explore the role of education and information in guiding choices.

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Key Words: green infrastructure, participatory modelling, agent-based models, human behavior modelling

FLOOD BUYOUT INEQUITY IN GREATER HOUSTON
Abstract ID: 160
Individual Paper Submission

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Buying flood-prone properties and returning the land to open space is an important strategy used by government agencies to mitigate flood hazards (FEMA, 2018). A recent nationwide study found that buyouts tend to target low-income diverse zip codes within whiter, wealthier, and denser counties, leading to the question of whether buyout practices are equitable (Mach et al, 2019). A second nationwide study, also in 2019, found that buyouts are disproportionately offered to white zip codes and that federal disaster aid disproportionately benefits whites (Benincasa, 2019). A third nationwide study (Elliott et al, 2020) found that buyouts disproportionately target whiter counties and neighborhoods, especially in more urbanized areas. However, neighborhoods of color in these areas have been historically more likely to accept buyouts in greater numbers (except in New York and New Jersey area after Hurricane Sandy). These three pioneering studies are the first of their kind, but their results appear to contradict each other and they fail to clarify the problem. This problem includes, for example, the belief expressed by low income people of color in Houston that buyouts are tantamount to a land grab (Nance and Johnson, forthcoming), which would explain relatively low interest in the buyout program among racial minorities. Also unaddressed in the emerging literature is the preponderance of people of color in flood zones due to historical factors, which should increase their eligibility for buyouts. To address these gaps we selected Greater Houston as a case study to examine buyout program inequity at a more manageable scale. We had two research questions: who is getting bought out and is the buyout program equitable? Through the Freedom of Information Act we were able to obtain address-level data for 1,399 buyouts in the Greater Houston area from 1997-2017. We combined this buyout data with Census data and buyout program information from the local flood agency to analyze the equity implications of past buyout decisions in terms of race, income, property value, and flood risk. We used GIS mapping and statistics for the first phase of the analysis. For the second phase we interviewed buyout program participants to understand the range of reasons why historically excluded groups would either volunteer for or avoid a buyout. Our overall finding for the Houston region is that the local flood agency does in fact target people of color for buyouts because they tend to be at higher risk of flooding. We also find that these groups are generally not interested in participating in the program because of the lack of affordable housing and the predatory nature of the local housing market. Our case-based results provide additional knowledge that supplements the emerging literature. These results also offer constructive guidance to planning practitioners who are trying to develop equitable buyout programs.

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Key Words: inequity, flood, mitigation, buyout, housing

DISASTER INEQUITY AND THE CHALLENGES IN RURAL AND EX-URBAN COMMUNITIES
Abstract ID: 166
Individual Paper Submission

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Disasters are often accounted for in terms of numbers—numbers of people, structure, dollars of damage. This means that when natural hazards, such as hurricanes, affect larger cities the statistics can be escalating and alarming. Yet these statistics hide the intensity of damage to rural and ex-urban areas where population and the built environment is less dense but vulnerability also high. In rural areas, non-structural damage is often more of a concern, causing stress and economic problems that are not well well-supported by current hazard mitigation planning (Whitman et al., 2013). In areas outside of the US, this has been a major driver in rural-urban migrations (Ishtiaque & Nazem, 2017).

Rural and ex-urban communities face unique vulnerabilities. On one hand, they often have more dependence on natural resource livelihoods that can be affected by natural hazards (Jurjonas & Seekamp, 2018). However, some studies have shown that despite this dependence, the built-up social capital and civic engagement may help residents to respond to challenges of hazards (Jedd et al., 2018). These different sources of challenges and resources affect the disaster profile of these communities in a way that statistics often fail to account for.

Rural areas in the US have been understudied, particularly in hazard research. Most rural hazard research pertains to developing countries, where larger portions of the population still live. This paper addresses and brings to light many of the challenges of disaster preparation, recovery, and adaptation based on three case studies post-hurricane. The case study analysis highlights the initial vulnerabilities that exacerbate problems and the way statistics and the media reduce the available resources to the area to recover.

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Key Words: rural, disaster, media, poverty, environment

THE LOCAL INFLUENCE OF A GLOBAL CITY: A CASE STUDY OF EMBODIED EMISSIONS POLICY FOR URBAN CLIMATE ACTION
Abstract ID: 173
Individual Paper Submission

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Since at least the early 2000s, the City of Vancouver has been a self-proclaimed and widely-recognized leader in urban sustainability. In 2010, the city announced a bold vision to become the "greenest city in the world." Over the past decade, it has been an active member of all of the high-profile transnational urban climate networks, including C40 and the Carbon Neutral Cities Alliance. Recently, those networks have adopted a focus on embodied carbon as one of the crucial frontiers of urban climate action. In dialogue with them, decision-makers in the City of Vancouver have played a critical role in developing this policy area for the building sector, actively testing and proposing strategies.

The carbon footprint of goods imported into a city is particularly significant for the built environment. Globally, new construction continues so rapidly that a popular metric suggests the equivalent of New York City will be built every month for the next 40 years. As operational emissions decline with increased energy efficiency and electrification, the embodied emissions of building materials become an increasingly large part of the building footprint. Reducing embodied emissions presents an opportunity to take immediate action to meet Paris commitments.

The City of Vancouver is primarily addressing embodied carbon in relation to peer cities such as Seattle, San Francisco, Copenhagen and Oslo, but this initiative is also occurring within a supportive provincial context. In BC, the provincial government and the private sector have been supporting mass timber construction to reduce embodied carbon and foster local economic development.

Cities are increasingly seen as the last, best hope for meaningful climate action, and global cities are the clear champions in this arena. However, urban climate action cannot depend solely on those elite cities, but must also be taken up among cities with less capacity that are less "plugged-in" to global networks. This raises the question, given favorable conditions from higher levels of government, to what extent do global cities serve as a catalyst for further local climate action? Specifically, how does City of Vancouver and forestry sector leadership translate to uptake of embodied carbon policy in other local governments and public sector organizations in British Columbia? Do decision-makers choose to pursue embodied carbon policies? If so, how and what are the main barriers and enablers?

In this case study of embodied emissions policy uptake in BC, methods include interviews with key decision-makers in multiple levels of government, focus groups in the public and private sectors, and content analysis of policy documents and green rating systems. Preliminary findings indicate that even with Vancouver leading the way and the province providing some supportive conditions, public sector

organizations face significant barriers to considering embodied carbon policy, let alone adopting it. Barriers range from a lack of capacity and authority to the limitations of territorial emissions accounting. Local governments tend to fold embodied emissions into circular economy approaches, such as reusing buildings and materials, which may have a minimal emissions impact. In early evaluation, embodied emissions policy seems to present critical trade-offs in areas including affordable housing and adaptation.

The City of Vancouver does act as a regional leader and engenders some limited upscaling in the arena of embodied emissions policy, but the stratification of urban climate action between this global city and other local governments persists. This points to the need to identify more explicit, viable mechanisms for leveraging the influence of a global city within a regional and subnational context, an approach which will be essential to fulfilling the promise of local governments as climate champions.

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Key Words: urban climate governance, mitigation, policy mobility, multi-level governance

LEVERAGING PEER INFLUENCES TO MOTIVATE ENERGY EFFICIENCY RETROFITS
Abstract ID: 174
Individual Paper Submission

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Planning for energy efficiency in multi-unit residential buildings implores examining the assumptions underlying conventional approaches and implementing more robust strategies that account for the potential of negative, unexpected reactions.

Interview findings from this research revealed that people could respond to programs and policies in ways that undermine their intended outcomes. For example, in response to information on a building's energy efficiency level and options to retrofit and lower consumption, some types of building owners perceive that message differently and can instead react by disinvesting in that building – the opposite of the intended outcome.

The reason these types of reactions are unexpected is due to faulty assumptions underlying how building owners are thought to make decisions. Conventional planning and policy approaches assume that building owners are rational actors. The rational actor framework values information that is knowable, accessible, and quantifiable. Both municipalities and non-governmental organizations (NGOs) apply this framework by quantifying the benefits and costs of energy-related investments in financial terms and sharing this information with building owners with the assumption that they will be motivated accordingly.

These assumptions need to be tested, but many municipalities lack the capacity and resources to assess fully the performances of planning and policy approaches. Without feedback on which efforts are effective with different types of building owners, efforts to motivate those who didn't respond to conventional approaches often resort to doing more of the same: education, outreach, and financial incentives.

While in other contexts, emotional, sociological, and other non-rational factors have been recognized to influence consumer behavior significantly, these factors have not been widely applied to motivating

energy retrofits in buildings. The challenges to motivating multi-unit residential building owners include large numbers of owners to motivate, different types of management strategies, and the problem of split incentives between those who incur the retrofit costs and those who receive the benefits.

Planning for energy efficiency among multi-unit residential buildings can serve as a test case to uncover and verify new approaches that will prove effective in motivating diverse types of building owners to retrofit.

This study combines methods of qualitative research with agent-based modeling. Qualitative methods include semi-structured interviews exploring how municipalities and non-governmental organizations (NGOs) in Cleveland, Detroit, and Grand Rapids encourage energy efficiency and leverage social incentives among multi-unit residential buildings. The 22 interviewees included building owners, municipal and NGO decision-makers. Building owners were interviewed to understand how they make energy retrofit decisions.

The interview findings were used to build the Neighbor-Influenced Energy Retrofit (NIER) agent-based model that explored the effect of neighbor and network peer influences upon energy retrofit decisions within a population of building owners. It explores scenarios in planning and policy interventions.

Interviewees reported lacking the capacity, resources, and information feedback to properly evaluate the performance of their efforts, which may contribute to limited or converse results from owners who are not receptive to those approaches.

However, an emerging approach employing a spatial strategy to engage building owners is being implemented. This approach magnifies neighborhood and network peer influences and conveys information from respected peers, which building owners have reported that they factor into their retrofit decision-making.

These dynamics are represented in the NIER model that produced the following insights: Large peer groups can achieve quick energy efficiency gains but abandon reluctant owners. Small peer groups successfully motivate all types of building owners but takes time and requires large financial incentives. A combined approach with bringing buildings up to code at the point of sale improves retrofit outcomes.

This research contributes to more robust energy efficiency planning that can motivate reluctant building owners with effects beyond the initial intervention.

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Key Words: Energy efficiency retrofits, Decision-making, Agent-based modeling, Peer effects, Multi-unit residential buildings

SUBSTANTIAL WIND POWER PROJECTS IMPROVED THE COMMUNITY SERVICES ON RURAL AREAS IN THE UNITED STATES
Abstract ID: 198
Individual Paper Submission

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Wind power development has rapidly expanded in rural areas in the United States. Numerous studies addressing the impacts of wind development on rural communities focusing on economic, environmental, and social effects, none of these studies investigate the impacts on community services. This research addresses the impacts of substantial wind development on community services and the standard of living. It used a mixed-methods approach to investigate the effect of wind power development on the eleven rural counties which hosted substantial wind farms over 1000 MW. This approach consists of three components: descriptive analysis, semi-structured interviews, and government documents and newspapers analysis. The descriptive analysis is performed to document changes in the population size, employment, and poverty rate of eleven rural counties before and after hosting substantial wind projects. The interviews and documents are analysed to identify the effect of wind development on public services and standard of living, based both on empirical outcomes and respondents' experiences. The results show that wind development increased the tax revenue of the rural community without any noticeable increases in required public services or increases in the population size of the rural communities. Counties received substantial tax revenues and showed an improvement on public services. Wind development provides an additional source of income to rural communities without any changes to the rural nature. This research suggests that wind development is a suitable economic source for rural economy's diversification.

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Key Words: Wind energy development, Rural communities, Community services, Standard of living, Descriptive analysis, semi-structured interview, and documents analysis

DO DOLLARS AND CENTS EQUAL IMPORTANCE: AN ADAPTED METHOD TO ALIGN ECOSYSTEM SERVICE VALUATION TO SPATIAL PLANNING
Abstract ID: 205
Individual Paper Submission

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In the words of Baba Dioum, "In the end we will conserve only what we love; we will love only what we understand; and we will understand only what we are taught". Since the onset of the twenty-first century, the ecosystem service concept has gained increased attention for its ability to highlight human's dependency on nature. This concept has the potential to be used by spatial planners, urban designers, and landscape architects to transform urban patterns to integrate ecosystems, hence, support their provision of needed services. However, there is a dearth in empirical studies that use ecosystem valuation (i.e., obtaining the public's value of nature to better inform policy and management decisions) in a way that is compatible with the idiosyncrasies of urban planning, particularly the discipline's diverse information sources and competing stakeholder opinions (Galler et al., 2016). The current literature is predominated by valuation studies based on neoclassical economics that aggregate individuals' monetary conception of value (Gómez-Baggethun et al., 2014; Chan et al., 2012). However, these approaches continue to face unresolved difficulties, including the commodification of incommensurable values and isolating value framing from its social construction (Chan et al., 2012). Yet, alternative, non-monetary valuation approaches, which are often deliberative, have been criticized for lacking structured and replicable procedures, leading to loosely defined management ideals that do not "address implementation issues where conflicts occur and trade-offs are necessary" (Kallis et al., 2007).

Accordingly, this paper addresses two research questions: (1) How can ecosystem service valuation be adapted into a pragmatic framework suitable for use within urban planning? and (2) How can we empirically apply this adapted framework?

To answer these questions, the paper looks to the literature to identify three critical themes across valuation approaches, including: (1) deliberation; (2) local ecological knowledge; and (3) explicit trade-offs. These themes guided the creation of a pragmatic valuation framework, operationalized by combining two interactive public engagement methods (Q-method and focus groups) to create a robust heuristic planning tool. This preference ranking method, dubbed "deliberative Q-method", combines objective data outputs, derived from a rule-guided statistical analysis, with deliberative narratives to holistically understand participant values. In doing so, this method allows for a more inclusive, transparent participation process by drawing on local knowledge and allowing for explicit tradeoffs to be made across ecosystem services. This enables stakeholders to share in the creation of management guidelines, and highlights the importance of mutual learning and value creation's socio-contextual determinants. This combined method was empirically tested in Amman, Jordan by analyzing how experts value urban water features amid severe water scarcity. Specifically, we investigate how and why experts in Amman, Jordan value stream ecosystems, and how these values can inform future planning and management decisions.

Our findings revealed two juxtaposing opinions about the value of Amman's urban surface waters. The predominant perspective is sustainably minded, valuing urban water features for their sociocultural benefits and for their support in creating nature-based solutions. The second perspective is technically minded, valuing hardscape protections against ecosystem disservices and unsustainable water management practices.

The relevancy and implications of this work is twofold, first concerning planning scholarship and second, regarding planning practice. The combined method bridges the quintessential gap between theory and practice, building theoretical and empirical frameworks believed to be valuable to planners, policymakers and scholars alike. This work highlights two important considerations: (1) valuation methods should be fit for the purpose of the process, and (2) practitioners should question the status quo by applying new methods to reconcile competing policy agendas and citizen values. This method produces results that are easily interpreted by decision-makers amid complex urban realities such as climate change.

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Key Words: ecosystem services, ecosystem valuation, public engagement, social learning, mixed methodology

PUBLIC SUPPORT FOR CLIMATE CHANGE MITIGATION AND ADAPTATION POLICIES: INSIGHTS FROM LAKE COUNTY, IL
Abstract ID: 213
Individual Paper Submission

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Planning for climate change requires the initiation and implementation of policy at the local and national levels. Public support and buy-in are crucial to the introduction, passage and eventual success of these policies (Drews & Bergh, 2016). Climate policies typically support either mitigation (the reduction of greenhouse gas emissions) or adaptation (preparation for and responses to the impacts of climate change). While many studies have measured support for climate-mitigation policies, fewer have explored support for adaptation-focused policies. Further, some scholars and policymakers have expressed concern that focusing on adaptation might reduce support for mitigation measures, although existing evidence does not support this claim (Carrico et al., 2015). This research explores three central questions: 1) what variables are associated with support for mitigation and adaptation policies, and do they differ? 2) do these variables change from the local scale to the federal scale for each set of policies? and 3) are private, self-reported pro-environmental behaviors associated with support for climate policy?

As part of a National Science Foundation funded multi-university, inter-disciplinary project designed to test intervention messaging to encourage resource conservation at the household level, we will survey 300 households in Lake County, Illinois about their environmental beliefs, knowledge, and behaviors. These issues should be relevant for residents as multiple municipalities in Lake County have experienced flooding as a result of increased frequency and severity of precipitation events. Efforts to adapt to the impacts of climate change are underway at both the county and municipal levels.

We will measure support for four types of policies: federal mitigation, federal adaptation, local mitigation, and local adaptation. Independent variables measured in the survey include belief in climate change, perceived risk from climate change, perception of local climate impacts, direct hazard experience, political affiliation, and self-reported pro-environmental behaviors. To analyze the impacts of independent variables on dependent variables, we will use a series of ordinal regression models (DVs are measured using a 5 or 7-point Likert-type scale).

Following other recent studies, we hypothesize that past hazard experience will influence support for

adaptation policy, particularly at the local level (Albright & Crow, 2019; Demski et al., 2017). We predict that knowledge of and belief in climate change will predict more variance in mitigation policies than adaptation policies, following Toole et al.'s (2016) observation that belief in or knowledge about the causes of climate change is not necessarily a prerequisite for building household adaptive capacity. As a large body of research finds strong association between support for climate policy and political orientation, we predict that it will be a significant variable in our models, but hypothesize that political orientation will predict more variance in support for federal policy than local policy, as federal policies are often more politicized. Finally, we predict a positive association between engaging in household pro-environmental behavior (individual behavior) and overall support for climate policy (collective action). Understanding these distinct dimensions of support for climate policy can inform efforts to implement policy at multiple scales.

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Key Words: climate change, climate adaptation, local policy, decision making, household behavior

READING THE SILENCES: HOW URBAN CLIMATE ADAPTION PLANS ADDRESS INCOME AND RACIAL INEQUALITIES
Abstract ID: 214
Individual Paper Submission

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U.S. cities are experiencing climate change impacts ranging from sea level rise and flooding to increased heat waves and wildfires. These ecological changes have extensive and varied social consequences, and many of these risks will disproportionately affect people already experiencing forms of social inequality. In response to these challenges, cities are creating climate adaptation plans and associated projects. Within these plans, if and how cities address issues of social inequality vary widely, raising concerns that adaptation interventions may continue patterns of disparate risk or create new forms of environmental injustice especially for low-income communities of color (Shi et al., 2016). This study contributes to this body of research by deploying content analysis and plan evaluation techniques to answer two questions: 1) How do cities acknowledge issues of racial and income inequality in their climate adaptation plans? 2) What is the relationship between plan attention to social inequalities and measures of racial and economic disparities?

To answer these questions I examine how 25 U.S. cities address racial and income inequality in their climate adaptation plans. I use manifest content techniques to code internal plan elements including: issue identification, goals, strategies, attention to uneven climate risks, and consideration of racial and class inequalities (Berke & Godschalk, 2009, Bulkeley, et al., 2013; Schrock, Bassett, & Green, 2015). I contrast plan attention to racial and economic injustices with measures of current income inequality,

racial segregation, and historical redlining processes to understand how planners contend with uneven socio-economic conditions in the face of climate change.

Initial results indicate that a majority of plans focus on vulnerable and/or low-income residents in assessing unequal climate risks and in targeting their adaptation actions. Less than half of the plans acknowledge racial inequalities and fewer than a quarter target communities of color in their adaptation strategies. While a majority of plans acknowledge some level of unequal risks from climate change, few unpack the urban processes and structures that create(d) those disparities. Using Stuart Hall's discussion of silences as a process of racialization and Charles Mill's work on silence as a form of collective denial that maintains what he calls "white ignorance", I argue that the lack of attention to racial inequality creates a collective silence on urban climate injustices that may exacerbate racial inequalities (Hall, 1992; Mills, 2007). In contrast to these silences, I offer examples of climate adaptation plans with explicit anti-racism rhetoric and discuss how those approaches influence issue identification, goals, and strategies. These findings contribute to our understanding of how emerging urban planning responses to climate change may continue or attempt to disrupt racialized planning practices and climate injustices (Anguelovski et al., 2016; Hardy, Milligan, & Heynen, 2017).

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Key Words: climate adaptation, color-blind racism, white ignorance

MANAGING URBAN GROWTH IN THE WAKE OF CLIMATE CHANGE: REVISITING THE GREENBELT POLICY IN THE US
Abstract ID: 243
Individual Paper Submission

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Greenbelts are one of the oldest land use policies. Since the mid-20th century, they have gained in popularity as a way to preserve land from development and to contain urban growth. Originating from Sir Ebenezer Howard's Garden City concept, greenbelt policy was first adopted in the United Kingdom and later in Canada, Australia, the United States, and South Korea. The success and failure of modern greenbelt programs depend on how the political support, public preference, and planning priorities reconcile two contradictory policy objectives – land preservation and development (Han and Go 2019). Criticism against greenbelts has focused on: 1) the effectiveness of greenbelts in mitigating the costs of sprawl; 2) the impacts housing affordability by restricting land supply and development activities; and 3) the resulting land use patterns, which may include, leapfrog development and related high commuting costs (Hack 2012; Amati and Taylor 2010; Amati 2008; Morrison 2010). Despite the heated debates on the effectiveness of greenbelts, their primary function of land preservation remains intact in countries like

the UK, Canada, and some parts in the US, despite escalating development pressures (Ontario Ministry of Municipal Affairs 2017; Daniels 2010; Amati and Yokohari 2007).

While the costs of maintaining greenbelts are being weighed against their benefits, the intensifying impacts of climate change shed new light on an overlooked benefit of greenbelts. According to the Land Trust Alliance, forests, prairies, farmland, and natural habitats absorb about 15% of America's carbon dioxide emissions (Land Trust Alliance 2017). Tomalty (2012) reported that the forestland, wetland, and agricultural land in Ontario's Greenbelt can annually store 86.6 million tons of carbon and sequester 200,000 tons of carbon. He estimated the economic value of the greenbelt as a carbon sink was around $10.7 billion per year. Thus, studying the effects of greenbelts as carbon sinks will make an important contribution to research on climate change. For example, the spatial distribution of development was an important element missing from the Green New Deal and its goal to eliminate greenhouse gas emissions by 2030.

In the U.S., several metropolitan counties including Lancaster County in Pennsylvania, Sonoma and Marin Counties in California, Baltimore County in Maryland, Boulder County in Colorado, Lexington County in Kentucky have instituted greenbelt policies based on agriculture zoning, urban growth boundaries, and market-based land preservation tools (e.g., Fee simple purchase, Transfer of Development Rights, Purchase of Development Rights, and land trust acquisition of conservation easements) to preserve lands. Daniels (2010) finds that the modern greenbelt programs attuned to the American land use planning system have contributed to increasing agricultural outputs in the studied counties. Following up on this study, we seek to estimate the effects of the greenbelt programs on sinking carbon by comparing the land conversion in the six counties to neighboring counties without greenbelt policies. Using the longitudinal National Land Cover Datasets from the year 2001 to 2016, we conduct a series of raster analyses and land fragmentation analysis to analyze the growth containment, land preservation, and carbon sink effects of greenbelt. Based on the empirical findings, we conclude our paper with planning policy implications that could help better shape future climate action plans and policies.

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Key Words: Greenbelt, Land Preservation, Climate Change Mitigation, Carbon Sink, Growth Management

PLANNING WITH UNCERTAINTY IN THE WILDLAND-URBAN INTERFACE: LONG-TERM FIRE AND FLOOD RISK REDUCTION STRATEGIES FOR PLAIN, WASHINGTON
Abstract ID: 248
Individual Paper Submission

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Larger, more severe forest fires in the Western United States are a result of climate change, fire exclusion, and lack of active resource management (Littell, McKenzie, Peterson, & Westerling, 2009; Abatzoglou & Williams, 2016). Over 1.25 million acres burned in Washington State from 2014 to 2015. Unusually hot temperatures, 4 to 9 degrees F above average in June (OWSC, 2015), triggered the fires. Communities struggled to recover from the fire as well as subsequent flooding and mudslide events.

Our research examined how to reduce risks from fire and flooding given long-term expected changes. We examined the wildland-urban interface in Plain, Washington using scenario planning coupled with appreciative inquiry and storytelling to develop four alternative futures over 60 years. This method blends scientific probabilistic modelling of scenarios with the local knowledge and community values to create stories about the community's future that address socio-ecological problems. Considering multiple scenarios allows communities to incorporate uncertainty into planning, test different mitigation strategies, identify risk reduction approaches common to all scenarios, and recognize path dependencies that limit future options for ecosystem services and planning.

"Scenario planning is a systematic method for thinking creatively about possible complex and uncertain futures" (Peterson, Cumming, & Carpenter, 2003, p.359) while improving the usefulness and efficacy of plans (Chakraborty, Kaza, Knaap, & Deal, 2011). We created four scenarios using the most important and uncertain community-identified drivers of change: fire, flooding, and population. Fire risks were calculated using a statistical model that included regional historical fires (1984-2010) and climate change predictions for temperature and precipitation. Flooding estimates and building damage were calculated using HAZUS. The population growth rate calculated for 2000 to 2010 was used to develop population bust and boom ranges. Four alternative futures were developed for years 2040 and 2080:

- Local Renewal: Plain will depend on local experimentation and innovation to rebuild and protect the community after fire, flooding, and population decline occur.
- Community Transformation: Plain adapts to extreme events and transforms into an urban community after fire, flooding, and population growth occur.
- Local Reorganization: Plain will depend on local knowledge to protect and utilize natural resources to stabilize the community when population decreases and no fire and flooding occur.
- Reactive Management: Plain focuses on growth and makes incremental steps towards a resilient community when population increases and no fire and floods occur.

We find that institutionalizing proactive and sustainable ecosystem management practices is critical for preserving healthy forests. Land management agencies can employ a myriad of risk reduction measures to preserve the health of the forest and enhance the safety of life and property in the wildland-urban interface. Community members can enhance Fire Adaptive Communities initiatives to protect their properties. This will allow fire suppression to focus on protecting forest resources, which in turn will protect the ecosystem long-term. In scenarios where population increases, the community must assess path dependencies that increase fire and flooding risks. In scenarios where fire and flooding occur, the community must consider post-event practices that inhibit forest regeneration and avoid path dependencies that limit future adaptive capacity and increase risks. We recommend adopting strategies that address several scenarios.

Comprehensive plans articulate a community's land use goals and aspirations based on growth. Hazard Mitigation Plans are aligned with comprehensive plans and focus on reducing natural hazard risks to communities. Both types of plans currently focus on the short term and follow a linear planning process that fails to account for uncertainty and surprises. In contrast, our research demonstrates how scenario planning, appreciative inquiry and storytelling methods can blend scientific and local knowledge to examine long-term risk reduction strategies and path dependencies over multiple alternative futures.

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Key Words: wildfire, flooding, scenario planning, story-telling, mitigation

SEEKING URBAN CLIMATE JUSTICE: ASSESSING HOW COMMUNITIES INCORPORATE EQUITY GOALS IN LOCAL CLIMATE CHANGE PLANNING
Abstract ID: 252
Individual Paper Submission

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Anthropogenic climate change is no longer a threat looming on the horizon; it is upon us. As major contributors to, and victims of, climate change, cities have taken the lead in mitigating the impacts of global climate change while addressing local impacts on the ground through adaptation. The impacts of climate change fall unevenly both among and within cities around the world, with historically marginalized communities often bearing the brunt of the burden due in part to pre-existing vulnerabilities. Early scholarly, advocacy, and policy discussions around climate justice focused on the uneven impacts of climate change at the international scale, emphasizing the responsibility of the wealthiest nations to support mitigation and adaptation efforts. As attention has shifted from national to local actors, the discourse around climate justice has also shifted to the city scale, raising new queries about the meaning of equity in the face of climate change. Urban climate justice scholars consider not only the uneven impacts of climate change, but also the uneven impacts of local efforts to mitigate and adapt to climate change (Bulkeley et al. 2013). While the existing empirical work in this field highlights the uneven impacts of climate change and local efforts to mitigate and adapt to it, no research has focused on how cities are grappling with these tensions on the ground. This study intends to fill this gap in the literature by exploring the intricate ways in which cities are attempting to balance conflicting goals and impacts that surface in the process of planning for climate change.

This study examines the equity implications of the design and early implementation of California's Transformative Climate Communities (TCC) program. TCC was adopted by the California State legislature in 2016 and is funded with proceeds from the State's landmark Cap-and-Trade program. TCC provides funding to some of California's most polluted and economically disadvantaged with the aim of empowering them to develop and realize neighborhood-scale projects (e.g. urban greening, building retrofits, transit expansion, and electrification) to reduce greenhouse gas (GHG) emissions and mitigate impacts (e.g. rising temperatures). While TCC's primary goal is to reduce local carbon emissions to help the State reach its goal of carbon neutrality by 2045, the program also aims to address historic environmental disparities and prevent local displacement through the expansion of affordable housing, community engagement, and workforce development. This equity-centered approach to climate change planning could serve as a model for how state and federal governments can support equitable local climate action. However, more information is needed about the design and early implementation of TCC in order to understand its potential to achieve equitable outcomes in local climate change planning.

Now a year into implementation of TCC, this study seeks to examine the equity-related goals and impacts

of the strategies supported by the program, highlighting both the successes and challenges facing local governments as they seek to mitigate and adapt to climate change. Drawing on document analysis, participant observation at a series of TCC meetings and public events, and semi-structured interviews with activists, government officials, and other actors, this study analyzes 1) how equity is defined in local climate change planning, (2) how, if at all, equity is considered in the adoption and implementation of local adaptation and mitigation strategies, and (3) how local governments are grappling with the uneven impacts of both climate change and strategies to address it. This study highlights differing conceptions of climate justice within theoretical and practice-based discussions and contributes to debates in critical environmental justice (CEJ) scholarship on the role of the state in addressing historic and ongoing environmental and climate injustices.

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Key Words: climate justice, planning, equity, urban governance, climate change

APPLICATION OF URBAN ANALYTICS IN FOOD RECOVERY PROGRAMS: AN EXPLORATORY STUDY IN CHICAGO
Abstract ID: 289
Individual Paper Submission

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Food recovery programs (FRPs) present dual benefits of waste reduction and hunger relief; however, FRP implementation has been limited in the U.S. Currently one-third of food produced for human consumption ends up in landfills; only 1% of wasted food is recovered for human consumption (US EPA, 2019). Notably, if just 30% of wasted food was recovered, it would be enough to supply the entire diet of all food insecure Americans (Leib et al., 2017). In urban areas particularly, there are clear spatial mismatches between surplus food (e.g., from commercial and institutional sites) and potential users (e.g., food banks, pantries, and community kitchens) (Ai & Zheng, 2019). Continuing the current practice of food wastage leads to economic inefficiencies, environmental pollutions, and social inequities associated with food system planning (Pothukuchi, 2009). There is a need to rethink the roles and functionalities of planning and public agencies in promoting FRPs and empowering local sustainability actions.

This study investigates how urban analytics may help promote FRPs. Advanced data analytics, such as ubiquitous computing, open data, and artificial intelligence, are already in widespread use for business decision making (Batty, 2019). Yet, many pragmatic modeling approaches are exclusively focused on economic analyses or operations research. Little attention is paid to societal and community implications of data analytics (Marcus & Koch, 2017), especially those for waste management.

This study employs cluster analysis and machine learning analytics to better connect the excess food with local demand (Kaufman & Rousseeuw 2009). Developed as a local solution, the planning framework and models also aim to identify appropriate zonal scales and areas that could operate FPRs effectively, efficiently, and sustainably. The zone delineation is anticipated to be particularly helpful for community-based infrastructure and capacity building for FRPs, given the heterogeneities of urban communities (e.g., spatial patterns, land uses, and urban density). Scenarios are developed by a varying number of clusters,

modeling parameters (e.g., by distance, by volume, by the density of donors and users), and machine learning algorithms (i.e., by the partitional or hierarchical clustering). Furthermore, this study evaluates the effectiveness of zone delineation options under different program objectives, including minimizing operating costs, optimizing environmental benefits, or reducing social inequities. The modeling framework illustrates an integrated way of interpreting and communicating urban complexities, as well as emphasizes the importance of inclusive approaches to solving interdisciplinary urban issues.

When implemented in Chicago, the modeling results suggest that simply including as many variables as possible into the computational model does not yield valid results. Different program objectives (with economic, environmental, or social orientations) do not always lead to the same solution. Moreover, the characteristics of heterogeneous communities (e.g., in terms of land use mix and demographics) lead to diverse options of local FRPs. Given the scattered distribution of surplus food suppliers across cities and limited edible surplus food at each site, economies of scale in operation would necessitate the potential collaboration among various sectors in each community. This study suggests a critical role for planning in engaging broader community stakeholders. The proposed planning framework is anticipated to inform the planning and design of such inclusive FRPs.

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Key Words: Food waste management, Food recovery, Urban sustainability, Urban analytics, Cluster analysis

INTEGRATING SEDIMENT TRANSPORT SCIENCE INTO LAND USE LAW AND POLICY: INSIGHTS FROM THE NORTHEASTERN UNITED STATES
Abstract ID: 372
Individual Paper Submission

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Today, the east coast of the United States is dominated by megalopolis stretching from southern Maine to northern Virginia. With over 45 million people living in this region, two significant forces shape the shoreline: human society and nature. Much is known about the socio-economic growth and development of the region including its built environment, less so about the natural process of sediment transport and littoral dynamics that shape the shoreline. Recently, scientists have begun to investigating how alongshore processes work with an eye toward better informing land use law, policy and management.

For the last several years, researchers have examined both the natural processes and manmade changes to the region's littoral dynamics (Jackson & Nordstrom, 2019). The state of understanding of littoral cell dynamics continues to grow as research efforts increase and new modeling, mapping, and monitoring technologies are advanced (Anderson, et al., 2018a). This includes knowledge about areas of the northeastern states, such as the studies of longshore sediment transport done for Cape Cod in Massachusetts. While sediment budgets are known for some parts of the northeast, much remains

unknown.

In addition to remaining data gaps, the science of coastal sediment processes has yet to be fully integrated into policy. Management decisions are typically responses to site-based problems using localized solutions, without consideration of the system as a whole (Cooper & Ponte, 2006). As scientific understanding of littoral cell dynamics grows, many stakeholders have made calls to better integrate this understanding into laws and policies. In the United States, governing bodies at the state level have recognized the importance of littoral systems as the basis for effective shoreline management and coastal protection, including in several Northeastern states.

As coastal populations continue to increase and sea level rise exacerbates threats from erosion and coastal storms, it is more important than ever that lawmakers and coastal managers make fully informed decisions that are based on the best available science (Anderson, et al., 2018b). This paper examines whether and how the seven northeastern States (Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, and New Jersey) have gathered and articulated knowledge about their littoral cell dynamics. It scrutinizes the degree to which the states have integrated that information into coastal law, policy, and management. Because all of the states fall short of fully integrating littoral cell-based management into policy, this paper then looks beyond the study area to examples in California and the United Kingdom to determine whether their more comprehensive science-informed management practices might help inform coastal managers in the northeastern United States. Finally, this paper reflects on where littoral cell-based theories of management have been utilized by the federal government as a potential path toward an integrated policy for the coastal zone.

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Key Words: coastal, management, littoral, land-use, law

A PARCEL-SCALE ANALYSIS OF MUNICIPAL FLOODPLAIN MANAGEMENT IN NORTH CAROLINA
Abstract ID: 379
Individual Paper Submission

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In the face of escalating climate change, effectively managing the population and assets exposed to climate hazards is critical to limiting damages (Brody & Highfield, 2013; IPCC, 2014). Recognizing the benefits of moving out of harm's way, the US government has already spent billions of dollars removing over 40,000 households from flood-prone areas (Mach et al., 2019). However, without simultaneous efforts to limit new development in hazardous places, the population and infrastructure exposed to floods may continue to grow. Some municipalities may strategically grow by channeling new construction away from floodplains and buying out existing flood-prone houses, while others may ignore floodplains altogether in their decision-making. Yet, with little data available on how development in floodplains has changed over time, our understanding of which municipalities have effectively managed their floodplains – and how – remains limited.

Here, we construct a novel parcel-level dataset to measure changes in floodplain development over time, allowing us to identify which municipalities have successfully grown while limiting flood risk. Researchers have sought to measure floodplain development since at least 1936, using aerial photographs and surveys of local officials to estimate the number of floodplain structures (Montz & Gruntfest, 1986; White et al., 1958). We apply today's powerful remote sensing and data science tools to take a more comprehensive and systematic approach to answering this question.

We combine property buyout records, real estate databases, and land cover data to measure the area of floodplain developed and the change in number of housing units in the floodplain since 1997 across the State of North Carolina. We compare these metrics against the number of property buyouts in the municipality to identify where the benefits of retreat have been offset by new construction. Then, we assess municipality performance by accounting for differences in how much land in the municipality is exposed to flooding, how much growth has taken place overall, and how much land is available for development. These additional steps ensure that we do not confuse municipalities with no floodplain or with no growth with municipalities that have grown strategically.

Initial results indicate that many municipalities use property buyout programs to remove flood-prone housing while simultaneously permitting extensive new construction in floodplains. Since 1997, over 7,000 flood-prone properties have been bought out across North Carolina. However, during that same time period, over 50,000 new buildings have been constructed in the 100-year floodplain, and an additional 16k have been built in 500-year floodplains. In four counties, over half of the new builds have taken place in the floodplain, but results vary by municipality.

Our findings indicate a substantial need to harmonize federal- and state-level buyout efforts with local policies aimed at minimizing floodplain development. Reductions in floodplain development are unlikely to be achieved through buyouts alone. This parcel-level analysis creates an empirical foundation for identifying municipalities that have grown while minimizing exposure to flooding. This foundation enables further investigation of policy tools and governance approaches employed to achieve these floodplain management outcomes.

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Key Words: flood risk, property buyouts

MUNICIPAL TRACKING OF CLIMATE MITIGATION GOALS: APPLYING AN ATTRIBUTES FRAMEWORK TO BRITISH COLUMBIA'S FOUR LARGEST CITIES
Abstract ID: 408
Individual Paper Submission

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This work sets out to assess the mechanisms cities are using to track their progress towards GHG emissions reduction targets. Numerous cities around the world are participating in networks that showcase their commitments and plans for emissions reductions. Over 1,400 local governments have declared climate emergencies. Cities are even touted as leaders in climate change action (Rosenzweig et al, 2010) However city-level efforts to mitigate the effects of climate change through policies, plans, projects, programs and actions are hindered by lack of monitoring mechanisms. Cities are generally under resourced in devising robust plans and developing implementation strategies. Methods and metrics are not standardized, or are unavailable or inaccessible (Klopp and Petretta, 2017). Goals are often described elusively and without implementation timelines or specific outcomes, so they are difficult to measure (Carmona and Sieh, 2008). Without specificity and measurement and without iterative updating of goals and actions goal achievement decreases (Singh and Vieweg, 2015). Are cities' climate change plans sufficiently robust to allow them to meet their targets? Will cities know if they are meeting their targets or the extent to which specific development decisions help or hinder?

We explored climate mitigation plans in British Columbia's four largest cities. We began by reviewing the literature on current issues in progress measurement, processes and frameworks in climate mitigation planning, as well as general goal setting and implementation from diverse literatures. We used this review to developed a framework of necessary attributes for successful target setting and implementation. We called it Effective Climate Goal Attributes (ECGA). Goal setting and implementation standards vary but generally include recurring characteristics derived from two widely recognized concepts used in climate mitigation contexts; (1) Measurable, Reportable and Verifiable (MRV) and within broader contexts, (2) Specific, Measurable, Appropriate, Realistic, Timely (SMART). While some attributes, such as 'Transparency', arguably serve as 'by-products' of MRV, we include them as independent attributes to emphasize their importance. Our ECGA framework includes precision, measurability, reportability, verifiability, and transparency as well as several other requisite characteristics for setting targets, choosing indicators, and developing monitoring and evaluation strategies.

We applied our ECGA framework to Vancouver, Surrey, Burnaby and Richmonds' climate mitigation-related plans. We additionally applied the monitoring and evaluation components of the framework to the City of Vancouver's CDP (formerly the Carbon Disclosure Project) reporting platform. The majority of city climate networks, including ICLEI, C40 Cities and the Global Covenant of Mayors for Climate and Energy, have adopted the CDP Cities questionnaire to collect data on climate initiatives done by their members. We also analyzed the degree to which the CDP Cities questionnaire makes cities accountable for their climate change commitments.

We found CDP monitoring to be consistent with our ECGA framework and a marked improvement over other and previous reporting networks. Most plans lacked quantified greenhouse gas emissions at any scale smaller than city level sectors. There were unclear linkages between plans, targets, indicators and

actions. Most plans did not include any monitoring and evaluation sections and those that did were general and lacked sufficient detail to be actionable. On the whole cities are not well equipped to measure their own progress towards their targets and lack the kind of precision and specificity needed to have their actions accurately measured by indicators linked to their plans. We identify critical gaps in the implementation of climate change mitigation plans and make numerous recommendations to address those gaps.

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Key Words: Climate change planning, Greenhouse gas emissions, Plan evaluation, Monitoring and evaluation

A LANDSCAPE-BASED ANALYSIS OF ENVIRONMENTAL (IN) JUSTICE AND PHYSICAL ACTIVITY: PATTERN, THEORY, AND ACTION
Abstract ID: 424
Individual Paper Submission

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For decades, landscape approaches have been used to categorize and translate ecological data into useful information to visualize the spatial patterns and processes of landscapes, and ultimately quantify the ecological conditions of each landscape in order to understand interactions between ecological characteristics and human health. In Environmental Justice (EJ) research, however, the strong emphasis on distributive justice has maintained the focus of EJ work primarily on applied and methodological studies to analyze and represent the proximity of populations to environmental hazards and the burden of human health effects among affected communities. In this article, we draw on the most discussed critiques of EJ to argue that a landscape approach to EJ questions could broaden and deepen our understanding of the complex structures of environmental in-justice(s) in urban contexts. First, we argue that complex EJ theories are not adequately reflected in most methodological approaches to EJ research. We then make the case that landscape-based approaches would better reflect this complexity and offer new opportunities for understanding complex urban structures and their myriad health effects. We illustrate this argument with an examination of the structure of green and the patterns of physical activity and obesity in Milwaukee, WI. We conclude that utilizing landscape metrics can improve our understanding of the complex ecological structures of cities and the impacts of these structures on patterns of health and related behavioral factors, ultimately leading to urban planning and public health interventions to create health promoting urban environments and address health inequities.

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Key Words: Environmental Justice, Landscape Ecology, Public Health

LOCAL LAND USE POLICIES FOR ENVIRONMENTAL JUSTICE
Abstract ID: 434
Individual Paper Submission

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Historically, zoning codes and land use practices have had the effect of hardening disparities and expressing forms of institutional racism evident in the built environment. These processes continue to jeopardize the health and safety of communities of color and low-income communities throughout the country, also known as environmental justice communities. Zoning and land use policies can also be harnessed affirmatively to redress these impacts. Indeed, looking to zoning and land use policies to remedy local environmental injustices is critical, as state and federal environmental laws and regulations are limited in their ability to address the siting decisions that concentrate cumulative pollution burdens. Nor do these environmental laws directly speak to the socio-demographic characteristics of communities impacted by multiple pollution sources or the development process that can drive siting decisions locally.

A variety of planning and zoning tools are available to municipalities for the purpose of addressing environmental justice, including comprehensive planning, eliminating nonconforming uses, using environmental reviews or impact analysis, and making change through local boards and commissions. Cities can also strengthen public health and building codes, augment public review and notification processes, impose development fees, implement overlay zones or special zone designations, or simply tighten existing zoning codes to make them more protective in communities of color and low-income communities. The right balance of approaches for any given place will depend on local conditions and priorities, along with state law regarding the powers of local governments vis-à-vis land use and environmental regulation.

This study explores how environmental justice advocates advanced policies that affirmatively use land use planning and zoning tools to address environmental injustices at the local scale.

A nationwide review of existing municipal, county and local government initiatives was conducted to identify policies that explicitly address environmental justice through local land use planning, zoning, or policy tools. It also includes an in depth analysis of the community led processes that resulted in the adoption of environmental justice legislation in the cities of Newark, New Jersey and Los Angeles, California. The methodology utilized for this study included multiple case studies (Newark and Los Angeles) using semi-structured interviews, document analysis and a qualitative summary review of online sources employing key word searches. The study was conducted in collaboration with several environmental justice organizations in Chicago, including Little Village Environmental Justice Organization (LVEJO) and the Natural Resources Defense Council using participatory action research methods.

The national review of policies identified 40 local policies focused on addressing environmental injustices

across 23 cities, three counties and two public utilities. The policies were categorized according to six typologies: (1) Bans, (2) Broad EJ policies, (3) Environmental Reviews, (4) Proactive Planning, (5) Targeted Land Use Measures, and (6) Public Health Codes. The case studies of Newark, NJ and Los Angeles, CA further detail the community led processes by which the respective policies in each city were adopted. In both communities, a clear articulation and understanding of cumulative impacts, leadership of community based environmental justice groups, strong local planning and zoning tools and a receptive political environment, led to the successful adoption of policies. The distinct approaches of each city, environmental review in Newark and proactive planning in LA, also reveal key catalysts for policy formulation and the challenges that can be anticipated in the development and implementation of these policies.

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Key Words: Environmental justice, zoning, cumulative impacts

USING A RESILIENCE FRAMEWORK TO UNDERSTAND WATERSHED ENVIRONMENTAL HISTORY
Abstract ID: 462
Individual Paper Submission

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This research extends prior work based in resilience theory to understand the evolution of governance of a watershed as a social-ecological system (SES) (Kellogg and Samanta 2017). The current work developed an environmental history of the Chagrin River watershed in NE Ohio, extending the period of change backward to the creation of the Connecticut Western Reserve in in 1795. Research objectives were 1) to understand how changes in landscape over 200 years impacted water quality and quantity in the river and altered its broader biophysical status; and 2) to understand the resilience of the social – ecological system to disturbances, disruptions, and thresholds (Folke 2006) through different time periods of natural history, socio-economic change, and perceptual (political/ideological) shifts (Hughes 2008). How did management, planning and governance systems change through several major historic periods in the social-ecological system to reflect changing perceptions of actors (DuPlessis 2009)? Can incorporation of resilience theory with environmental history more effectively identify the evolutionary change (the adaptive cycle) of a watershed, including the attributes of nested and cross scale interactions and of multiple equilibria which relate directly to the variations in biophysical conditions in sub-watersheds?

Primary and secondary sources were used to identify historic change to landscape from settlement, resource extraction and political institutions (e.g., surveyor notes from 1796, land sales maps, tax records, Sanborn maps, and state and county aerial photos). Data for changes to the river (e.g., water quality, changes to stream morphology, and water quantity) were obtained from 19th and 20th century newspaper accounts, and local, state and federal agency testing databases. Timelines of disruptions and trends for these attributes knit data from disparate times, scales, and sources together and were compared to

discover key social or biophysical thresholds and ecological regime changes indicating evolution of the system across scale and time.

The timelines indicate critical disruptions to the SES, some internal and periodic (such as flooding) and some external (e.g. opening of the Erie Canal in NY state), interspersed with longer term landscape change. Settlers and entrepreneurs shifted their subsistence and economic exchange behavior to substitute for declining ecosystem services, which in turn often initiated a secondary round of landscape change, causing further degradation of ecosystem services over two hundred years. A counter trend to restore ecosystem services began in the late 19th century and accelerated after passage of the CWA, resulting in a new governance structure, one explicitly focused on restoration. Sub-watersheds experienced different drivers and changes to landscape and ecosystem services across differing time scales, and adaptation in these watersheds reflected the perceptions of actors who dominate governance in these smaller geographies.

Relevance of this approach stems from planning as primarily a place-based enterprise. One of the outcomes of developing the environmental history was a deeper appreciation of the value of the Chagrin River to its residents and leaders that was discovered in earlier studies. The history of the place frames decision making up to this day as actors seek to address changing climate conditions. A resilience framework combined with an understanding of historic disruptions and trends provides a deeper foundation for decision making.

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Key Words: watersheds, governance, environmental history, social-ecological systems

RESOURCE MANAGEMENT AND THE CULTURE OF RURAL PLANNING
Abstract ID: 479
Individual Paper Submission

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Rural places are vital not only to their residents but to the world at large, as sites of such critical resource management issues as climate change, biodiversity loss, food and resource production, and ecological preservation and restoration. Yet planning in rural places, as currently practiced, is often ineffective and conflict laden. This is in part the result of a mismatch between rural culture and the urban bias of planning. The implications of the urban bias and the concomitant neglect of the rural have been insufficiently problematized. As a result, opportunities for improved rural planning processes, policies, and outcomes, and in particular, more effective resource management, are missed (Alkon and Traugot 2008).

The recent interest in planning cultures provides a vehicle through which to examine the urban bias and the benefits for resource management of a more rural-centric planning culture. Friedmann (2005, 184) defined the culture of planning as "the ways, both formal and informal, that…planning in a given multi-national region, country or city is conceived, institutionalized, and enacted." The growing literature on the culture of planning (e.g., Sanyal 2016) rejects the modernist notion that planning, as a field of professional activity, is more or less the same regardless of where it is practiced. Instead, planning is embedded in the political culture of a place and, as such, is always historically grounded. Building upon this insight, scholars have identified diverse planning cultures and alternative perspectives, such as feminist/LGBT, children and youth, race and immigrants, and Indigenous and post-colonial.

Comparable scholarship is needed to explore the urban bias in planning and the implications for a culture of rural planning. Toward this end, the paper begins with a review of the planning culture literature to explain our premise of an urban bias and how it is manifest in the planning field's issues of concern, institutions, conventions, values, and so on. We then support that premise through analyses of published definitions of planning in key books and leading planning journals across a range of substantive/sectoral planning topics, including resource management. As Porter (2010) has observed, seeing planning as a cultural practice makes it specific to particular peoples, life views, times, and places. In that spirit, we then ask how particular views of "the rural" shape rural planning. To illuminate rural culture(s), we define rurality through the literature of rural studies, cultural geography, social theory, and other relevant fields. Last, we build upon our previous work (e.g., Frank and Hibbard 2017) to present the emerging culture(s) of rural planning and its application to resource management.

Analyzing rural planning through the lens of culture gives new insights into why urban-biased planning has not succeeded in rural contexts, the kinds of missed opportunities for local and global sustainability in resource management, and how planning may be improved in these places. Furthermore, this paper shows that the culture of planning should explicitly diversify along substantive dimensions, especially to include the rural perspective. These lessons should be incorporated into planning education and best practices, similar to the field's responses to other alternative perspectives.

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Key Words: rural, environmental, culture, perspective, bias

DIFFUSING ENERGY TRANSITION: THE CASE OF COMMUNITY LEAGUES IN EDMONTON, CANADA
Abstract ID: 520
Individual Paper Submission

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Niches occupy an important place in the socio-technical energy transition of our society. Community-led grassroots activity plays a significant role in this regard (Seyfang and Smith 2007; Boyer 2015). Current scientific discussion on energy transitions are largely dominated by the creation, strengthening and diffusion of niches (Wolfram and Frantzeskaki 2016; Köhler et al. 2019). However, niches can also be found in well-established grassroots structures that re-orient themselves to address the challenge of energy transition. Such well-established niches are better insulated against the changes in regime and have the potential to sustain the transition processes. Furthermore, it is within these niches that socio-technical transitions can gain large scale visibility and social acceptance.

Community Leagues in Edmonton, Canada are presented as a case in point. Community Leagues are a unique form of grassroots community-centred and volunteer driven organization that have existed in Edmonton since 1917 (Kuban 2005). Currently there are a network of 160 neighbourhood organization working towards enhancing the quality of life in their neighbourhood. Following an interest in the community towards energy transition in 2012, Community Leagues have worked towards diffusing the idea through solar panel installations and energy audits of the community halls. This has been done with the aim of making solar energy tangible in the neighbourhood as well as encourage homes and local institutions to do the same. In doing so, they have taken a leading role in achieving last mile of energy transitions.

Based on the transition and diffusion experiences of 21 Community Leagues, this research establishes how niches were created within the well-established Community Leagues structure to foster and diffuse energy transitions. This is done through a review of Community League documents, interviews with transition leaders and an online survey of residents in each neighbourhood.

Results indicate that grassroots organization like Community Leagues are well suited to take up the task of diffusing the ideas and practices of energy transition. They build on existing access to the community as well as trust of members and regime institutions at local and regional level. However, taking up new responsibilities regarding energy transitions require an expansion of existing network as well as recruiting self-motivated individuals to take up the task.

The results address city governments, energy advocacy groups as well as renewable energy companies to understand the advantages and challenges of partnering with organizations like Community Leagues to achieve large scale diffusion of energy transition.

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Key Words: Energy transition, Sustainability, Grassroots organizations, Community Leagues, Diffusion

MOVING GOODS SUSTAINABLY: HOW DO PRACTITIONERS CONSIDER SCIENCE ACROSS NETWORKS OF PLANS?
Abstract ID: 572
Individual Paper Submission

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Campbell's (2016) sustainability planning framework presents a system of governing relationships between social, environmental, and economic risks through on-going planning processes. The on-going nature of sustainable planning is, in part, a result of both individual and institutional capabilities to incorporate uncertain and continuously evolving scientific evidence into the environmental governance of conflict between economic development and environmental protection (Campbell, 2016; Renn et al., 2011). This paper uses three cases to demonstrate how networks of plans in the Northeast United States manage this on-going resource conflict relationship in the context of planning for freight-related land uses.

The tension between economic development and environmental protection is particularly salient for freight-related land uses. Warehouses, fulfillment centers, and other freight-related land uses are sprawling in urban areas, exhibiting both the environmental nuisance characteristics of locally unwanted land uses (LULUs) and the job gains sought after by economic development officials (Yuan, 2019). Planning practitioners and public officials use 'networks' of plans to balance future employment gains with concerns about climate resilience, job quality, transportation emissions, and other risks unevenly distributed by growing logistics-related land use (Berke et al., 2019). I propose that both individual attributes and institutional level governance structures influence practitioners' choices for incorporating environmental sciences within networks of plans (Renn and Rohrmann, 2000). In this paper, I study how these individual and institutional influences can serve as barriers or enablers for including scientific information that allows practitioners to observe and act upon perceived environmental risk.

I used semi-structured interviews and archival document review to understand how institutional settings and personal values influence participants' perceptions of economic, social, and environmental risks related to freight-related land uses, and the participants' uses of environmental science to analyze their perceived risks. First, I conducted a content analysis of past planning documents using existing risk management and sustainability theory to develop an initial coding scheme related to the management of trade-offs in economic, social, and environmental risk. Then, I conducted hour-long semi-structured in-person or telephone-based interviews, followed by focus groups convened among the regional participants to reflect on the participation in the networked planning processes. Study participants include local and regional planners, engineers, public health officials, emergency managers, and other participants in the 'networks of plans' that include long-range transportation, comprehensive land-use, and hazard mitigation planning processes (Berke et al., 2019). I use the interviews and focus groups build on themes reflecting participants' thoughts on institutional arrangements, personal values, available reference knowledge, and other correlates of risk perception outcomes.

I find evidence that participants' capabilities to take action on environmental science in planning decisions vary based on both institutional and individual capacities and frameworks for incorporating scientific information into planning decisions. In particular, participants discussed trade-offs between short-term and long-term planning horizons and inconsistent methods for dealing with presenting and managing the inherent uncertainty in environmental sciences (Renn et al., 2011). Incorporating climate change science consistently across networks of plans was especially challenging across all cases. For planners, these findings demonstrate the continued importance of understanding how and where concepts of uncertainty play a role in planning decisions, and the implications for incorporating evolving science into a complex set of social, environmental, and economic risks during planning processes. Moreover, engaging in participatory co-production strategies between scientific disciplines and planning institutions can play a significant role in developing trust and encouraging a more robust scientific fact base for planning decisions.

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Key Words: Sustainability, Freight, Risk, Economic Development, E-commerce

PROPOSING AN ENERGY URBAN PLANNER ROLE TO INTEGRATE ENERGY CONSUMPTION DECISION-MAKING
Abstract ID: 584
Individual Paper Submission

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Municipalities could benefit from more intentional integration between energy efficiency planning and urban planning. Municipal Energy and Sustainability Managers often have limited information with which to assess their city's building stocks and design the most effective approaches to achieve energy efficiency goals. Further, energy-related information is too often requested at the end of the development process. For example, when utilities are contacted about energy capacity and energy infrastructure needs after a planned development has already been approved and is slated for construction, it stifles any potential for integrated planning or a systematic approach to development.

Integrated planning efforts can be especially beneficial for reducing energy consumption in the multifamily residential building sector. This sector poses unique challenges that reduce the effectiveness of traditional energy efficiency approaches. Significant differences across metropolitan regions, building owner types, and urban forms, are not fully addressed by the current state of energy and urban planning. This paper employs qualitative interviews with key energy efficiency decision-makers, and a data quality and spatial analysis of 2017 Chicago Energy Benchmarking data to identify urban planning-related factors that can address these limitations.

Additionally, the role of an Energy Urban Planner (EUP) is proposed to resolve the identified gaps in data and energy efficiency implementation issues. The objective of an EUP role is to intentionally integrate the de facto energy planning that has been carried out in parallel by municipalities, non-governmental organizations (NGOs), and utility companies. An EUP role that more intentionally plans the reduction of energy consumption can bolster energy efficiency efforts with other urban planning decisions that have energy implications, thus coordinating various aspects of urban planning that have historically been distinct. For example, an EUP would coordinate both the energy savings from retrofit incentives with urban development plans to ensure that progress towards sustainability goals in one area would not be countered by energy intensive development projects in another area.

The paper concludes with a discussion of the potential implications of an EUP role for both urban planning more broadly and specific approaches to reduce energy consumption. We found that there are three main components of an EUP role starting from identifying the energy needs of a municipality, or region, and aligning goals; continuing with the identification, collection, and analysis of relevant data to

make data-informed decisions; and lastly applying insights from data and urban planning theory to design, implement and evaluate the collaboratively chosen approach. Finally, a very important stage summarizing all three previous steps is the information feedback. This feedback from evaluating the implementation of different energy efficiency strategies to inform the decision-makers at the goal setting stage could provide insights for the planning field and it is crucial for learning, adapting, and generating planning and policy recommendations.

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Key Words: Energy Urban Planner, data quality, municipal decision-making, energy planning

INCORPORATION OF STORMWATER MANAGEMENT INTO URBAN PLANNING IN THE UNITED STATES
Abstract ID: 594
Individual Paper Submission

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Urban stormwater runoff is a leading cause of water pollution and quality degradation in the United States. Local governments have historically held responsibility for the management of stormwater issues (Holloway, Strickland, Gerrard, & Firger, 2014). A municipality's public works or utility department has typically overseen the drafting, approval seeking, and implementation of a stormwater management plan (Cesanek, Elmer, & Graeff, 2017). However, their work scope has been often limited to a traditional stormwater management measure that involves collecting and conveying stormwater through sewer systems in order to protect public health and safety, as well as prevent property damage that could result from flooding.

A more recent stormwater management approach, specifically green stormwater infrastructure, has expanded the roles and impact of stormwater management in the field of urban planning. For example, while the conventional stormwater management approach has a single purpose (i.e., stormwater removal), green stormwater infrastructure offers various secondary roles. A growing number of studies demonstrate that green stormwater infrastructure not only contributes to the reduction of stormwater runoff, but it also provides various benefits, such as alleviating urban heat island effects, improving air quality, creating jobs, increasing property values and enhancing community cohesion (Heckert & Rosan, 2015). Unlike the traditional approaches that generally only require public infrastructure development, green stormwater infrastructure necessitates the involvement of both public and private stakeholders, and sometimes requires balancing the competing environmental, economic and social values at stake. Thus, linking stormwater planning with other city-wide planning and policy has become a crucial means of achieving desired outcomes in urban planning.

This research attempts to understand how the 50 most populous United States cities have incorporated stormwater management into their city-wide plans, including comprehensive plans, sustainability plans and/or climate action plans. Based on previous studies concerning stormwater management components

in local plans (e.g., Berke et al., 2003; Kim & Li, 2017), this study uses content analysis to examine the integration of stormwater management considerations with the concerns of city-wide plans. By addressing the issues from a national perspective and exploring the status quo of stormwater management in urban planning, this paper provides planning and policy implications regarding 1) how to avoid limiting the roles and impact of stormwater management strategies within the field of stormwater planning and 2) how to incorporate stormwater management considerations into the city-wide plans to facilitate better outcomes.

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Key Words: stormwater management, green stormwater infrastructure, urban planning, city-wide plan

CRITICAL CARTOGRAPHY FOR URBAN ENVIRONMENTAL PLANNING: EXPLORING THE ROLE OF PARTICIPATORY MAPPING IN THE QUEST FOR ENVIRONMENTALLY JUST CITIES
Abstract ID: 599
Individual Paper Submission

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Environmental "big data" and remotely-sensed data sets are increasingly used to guide environmental planning.[1] This regime of decision-making relies on GIS, using spatial overlays to embed the environmental landscape with values that can be compared, ranked, and prioritized for investment in conservation or environmental infrastructure. This reliance on quantitative, abstracted data divorces environmental planning from its economic, cultural, and political context, excluding non-experts from decision-making. As a result, control over the environmental future of spaces, and the communities to which those spaces are home, becomes increasingly technocratic, raising concerns over who benefits and who is harmed by these decisions.

These concerns are particularly salient in the context of urban environmental planning. Here, a reliance on corporate- and state-produced environmental quality data and regulatory compliance standards serves to justify the siting and operation of toxic facilities in poorer, communities of color,[2] while narratives of sustainability and the "added value" of urban green space are used to justify urban redevelopment, gentrification, and displacement via a process known as "green gentrification."[3] This form of spatial decision-making mirrors the "rational urban planning" model that justified devastating urban renewal policies of the second half of the 20thC, in which data-driven "expert" decision-making paved the way for the destruction of neighborhoods of color.

Critical GIS challenges the technocratic spatial urban regime, using digital mapping to interrogate spatial inequalities and expose geographies of class, race, gender, and environmental injustice. One example of the power of critical GIS projects in the context of urban planning comes from the Anti-Eviction Mapping

Project, which utilizes digital maps, oral history, and community art to mobilize resistance to gentrification and displacement in San Francisco.[4] Critical GIS methodologies have also promoted urban environmental justice, such as the success of the "596acres" Project, which mapped vacant lots in New York City in order to encourage residents to convert them to community gardens. Critical GIS and counter mapping produce ontologies of hope, providing a tool for visualizing alternative, progressive futures and for collaborative, artistic, and community-based place-making.

Scholarship in radical urban planning provides a framework for how we might use critical GIS to reimagine urban environmental decision-making. While planning has historically served to reinforce and reify hegemonic power structures in physical space, radical planning challenges neoliberal capitalist ideologies, decentralizing power without dictating destination, and centering epistemologies of marginalized groups.[5] The bedrock of radical planning is co-production, in which power over space shifts from the individual planner to a decentralized, democratic distribution of authority, framing justice not merely as distributive outcomes but as a process of enablement and empowerment.

Drawing on radical urban planning theory and critical cartography, I present the results of participatory-mapping experiment in environmental justice planning in Minneapolis, MN. This project aims to incorporate human-scale experiences of the urban environment into environmental decision-making process. By allowing residents to create their own data layers, based on perceptions of environmental quality, housing affordability and displacement pressure, and community-safety, this project embraces tenants of radical planning by shifting the production of knowledge and decision-making to communities. In doing so, it seeks to promote environmental justice and combat green gentrification. In an urbanizing world, developing frameworks for compassionate and humanistic environmental decision-making is essential to elevating movements for spatial justice.

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Key Words: GIS, gentrification, sustainability, participatory, mapping

CONVENING REGIONAL CLIMATE COLLABORATIVES: A CROSS-COMPARISON OF US CASES
Abstract ID: 607
Individual Paper Submission

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Collaboration has been increasingly used to address complex regional problems that cross political boundaries and jurisdictions. The roles, approaches and implementation issues associated with collaboration strategies and networks have been widely discussed in the research literature (Forester,

2013; Healey, 1997; Innes & Booher, 2009; Koppenjan, 2008; Margerum, 2011). There has been less analysis of the approaches and deliberations associated with convening collaborative efforts (Vella et al., 2016). Some researchers have identified common processes and issues associated with convening (Carlson, 1999; Margerum, 2011), but have not explored in detail the process of gathering diverse stakeholders prior to the formal launch of a collaboration effort. This paper explores the issues, dialogue and framing of collaborative efforts before the formal launch of a stakeholder-based collaboration effort. We analyze this issue through a cross case comparison of over twenty climate change mitigation and adaption actions plans. These action plans were initiated by local governments across the United States, due to the absence of state and federal leadership. However, the cases include a range of political settings, contexts, and resilience issues. Based on document review, survey data, and stakeholder interviews, we compare and contrast the history of backroom deliberations and framing debates that eventually resulted in a collaborative effort. In particular, we focus on the (1) key terminology and concepts that allowed participants to convene a collaborative effort; (2) the role of intermediaries and leaders in gathering participants; and (3) the key qualities of the forum that enticed leaders to participate. The research findings help address a gap in the research literature about the dynamics of convening and provide specific strategies for how local governments can convene politically difficult issues such as climate change adaptation.

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Key Words: Resilience, Climate change, Collaboration

A CARBONSHED PLANNING FRAMEWORK TO CAPTURE THE BENEFITS OF SECOND GENERATION BIOENERGY CROPS FOR RURAL COMMUNITIES IN THE CONTEXT OF GLOBAL CLIMATE CHANGE
Abstract ID: 612
Individual Paper Submission

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"Biofuel" refers to liquid, solid, or gaseous fuels derived from non-fossilized organic material. Burning wood for heat is the oldest example of human-harnessed bioenergy, but modern forms of bioenergy include the combustion of wood pellets, bioethanol, and methane gas from solid waste digestors. Compared to fossil fuels, which are extracted from deep in the ground, the premise that biofuels are more sustainable is based on assumptions that (1) bioenergy is produced and transported in a way that releases fewer greenhouse gas emissions into the atmosphere, and that (2) bioenergy production can revitalize local rural communities economically by creating demand for bioenergy crops. However, the "productivist rationale" underlying the first generation of biofuels (bioethanol made from corn grain) (Frank and Hibbard, 2017; Daniels et al., 2013) has proven to be of greater benefit to global agricultural interests than it has been to rural communities or the environment.

There are many lessons to learn from the shortcomings of first generation biofuels, and these lessons are critical because of two coming socio-technical conditions that will be relevant for rural communities.

First, technological advancements will eventually make the so-called "second generation" biofuels, which use lignocellulosic crops such as switchgrass as feedstocks, economically viable. Second, the longer global efforts to reduce carbon emissions are delayed, the more pressure there will be to implement so-called negative emissions technologies (NETs) to keep the planet within the recommended 1.5'C warming targets. Implementation of NETs are estimated to require the cultivation of vast areas of dedicated bioenergy crops. By one estimate, an area one to two times the size of India would be required (Smith et al., 2016). Such a transformation would have large environmental and social implications: land devoted to bioenergy crop production can impact food security, biodiversity, water resources, as well as local autonomy. Both socio-technical conditions described above will result in increased demands for second generation bioenergy crops that will impact local economies and environmental quality, as well as the cultural and aesthetic value of rural land (Buck, 2018).

In this paper, I suggest how rural communities might use integrated planning to respond to these future pressures in a way that retains benefits locally. First, I present the case of the "ethanol decade" in the US to illustrate a missed planning opportunity. I use the idea of local sovereignty as a way to understand an alternative to this model. Second, I suggest carbonshed planning, modeled after foodshed planning, as a suite of coordinated infrastructure, land, water, and economic planning activities that can help rural communities retain local energy, food, water, land, and infrastructure sovereignty (Horst and Gaolach, 2015). Third, I present a case study of the first district heating plant fueled by > 90% switchgrass in Southwest Virginia to illustrate rural community benefits and coordination activities. Lastly, I discuss how second generation bioenergy crops are likely to become increasingly significant in the context of global climate change mitigation, how this may present both opportunities and challenges for rural communities, and what options may be available for adaptive infrastructure planning.

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Key Words: Carbonshed planning, Rural planning, Bioenergy, Decarbonization, Negative Emissions Technologies

DIFFUSION OF PHOTOVOLTAIC SOLAR PANELS IN RESIDENTIAL BUILDINGS
Abstract ID: 616
Individual Paper Submission

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Climate change is one of the biggest threats to humankind and can also be framed as an energy problem. Ever-growing energy demand since the Industrial Revolution is likely to continue over the next decades, and the change in our energy production methods is slow. Solar energy is one of the most important sources of renewable energy. It can be exploited through photovoltaic (PV) solar systems for various

applications, and better understanding of the factors in adopting it is needed (Solagni, Islam, Saidur, Rahim, & Fayaz, 2011). As the photovoltaic solar system industry grew globally since the beginning of this century, the cost of installing these systems has decreased significantly.

The adoption of photovoltaic solar systems has the potential to add up to a significant change in the United States, considering the ubiquitousness of solar irradiation and the prevalence of low-density urban development. The objective of this study is to better understand the photovoltaic solar systems' adoption process for residential users. I use the diffusion of innovations literature as the main framework since the adoption characteristics of new technologies proposed by Rogers (1962) are also applicable to photovoltaic solar systems. In this regard, I address following research questions: (a) what affects the photovoltaic solar system adoption rate?, (b) does the adoption of the photovoltaic solar system in residential buildings follow the diffusion of innovations theory?, (c) which policies are effective in promoting photovoltaic solar systems to residential users?, and (d) how does the solar industry adapt to the changes in solar policies and attitudes of residential users?

I carry out this research in two different stages, in which I apply different research methods. In the first stage of the research, I carry out a quantitative analysis by using secondary data and building statistical models to understand the impact of socio-economic, geographical, or technical factors on the photovoltaic solar panel adoption rate in residential buildings. I use two publicly available datasets that contain the records of photovoltaic solar system installations in the United States: The Open PV Project and the Tracking the Sun report. I aggregated the records on photovoltaic solar panel installation at the ZIP code level, which allowed me to calculate the adoption rate and add socio-economic, geographical, and solar insolation variables that are used as the independent variables.

In the second stage, I will conduct semi-structured interviews with key actors from the solar industry in New Jersey with the aim of understanding how the solar industry adapts to the changes in solar policies and attitudes of residential users. I will follow content analysis methods that will allow me to systematically classify and maintain crucial data while reducing the volume of qualitative data to a manageable level. Moreover, by identifying the similarities and patterns in each interview, I will be able to interpret the content of the data and the context to produce meaning beyond merely summarizing the data.

Initial findings reveal that states that have environmentally innovative policies argued by Greenberg and Schneider (2020) have more policies on renewable energy and energy efficiency and higher adoption rates. This finding underlines the importance of state-wide policies implemented to increase the degree of the relative advantage of photovoltaic solar systems for potential adopters. No existing empirical research approaches photovoltaic solar panel adoption at the national level in the United States from this perspective and compares state-wide policies. Since it is important for planners to envision and articulate the future of energy supplies and technological advances (Felder, Andrews, & Hulkover, 2011), an important implication of this study is to investigate how policy-makers can intervene effectively to promote photovoltaic solar system installation in residential buildings.

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ESTIMATION OF EXPOSURE TO URBAN PM2.5 IN FINE SPATIOTEMPORAL RESOLUTION: A LOS ANGELES CASE STUDY
Abstract ID: 637
Individual Paper Submission

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Fine particulate matter (PM2.5) has large impacts on human morbidity and mortality. Even though concerns regarding dispersion models in the distribution of PM2.5 have led to a considerable amount of academic research during the last two decades, little is known about how PM2.5 distributes in a finer spatial and temporal resolution (i.e., local v. regional, hourly v. annual). The limited number of regulatory air quality monitors that most research used significantly restricts the prediction accuracy and spatiotemporal resolution of the generated concentration pattern. To solve this limit, we present an approach to analyzing urban fine particulate matter (PM2.5) data from a network of low-cost air sensors to obtain a finely resolved concentration map.

In this study, the PM2.5 was measured with the low-cost air sensors PurpleAir PA-II and PA-II-SD on an hourly time-base at more than 250 locations spreading over urban areas in Los Angeles County, California for 2018 and 2019. The measurements show that hourly concentrations vary not only between different locations, but also over the day. Being proved as a statistical and reliable technique used to determine exposure to air pollutants in epidemiological studies, land use regression (LUR) models for PM2.5 are developed using different strategies: by means of dummy variables, with dynamic dependent variables and with dynamic and static independent variables (e.g. temporal variables, land use variables, traffic variables, and meteorological variables).

A global and 48 hourly LUR models were developed — weekday hours and weekend hours, respectively. Results show that a single global regression model is not able to capture either temporal or spatial variance of urban PM2.5 concentrations when compared to hourly LUR models. The model results show that weekend hourly LUR models perform better than weekday hourly LUR models, where R^2 values for weekend models are mostly higher than those of weekday models (range from 0.44 to 0.63 against range from 0.34 to 0.51). Between 3 p.m. and 7 p.m. on weekdays, the R^2 values approximate the most significant levels, whereas on weekends, the LUR models perform best in the early morning between 3 a.m. and 6 a.m. and at late night between 9 p.m. and 1 a.m. Although models of consecutive hours are developed independently, similar variables turn out to be significant all the time. Traffic and meteorological predictors were found to be significantly affecting the hourly LUR models, while land use variables were also important factors but vary by hours. Using the low-cost air sensor network and hourly LUR models, we are able to generate PM2.5 dispersion map in much finer spatial and temporal resolution. Time-activity diaries can be combined with LUR models, enabling detailed exposure estimation and limiting exposure misclassification, both in shorter and longer time lags.

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VACANT LAND, FLOOD RISK, AND URBANIZATION: EXAMINING LAND COVER CHANGE IN THE DALLAS-FORT WORTH METRO AREA
Abstract ID: 667
Individual Paper Submission

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The Dallas-Fort Worth (DFW) metropolitan area is one of the fastest growing areas in the U.S. As the urbanization process continues in DFW, existing greenfields are being developed and more developments appear near floodplains. This research examines the relationships between existing vacant land, flood risk, and the urbanization process by analyzing the land cover change between 2011 and 2016 in and around current floodplains and vacant properties in the DFW metro area. The major focus lies in the questions: 1) Are floodable neighborhoods more vulnerable to new development activities? 2) Is existing vacant land a catalyst for new development activities? and 3) Are the effects of vacant land different by neighborhood socioeconomic status and by the level of flood risk?

To answer these questions, this study operationally identifies development activities using the USGS land cover information and compares with existing flood risk and vacant properties. The first model examined if neighborhoods with a high flood risk are more likely to have new developments and if existing vacant land is a catalyst for these developments (Model 1). Then, three subgroups by different income levels were separately examined to compare the effects in low, middle, and high-income neighborhoods (Model 2). Finally, subgroups by different flood risks (low, moderate, and high risk) were compared to examine if vacant land is a catalyst only in neighborhoods with certain flood risks (Model 3).

The results suggest that, in the DFW area, floodable areas are experiencing more development. Specifically, the odds of having large development activities are increased by 103% in high flood risk areas. Also, existing vacancies are a trigger for new development only when vacancies are not clustered and when the flood risk is low. In fact, significant clusters of vacancies decrease the odds of having a large-scale development by 60.5%, and small-scale development by 61.2%. A heterogeneous pattern across different neighborhood profiles was found as well. For low-income neighborhoods, the odds of inviting large-scale development significantly increases by 281% in high flood risk areas while the effect in middle-income neighborhoods is marginal. Finally, there was no sign of dramatic neighborhood change or gentrification caused by the rapid urbanization process.

This study encourages city planners to pay attention to citywide vacant properties as they could either predict or detour potential developments. While existing vacant land can catalyze both large- and small-scale developments, clustered vacancies would not. This implies the importance of collecting a citywide vacant land inventory and proactively guiding potential development patterns through regulations if necessary. At the same time, where the flood risk is high, more attention is required for the neighborhood socioeconomic status than existing vacant land uses.

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Key Words: Urbanization, Vacant land, Flood risk, Neighborhood change, Resilience

REVISITING THE KATES/PIJAWKA MODEL FOR DISASTER RECOVERY IN THE AGE RESILIENCY
Abstract ID: 682
Individual Paper Submission

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Over 40 years ago the Kates Pijawka Model for Disaster Recovery was introduced in the book chapter From Rubble to Monument: The Pace of Reconstruction (Kates & Pijawka, 1977). Since its publication in the 1977 the model has been used and cited hundreds of times to describe and explain the process of how cities go through reconstruction post disaster, such as New Orleans post Katrina (Kates etal 2006) and New York post Sandy (Jahan, 2015) to name a couple examples. The model looks at four key stages or periods in the recovery process: 1. Emergency; 2. Restoration; 3. Replacement Reconstruction; and 4. Commemorative, Better and Development Reconstruction. Beyond simple descriptions of each phase the model showed how each phase operated in different disasters (earthquakes, floods, hurricanes, etc.), the timing of each phase, and the costs associated with each phase. While this model and its four stages have been used many times to explain the post disaster recovery of urban areas the question prevails whether in the face of rapid urbanization and climate change over the decades since first being used does the model still hold true or has it reached its shelf life? Furthermore, what can be done to update it for the third decade of 21st century?

Through an in-depth view of the literature and an examination of how it has been used throughout the years this paper will look to answer the question of its usefulness and shelf life. Additionally, the paper will suggest how changes can be made to the model. Upon deciding on those changes, they will be put to the test using the case study of Hurricane Maria in Puerto Rico which made landfall September of 2017 and devastated the island. The aim of the paper will be to create an updated version of the model which can be used by academics and policy makers to assess recovery success and for planners to be better design and implement more resilient urban forms that can adapt and absorb to future shocks to the systems as well as alter their physical design to be more prepared in a more unstable climatic world. Moreover the paper will look to update the model particularly in regard to issues of social and economic equity which is one of the backbones of resiliency and was not deeply touched on in the original model.

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Key Words: Disaster Recovery, Resiliency, Climate Change

TOWARD A FRAMEWORK FOR CO-BENEFITS OF CLIMATE ADAPTATION: COMPARING THE CO-BENEFITS APPROACH WITH PRINCIPLES OF SPATIAL PLANNING

Abstract ID: 730
Individual Paper Submission

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Cities in the United States use the concept of co-benefits in their climate plans to describe additional benefits of mitigation and adaptation strategies. The cities' use of the concept is in line with the development of the academic literature and official policy documents. Both emphasize the potential of co-benefits in the context of climate change (Mayrhofer and Gupta 2016). The potential of co-benefits lies within the concept's resemblance of a win-win strategy. Climate change and other goals can be addressed with a single measure. The key idea behind the co-benefits approach is that environmental and developmental goals can be reconciled. Responding to climate change does not have to halt and can even stimulate economic or social development.

Strategies with co-benefits are actively promoted for climate change planning practice (Meerow and Woodruff 2020). However, it remains unclear how a co-benefits approach should be implemented to create effective climate actions. Therefore, this paper questions how the full potential of co-benefits for climate adaptation planning can be reached.

This paper takes a two-step approach. First, we perform a content analysis of current climate plans of US cities (e.g. San Antonio, San Diego, and Philadelphia) to describe the use of the co-benefits approach in practice. In addition, we review the academic literature and official policy documents to assess current knowledge on co-benefits of climate adaptation. Second, we compare key characteristics of the co-benefits approach to principles of sustainable spatial planning (Godschalk and Rouse 2015).

This paper shows that large gaps exist in and between the theory and practice of the co-benefits approach in planning. The academic debate acknowledges limitations of the co-benefits approach but fails to propose a framework that matches the current theory and practice of climate change planning. Co-benefits are mostly discussed in relation to climate change mitigation, from a mono-disciplinary perspective. Different interpretations and applications of the term in current climate plans hinder the evaluation of empirical data necessary to assess the actual realization of co-benefits of climate action.

It is therefore surprising that the planning discipline is not more extensively engaged with the co-benefits of climate adaptation. Spatial planning is critical for climate adaptation and accustomed to a multidisciplinary approach. As such, the discipline of spatial planning is well-equipped to spur the development of a framework for understanding and application of co-benefits for climate adaptation.

We propose a framework that combines insights from the co-benefits approach and principles of sustainable, spatial planning. With a focus on place-based synergies, planning provides a co-benefits approach with a stronger sense of place. At the same time, the co-benefits approach realigns temporal differences between future adaptation and immediate benefits of climate action, adding a stronger sense of time.

This paper fills a current void in planning theory and practice, by connecting the co-benefits approach to principles of spatial planning. Insights from this paper serve as a foundation for future research on the actual realization of co-benefits of climate adaptation. The proposed framework functions as a guide for application of the co-benefits approach in future planning for climate adaptation.

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Key Words: co-benefits, climate adaptation, climate change planning, spatial planning

COMMUNITY PERCEPTIONS AND CHALLENGES OF GREEN STORMWATER INFRASTRUCTURE PLANNING IN URBAN NEIGHBORHOODS
Abstract ID: 738
Individual Paper Submission

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Green stormwater infrastructure (GSI) has the potential to mitigate a considerable amount of runoff from storms and flooding, while also improving the aesthetic and ecological performance of an urban built environment. Prior research has documented environmental and economic benefits of GSI projects including, but not limited to, increased water quality, increased air quality, reduced energy consumption, and increased property values. Literature on the social benefits of GSI, however, is insubstantial. While GSI projects such as rain gardens, bioswales, stormwater bumpouts, and tree trenches are considered an attractive approach to managing stormwater, it is not without its challenges. In particular, there is a lack of understanding on whether urban residents view GSI as an asset to their neighborhood or as projects that will attract a new set of social and environmental problems. The aim of our paper is to understand the social contributions of GSI and how people become (or do not become) connected to these projects. We examine neighborhood and user perceptions of GSI projects in two adjacent cities: Philadelphia (Pennsylvania) and Camden (New Jersey), located directly across the Delaware River from each other. Two-thirds of Philadelphia is within a combined sewer system (CSS), and Camden in its entirely is a CSS. Both cities face frequent flooding and stormwater issues, often leading to combined sewer overflows (CSO) that pollute nearby rivers and waterways, as well as city streets. Philadelphia has recently committed to prioritizing GSI features throughout its stormwater management system as one strategy for meeting federal requirements and improving urban infrastructure. These cities have collectively installed hundreds of GSI projects, which are expected to become socio-economic and environmental assets to their encompassed communities, including those burdened by environmental injustices, so long as these installations meet the needs of the community and are understood by the receiving neighborhood's residents. In order to understand the appearance, performance, and obstacles of these GSI projects, we conducted extensive field observations of GSI projects in Philadelphia (n=183) and Camden (n=55) and collected data on social aspects such as project setting, surrounding environment, social use and interaction, appearance and recreational appeal. We also conducted semi-structured interviews of 20 residents from these cities, discussing various social aspects and perceptions of GSI. After reviewing and analyzing field observation data, we identified several major themes including the following: (i) Lack of signage leads to lack of understanding, and can cause an increased amount of misuse; (ii) Interactions with GSI can increase if implemented in a suitable location; and (iii) Conditions are indicative of improper maintenance/lack of routine maintenance. Additionally, qualitative content analysis of interview transcripts helped us evaluate residents' understanding and perception of GSI design and maintenance, as well the concept of GSI as an infrastructure. Lack of knowledge and community support for GSI can result in the rejection of these projects, which can facilitate improper use, maintenance and function, and ultimately fail to mitigate the detrimental effects of a CSS. We have identified what community-based aspects of these projects can affect their ability to reach their full potential and formulated recommendations to ensure their longevity and productivity. It appears as though one pathway for overcoming the problem of resident and stakeholder education is through a careful

design of decision-making and maintenance-planning processes prior to actually undertaking GSI installations. Consistent with prior research, we speak to the importance of participatory planning processes in improving community acceptance, and interest in, GSI installations.

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Key Words: social factors, green stormwater infrastructure, urban environment, Philadelphia, Camden

ARE SMART GROWTH STRATEGIES EFFECTIVE TO ADDRESS URBAN HEAT ISLAND EFFECTS?
Abstract ID: 747
Individual Paper Submission

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This research explores the relationship between urban form—which exhibits smart growth principles such as mixed land use, high density, increasing access to public transit, and enhancing the walkable environment—and urban land surface temperature (LST) in Los Angeles County. Currently, the rising LST aggravated by urban sprawl is a critical problem associated with climate change and its related environmental threats. Scholars have demonstrated that urbanized areas have a higher level of LST, indicating the adverse consequences of urban sprawl. In response to these negative consequences of urban sprawl, the discourse on compact urban form has received significant growing momentum. Smart growth is one of the comprehensive planning frameworks that promotes compact urban form by incorporating land use, transportation, environment, urban design, economic development, and housing. The advocates of smart growth believe that compact development combined with smart growth strategies can enhance quality of life, protect the natural environment, and develop economically vibrant communities. Therefore, it is timely to assess whether smart growth strategies are effective for lowering the elevated LST in urbanized areas. Previous studies mostly have focused on the role of land cover compositions on LST. Therefore, this research contributes to the literature by incorporating diverse features of urban built environments, such as residential and job density, street connectivity, open green space, and transportation system, in the analysis. This research utilizes multiple datasets, such as the smart location database distributed by the Environmental Protection Agency, U.S. Census data, the National Land Cover Database produced by the U.S. Geological Survey, and the Landsat level 2 surface temperature data provided by the U.S. Geological Survey. By employing Geographically Weighted Regression models, this study reveals that the presence of walkable environments and green spaces is vital for lowering the elevated LST, particularly in more urbanized areas in Los Angeles area. The locally varied relationships between smart growth factors and LST across the region indicates the importance of localized approach for accommodating future urban growth and addressing high LST in urbanized areas.

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Key Words: Smart Growth, Land Surface Heat, Urban Sprawl, Geographically Weighted Regression

GREEN PROGRESS OR GREEN PARADOX: IDENTIFYING GREEN SPACE ASSOCIATED GENTRIFICATION IN BEIJING
Abstract ID: 755
Individual Paper Submission

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In the past three decades, the Chinese government has made tremendous progress to increase the volume of green space to mitigate multiple negative impacts of urbanization. However, such effort prioritizes the quantity over other dimensions of urban green space planning including quality, spatial distribution, as well as varying socio-economic factors. While green space provides multiple benefits for urban residents, it often triggers gentrification in neighboring areas and thus tends to dislocate marginal people who can no longer afford to live in such areas due to the increased living cost. By using Beijing as a case study, this paper focuses on such concerns and aims to identify whether the extensive afforestation projects in the past decade results in gentrification. If such a trend is observed, the "green progress" aiming to benefiting more residents finally serves advantaged groups who constitute a small spectrum of total population of the city—a paradoxical result concerned by many scholars.

Relying on multiple open source data and Hedonic Pricing Model with a Difference-in-Difference indicator, the estimation results show that adding new green spaces can trigger gentrification by increasing the housing prices in the neighboring communities in Beijing. However, the capitalization scale of green spaces depends based on a variety of features. Distance to a property, area, vegetation quality, presence of water features, and types of green space all play different roles in affecting the housing price and thus have divergent capacities of triggering gentrification in the neighboring communities. The empirical results can be used as a reference to gauge the dislocation effect due to potential gentrification outcomes from urban green spaces, based on which the decision makers and planners can propose inclusive policies or planning schemes to avoid turning a "green progress" into a "green paradox" in the future afforestation efforts.

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Key Words: Urban Green Space, Gentrification, Social Equality, Beijing, Urban Planning

SCENARIO-BASED GREEN INFRASTRUCTURE PERFORMANCE ASSESSMENT FOR BUILDING URBAN RESILIENCE
Abstract ID: 757
Individual Paper Submission

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With an increase in the number of hazards and recognition of climate change, the importance of resilience has been gradually getting more attractions of both practitioners and researchers in urban planning (Fu & Wang, 2018; Meerow & Newell, 2017). Green infrastructure (GI) is an important strategy of urban planning aimed at enhancing urban resilience by providing stormwater runoff attenuation, social and ecological services, and green employment (Fu, et al., 2019). It is necessary to understand and compare various GI types for their individual and combined contributions to urban resilience. However, it is lacking in the current literature a comprehensive assessment framework combining quantitative and qualitative measurements to assess GI performance in promoting a social-ecological system resilience. We propose to develop a Scenario-Based Planning Support System (SB-PSS) to facilitate the assessment process by building a robust indicator set incorporates quantitative and qualitative indicators using the fuzzy comprehensive evaluation (FCE). Quantitative indicators are modeled, whereas qualitative indicators are surveyed; both types of data are used in the assessment of urban resilience. FCE is an effective means to transform original measurements (quantitative or qualitative) into defined fuzzy membership degrees (Gharibi, et al., 2012; Pislaru, et al., 2019). GI Urban Resilience Capacity Index (GIURCI) is conducted to support decision-making for GI planning through scenario comparisons.

Five scenarios were developed in Congress Run sub-watershed (within Mill Creek watershed, Ohio, USA) to test popular types of GI (rain barrels, rain gardens, detention basins, porous pavement, and open space). By our definition, open space provides temporary storage of stormwater runoff and publicly-accessible recreation areas (e.g., picnic shelters, playground, etc.). GIURCI was conducted based on GI performance in ecological, economic, and social resilience indicators. The results show open space scenario achieves the overall highest performance (GIURCI=4.27/5). To implement the open space scenario, the public or stakeholders need reclaim or purchase suitable vacant lots and convert them to forest land, detention basins, and facilities. This study helps planners acquire scientific and practical knowledge of GI in building urban resilience. The benefit of SB-PSS is it allows public participation in the assessment process and incorporates users' preferences and concerns in scenario generation. We propose a customizable SB-PSS and use widely-accepted indicators of resilience from the literature, making the methodology easy to duplicate, customize, and apply to other locations to assess environmental, economic, and social influence on urban resilience capacity for several types of GI.

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Key Words: stormwater management, green infrastructure, assessment, urban resilience, planning support system

APPLICABILITY OF TRANSITION MANAGEMENT APPROACHES TO THE JAPANESE PLANNING CONTEXT
Abstract ID: 773
Individual Paper Submission

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Sustainability transition has become a major challenge to the cities around the world particularly after the decade of frustrating experience with mitigating global warming (Loorbach, Frantzeskaki and Avelino 2017). The multi-level perspective (Geels and Schot 2007) suggests that managed transitions at the socio-technical "regime"--which is the dominant order in a societal system including policy, technology, culture--is needed for dealing with the global challenges. For example, energy transition advocates call for an abandonment of fossil-fuel based energy and replacement by renewable ones. In order to scale-up grassroots movements, such as the ones of tactical urbanism (Lydon and Garcia 2015), they must be steered and coordinated so that they would collectively push for a systemic transition of the regime. In response, European cities, particularly those in the Netherlands, have experimented with transition management approaches to urban governance for more than a decade (Loorbach 2010).

The approach, however, has rarely been experimented in the urban planning context outside Europe. Differences in institutional structures and meta-governance might preclude its use outside Europe. Transfers of such governance approaches beyond different contexts require their adaptation to the local context (Matsuura 2006). Particularly in Asia, the influence of power distance, which represents a tendency of deferring to authorities, is substantiated in the studies of cross-cultural communication (Meyer 2014). This predisposition to authority can be a barrier to introducing the transition management approach to Asian cities because the idea of challenging the current regime does not fit with the context of power distance in Asia.

Our research question, therefore, is the applicability of transition management approaches to the Asian urban planning context. Our working hypothesis is that the approaches do not operate well in the Asian context because of citizen's reluctance to challenge the regime and explore the opportunities for transition.

In order to explore this question, the authors experimented with transition management approaches, as practiced in the Netherlands as such, in Japan. One of the experiments is organized in a newly-developed suburb of Urawa-Misono neighborhood. The neighborhood, whose land use is primarily residential and commercial, is developed on a former wetland with a planned population of thirty two thousand. Due to

its suburban characters, the neighborhood has many sustainability problems, including dependence on private automobiles, lack of daytime population, and weak resilience against unforeseen climate change impacts. One of the authors organized multiple workshop meetings, involving local frontrunners, for exploring its sustainability transition strategies for 2050. Another experiment is a series of workshop meetings for promoting bicycle usage in Kanazawa City. Although the city is the pioneer among Japanese cities in implementing bicycle-friendly streets, the number of riders remains the same. By involving local activists, the authors organized three workshop meetings for exploring strategies for accelerating the transition to a more bicycle-oriented city.

These experimental workshops have demonstrated the possibility of adopting transition management approaches in Japan, even though these processes explicitly addressed the need of challenging the conventional regimes and accelerating a systemic change. In our analysis, the proposed actions produced at the Urawa Misono workshops all have the expected outcomes of transition management processes, which are a sense of direction, an impulse for local change, and collective empowerment (Roorda et al 2014). Time-series survey of the participants in Kanazawa experiment also indicates an increase in the perceived ability of making a systemic change in the society. These evidence indicates the possibility of adopting transition management approaches in the Japanese planning context.

The research is limited in that the strategies produced in the workshops are yet implemented. The research, however, demonstrated the possibility of taking the initial step of managed transition in a different context.

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Key Words: transition management, sustainability, Japan, bicycle policy, urban governance

PROTOTYPICAL RESILIENCE PROJECTS FOR POST-DISASTER RECOVERY PLANNING
Abstract ID: 826
Individual Paper Submission

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Gaps and research questions

Even though the debate on urban resilience is continuing, many countries have initiated plans and implemented programs to guide local communities towards achieving it (Weichselgartner and Kelman, 2015). Despite the theoretical attractiveness of resilience, however, not knowing how to approach the concept by actionable and tangible projects makes it challenging for resilience practitioners to rehearse integrated urban resilience concepts. In addition, when decision makers and planners are building resilience in the recovery phase, they would question what projects can be adopted. Even though Meerow & Newell (2019) employed a typical resilience strategy- green infrastructure- as an example to answer these questions, it is challenging to generalize the findings to other resilience strategies. Moreover, few studies examined the actionable pathway to achieve resilience in practice, such as developing implementable resilience projects for the recovery planning (Mabon, 2019). Therefore, understanding what resilience projects can be employed is an urgent endeavor for post-disaster recovery planning

(PDRP) practitioners and planners.

Collectively, we ask the following research questions:

1. What are the prototypical resilience projects for enhancing resilience after the natural disaster?
2. From a top-down perspective, who is responsible for implementing the resilience projects for PDRP? What are the economic and environmental benefits of the resilience projects?
3. From a bottom-up perspective, to what extent, the public support and community coordination could be involved in implementing the resilience projects?

Methods and Data

To answer the first research question, we applied the text mining and clustering methods to extract prototypes from 940 resilience projects that were documented in the Hurricane Matthew Resilient Redevelopment Plans. The project title and project summary are employed to represent the semantic similarity between pairwise projects. More specifically, 50 counties are involved in the Hurricane Matthew Resilient Redevelopment Plans. Participating counties must draft a redevelopment that specifies resilience projects for the areas of economic development, environment, housing, and infrastructure.

To answer the second and third question, we developed a code scheme of 20 variables covering a range of goal, time schedule, economic impacts, environmental impacts and implementation characteristics from the project documents. Our interest is in the distinctive characteristics of each prototypical project in terms of building resilience, which can assist practitioners in formulating resilience projects that are responsive to these distinctions.

Results and policy recommendation

Our analysis of resilience projects reveals the following findings:

(1) Based on the projects from Hurricane Matthew Resilient Redevelopment Plans, we identified four prototypical housing projects, five prototypical economic development projects, seven prototypical infrastructure projects and four prototypical infrastructure projects.

(2) Prototypical projects in the infrastructure group more rely on local government compared to other groups whereas two prototypical projects in the economic group more rely on regional government. Overall, economic projects are the most cost-effective. Project designers show the least confidence in obtaining environmental benefits and return of investment of housing projects.

(3) 87.5% of all projects do not require coordination with other communities and counties. Particularly, 92.9% of housing projects are supposed to be implemented dependently by the local county. Many project designers are not sure about the level of public support (27.8%), particularly for the economic projects (34.6%).

According to our results, we have the following recommendations for future post-disaster recovery plan:(1)Develop resilience projects as tangible actions to realize resilience goal; (2) Design and encourage projects that can achieve multiple benefits; (3) Encourage robust community coordination and public engagement during project design; (4) Foster more flexibility for disaster recovery funding.

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Key Words: resilience project, post-disaster recovery plan, project evaluation

MARKET-LIKE NUTRIENT CONTROL POLICY AND RURAL-URBAN DYNAMICS: A WISCONSIN CASE STUDY
Abstract ID: 850
Individual Paper Submission

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Market-like environmental policies enable transfer of pollution reduction credits among dischargers and are perceived as a cost-effective approach to pollution control. However, such programs for water quality face a particularly complex situation when the goal is to engage both regulated point sources (PS) and unregulated nonpoint sources (NPS). Much attention has been paid to design, implementation, and evaluation of these programs, while their social context – the relationship between rural and urban communities in the watersheds – is understudied. We argue that the transfer of pollution credits from NPS (farms) to PS (e.g. municipal wastewater treatment facilities), despite its transactional feature, is built on the existing rural-urban social network and in return reshapes the relationship. We explore how the PS-NPS water quality market programs interact with the urban-rural dynamic in a watershed. In particular, we are interested in the mechanisms for buyers and sellers to connect with each other, as well as the implications of the transaction to the local community.

Wisconsin's Adaptive Management (AM) program for phosphorus control provides a good opportunity to answer these questions. Enabled by statewide numeric phosphorus standards established in 2010, this program allows all the polluters in the same watershed to coordinate efforts to meet an ambient water quality standard instead of individual effluent standards at outfalls. The AM program relies on PS-funded phosphorus reduction by implementation of agriculture Best Management Practices (BMPs). Among Wisconsin's 16 cases proposed as of 2019, we concentrate on the very first one, Oconomowoc Watershed Protection Program (OWPP) led by municipal wastewater treatment plant of City of Oconomowoc. OWPP formed an extended partnership network connecting local NGOs, farmer-led groups, regional planning commission, consultant, and adjacent towns and cities. It also obtained support from federal, state, and local governments. As a result, though still in its early phase, OWPP is providing a model through successful implementation of BMPs, empowerment of farm-led group, and its visibility in the community. This case study includes interview of key stakeholders in this network and analysis of archival data.

Our case study draws from the theory of social network analysis with a special focus on brokering and bridging social capital. Based on the case of OWPP, we first explore the factors that brought urban partners and farmers together. Critical structural elements emerge such as existing social capital between rural and urban communities, resource gap that creates demand and supply, and organizational infrastructure that facilitate discourse. Besides, a process-based analysis expands the inquiry to individuals who are instrumental in the collaboration and the patterns of their quasi-brokering activities. Combining structure and process perspectives, the role of network in this PS-NPS water quality market is discussed. We then analyze the implication of OWPP to the rural-urban relationship. Three types of outcomes are identified: create new network, rearrange existing network, and connect multiple networks. We conclude that, besides influence on water pollution compliance, successful implementation of PS-NPS market-like program can bring about more profound social relationship adjustments on watershed level and open the window for co-learning and further actions. As AM cases accumulate, comparative studies will be used to enrich the details of this framework in the future.

This study will interest planning scholars as it applies social network theory to examine the market-like water quality programs via the lens of rural-urban relationship. It broadens the scope of survey on benefits

and consequences of environmental markets. For practitioners at local government's conservation departments, university extension divisions, and NGOs, this informative case study introduces the lessons learned from one promising case. Gaps in the network are also identified and opportunities for participation in similar markets are revealed.

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Key Words: Case study, nonpoint source pollution, social network, environmental service market, watershed management

WATERFRONT EVOLUTION AND ADAPTATION IN BOSTON: THE ROLE OF TIDELANDS LAW AND POLICY IN PLANNING
Abstract ID: 852
Individual Paper Submission

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The interface between land and sea is an ecologically rich habitat and has long been a focus of human settlement and economic activity. It is also increasingly a site of risk for coastal cities. Climate adaptation planning is often presented as a novel endeavor rather than a process embedded in existing social-ecological relationships with long histories (Bassett and Fogelman, 2013). This paper will explore the urban-tidal interface as an often-overlooked, dynamic zone that has shaped coastal urban evolution and now plays a vital role in its planning decisions as coastal cities adapt to climate change.

 In the past, many coastal cities in the United States hardened their shorelines with built infrastructure and expanded them in order to create new land. However, this practice declined by the late 20th century due to the implementation of environmental laws and other waterfront regulations designed to preserve the integrity of coastal waters (Archer, 1994). Addressing the threats of 21st century sea level rise and increasing flood risks in dense urban coastal areas, however, brings renewed interest in retrofitting of urban shorelines, which may include filling areas of the shoreline to create new land—both horizontally extending the shoreline as well as raising its height—as a cost-effective way to protect existing neighborhoods and municipal infrastructure. As such, the need to physically alter waterfronts is likely to move again to the forefront of urban infrastructure planning (Nordenson et al., 2018).

This paper bridges urban history and contemporary urban planning through a qualitative case study of Boston, Massachusetts. The city provides a notable example of shoreline evolution; Boston gained about 5,250 acres of constructed land, much of which is projected to be at a high risk of flooding with sea level rise. While this change has been documented in previous planning histories, less explored is the legal, regulatory, and administrative structures governing the intertidal space, and how those structures shaped Boston's expansion.

This paper first traces the evolution of the laws and policies governing Boston's extensive tidelands. Drawing upon government reports, legislation and case law, maps, newspaper articles, and secondary sources, I focus on time points of major shifts in governance, beginning with the creation of the Colonial Ordinances of 1641-7, which established private property to the low tide line while also preserving public usage rights. Legal disputes along a waterfront dominated by private development gradually led to state regulatory control in the 19th century. The notion of a public trust in tidelands that was first codified in colonial days was reconfigured in the 20 century when emerging waterfront development interests, new federal coastal management policies, and a landmark 1979 court case prompted state legislation and regulations.

Drawing on published documents and interviews, I then explore how this historical regulatory regime impacts the 'adaptability' of the shoreline as public and private actors explore potential climate adaptation solutions involving fill as part of protective coastal infrastructure. I consider where and how climate adaptation aligns or conflicts with existing laws and policies, focusing on solutions that have been designed or proposed by government, professional experts, and academic groups. The findings contribute to a growing body of research that contextualizes urban risk and adaptation under climate change within a larger history of urban planning decisions.

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Key Words: urban, waterfront, law, history, adaptation

UNDERSTANDING PLANNERS ROLES IN THE DISASTER RECOVERY PROCESS
Abstract ID: 879
Individual Paper Submission

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As disaster trends continue to rise, communities across the globe are increasingly concerned with the aftermath of disaster impacts (Cutter, 2008; Berg, 2010). These concerns are not without merit; the United Nations Office for Disaster Risk Reduction (UNDRR) concluded that future "communities will have to adapt even more to these stressful environmental conditions, through disaster risk reduction and resilience building measures" to withstand multiple disasters and recover following disaster impact (UNDRR, 2015).Historically, disaster recovery was defined as the restoration to a previous state of wellbeing, in which people experience 'closure' and communities, economies and infrastructure return to pre-disaster levels (Winkeworth, 2007). However, simply rebuilding or restoring may not meet the standards needed to combat increasing and intensifying storms, and thus researchers have refined the definition to include the "intensity of impacts and the combined social, economic, and physical processes by which an area regains normal life and adapts to new circumstances" (ibidem). By this definition, a recovering

community moves from a state of reaching normalcy to a state of adaptation for future events.

Hazard mitigation planning enables communities to effectively pursue actions that help reduce or eliminate risks to life and property from natural hazards. Planners can play a key role in guiding communities through the complexities of recovery management, post-disaster decision-making, and long-term risk reduction by educating stakeholders and engaging them around holistic consideration of disparate variables like land use and development patterns, infrastructure, density, and vulnerability.

This study investigates the planner's role in the disaster recovery process. We designed and administered a 51-question online survey, targeting American Planning Association members, to assess planning practitioners' understanding of disaster recovery perspectives, experiences, and the needs of the broader planning community and answer the following research questions:

(1) What are planners' perceptions of the disaster recovery process and their roles in community recovery?

(2) What do planners need to know about disaster recovery to better support their communities?

Survey results indicate that many respondents (43.43%) felt they played a key role in the recovery efforts (33.33% reported feeling neutral, while the remainder felt they did not play a key role). Based on the survey, the majority of respondents would like to learn disaster recovery planning through a workshop, seminar, or conference. We recommend conducting training that best fits with this strong respondent preference. Very few respondents actually participated in pre- or post-disaster recovery planning, suggesting a need for increased planning efforts in these areas. A large number of respondents indicated that they used no planning tools in the pre-disaster recovery plan. This result highlights a prime opportunity for increased guidance and training.

This study identifies the role of planners in the disaster recovery process, and what planners need to know about disaster recovery to better support their communities. This study provides scholars and planning practitioners witha framework for collecting information from recovery planners and disaster specialists regarding their concerns, perceptions and best practices regarding community recovery.

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Key Words: Resilience planning, Disaster recovery, Community recovery, the planner's role in disaster recovery

CHANGES IN THE WATER: THE IMPACT OF NATURAL HAZARDS VULNERABILITY AND EXPOSURE ON POPULATION CHANGE
Abstract ID: 885
Individual Paper Submission

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The effects of sea level rise and an increased propensity for major storms due to climate change are expected to drive a dramatic reduction in the availability of habitable coastal land and induce retreat from particularly vulnerable areas (Allen et al. 2018; Hino et al. 2017). However, there is little understanding of how existing flood vulnerability and hazard exposure influences population changes or the thresholds at which these impacts are realized (Black et al. 2011; Bardsley and Hugo 2010). In this paper, we seek to understand how different aspects of environmental risk induce changes in the demographics of vulnerable areas. More specifically, we ask, how does physical vulnerability to flooding and exposure to major storm events interact to influence population change over time.

Using a geospatial dataset of building locations along with FEMA's flood hazard maps, we quantify the proportion of buildings within a census tract that are located in a floodplain and use federal disaster declarations are used to quantify major storm events for each census tract. We control for a number of mediating variables, including demographics, economic indicators, geography, and population trajectories. We measure census-tract level population change over a study area that encompasses the Southeast United States – Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Texas – from 1990 to 2018. Our analysis employs multilevel regression, allowing us to assess the effect of our key explanatory variables at different geographic scales.

Our findings suggest that populations have differential responses to environmental risks based on geographic location, which are compounded when physical vulnerability is accompanied by hazard exposure. More specifically, while coastal communities have experienced significant population growth despite high levels of flood vulnerability, those subareas that are exposed to multiple disasters possess a negative relationship with population growth, suggesting that hazard quantity may be an important determinant of retreat from coastal areas. Comparatively, areas subjected to riverine-based flood vulnerability are inclined to population loss in reaction to moderate risk, but less reactive to major events.

Our initial analysis suggests that major storm events play a focusing role in raising awareness of geographic vulnerability and flood risk, which may induce population shifts away from vulnerable areas following repeat storm events. We expect that these risk-responses will become more pronounced in an era of climate change as the severity and frequency of natural disasters increases and awareness of vulnerability heightens. As population loss leads to reduced community resilience, municipalities subjected to disaster-related impacts may also need to contend with a decreased ability to support its remaining residents' livelihoods (McLeman and Smit 2006). The policy-relevant findings from this study can be used to help understand environmental determinants of population shifts, as well as inform post-disaster recovery and identify future areas for targeted managed retreat programs.

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THE MAKING OF A SUSTAINABLE CITY: THE FORMULATION OF URBAN SUSTAINABILITY POLICY IN TEL AVIV-JAFFO (2000-2020)
Abstract ID: 911
Individual Paper Submission

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Recent years have brought intensive scholarly attention to the framework of urban sustainability, and how it shapes urban policy and planning in the age of rapid urbanization, environmental pressures and climate change. There are numerous contributions on how urban sustainability, as a theoretical framework and as a prescriptive concept, should be applied to urban planning, as well as many surveys and comparative analyses of urban sustainability plans around the world (e.g. Wachsmuth & Angelo, 2018). Less attention has been directed to the question of how urban sustainability is conceived and adapted locally, through the interactions of local and international actors, as well as the myriad of projects and plans that are put in place (Hughes, 2016). A better understanding of the practice of policy formation could shed light on the way it affects the meaning, scope, and success of urban sustainability policy (e.g. Campbell 2016).

This paper addresses the process of urban sustainability policy formulation – as one that is highly localized, reiterative, and at times experimental and contradictory. It does so by outlining how urban sustainability, emerges and changes over the recent two decades in the city of Tel Aviv-Jaffa (TLV), the economic and cultural center of Israel. Since the early 2000s, TLV has undergone a gradual policy shift influenced by local and international factors, resulting in a series of high-profile environmentally driven plans dealing with sustainability, urban nature, resilience and climate change.

We focus on three main questions in order to analyze the process of urban sustainable policy formulation: (a) What are the key drivers of the urban sustainability policy framework? Following Joss (2015), we map environmental and socio-economic pressures, economic development goals, cultural branding, and international cooperation. (b) Who are the main actors shaping the policy development? We address top-down, bottom-up and middle-out processes, looking at stakeholders and the ways in which policy ideas and implementations "flow" between them (c) Where are the main sustainability interventions planned in the city and who benefits from them most? Following approaches that highlight links between sustainability and environmental justice (e.g. Agyeman 2005), we review the way the city's sustainable policy distributes benefits and risks across geographical and social divides.

We trace the formulations of Tel Aviv's urban sustainability policy by focusing on three key domains: (a) incorporating sustainability into the city's first Strategic Plan (2005) and its comprehensive revision a decade later (2017); (b) setting up a municipal program for a local network to explore sustainability at the community level (since 2012); and (c) addressing the ecological dimensions of sustainability through the siting and planning of "urban nature" (since 2015). We use an interlinked case study approach, following the evolution of each of these plans and projects, as well as their interactions over the years. Our research is based on collection and critical analysis of policy documents and interviews with key actors and stakeholders.

Our findings highlight the prominent role of the "activist clerks", middle-out agents who translate and transmit urban sustainability ideas between policy and practice, municipality and grassroots. We also find that the scale of the neighborhood, and the interplay between social development and environmental activism becomes an important platform for policy development and interlinking different sustainable plans and agendas. Focusing on the neighborhood level also reveals implications for equity and environmental justice, since community-focused sustainability prioritizes established and resilient communities over other, sometimes more vulnerable urban areas.

Connecting the theoretical and substantive knowledge of sustainable policy formation serves to both enrich scholarly understanding of the contemporary development and implementation of urban environmental policy as well as to inspire practitioners searching for innovative tools for social and environmental change.

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Key Words: urban sustainability, strategic planning, urban nature, participation, urban governance

THE ETHICS OF TRANSFORMING INCINERATORS INTO COMMUNITY ASSETS: NEIGHBORS' PERCEPTIONS AND ACCEPTANCE IN SEOUL, SOUTH KOREA
Abstract ID: 917
Individual Paper Submission

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Incineration is a primary municipal waste disposal method in many countries including Japan, Taiwan, South Korea, Denmark and the Netherlands. Some countries incorporate community amenities to incinerator (observatory decks, recreation centers, gyms, parks) to mitigate their negative socioeconomic impacts on surrounding communities. Using the case of the Seoul Metropolitan Area of South Korea, Han, Laurian, and Go (2019) found that these amenity features significantly mitigate incinerartors' impacts on property values, compared to incinerators without similar amenities. This findings, however, leaves important social and ethical questions open: Can adding public "goods" make up for environmental "bads" and redress environmental injustices?

Studying the social and ethical implications of compensating environmental bads with public goods requires an in-depth understanding of public perceptions of the amenities provided by waste incinerators, and of the citizen oversight and compensation programs instituted to assuage public disputes. This paper presents findings from field research in South Korea, including site visits, interviews with facility managers and local public officials, and interviews and surveys with residents who live in proximity to the incinerators. The interviews and surveys answer the following questions: 1) To what extent do residents in communities hosting waste incinerators with amenity features perceive those as a community assets and/or liabilities? 2) To what extent do they find the citizen oversight and financial compensations satisfactory? 3) How do they understand and perceive incinerators' potential health impacts?, 4) Does participation in decisions related to the incinerator siting or in the citizen oversight groups that monitor incinerator operations impact perceptions and acceptance? and 5) Overall, how do residents understand, perceive, and to what extent do they accept, the tradeoffs between environmental impacts and community amenity? We examine the responses of residents who live near incinerators with and without amenities.

The implications from this research will provide theoretical and practical insights into the ethical

dilemmas involved mitigating environmental impacts (and potentially injustices) with social goods.

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Key Words: Waste Incineration, Impact mitigation, Community perceptions, Ethics, Environmental justice

USING COMMUNITY MAPPING TO CREATE OPPORTUNITIES FOR LEARNING AND CHANGE SELF-PERCEPTION OF RISKS ASSOCIATED WITH CLIMATE CHANGE
Abstract ID: 929
Individual Paper Submission

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Emerging public engagement scholarship has examined the importance of creating opportunities for social learning among participants and the ability of experimental research to generate insights on the design of public engagement activities to support learning. This paper includes the results of experimental research conducted in Springfield, MA. This research examines the potential of community mapping exercises to create opportunities for learning and enhance participants' perception of short-term and medium-term risks from climate change. Prior research on climate resiliency suggests that community members do not understand personal risks of climate change and fail to participate in long-range planning activities or change behavior because they lack information and do not perceive themselves as part of "at risk" populations (Pongiglione, 2011).

Based on prior research on public engagement, it has been suggested that interactive, small-group, collaborative activities have the potential to create opportunities for social-learning. As planners we work in small, interdisciplinary groups, to complete the tasks most commonly associated with our field: preparation of plans, community meetings, negotiation, goal formation, and review of documents (Shalinsky & Norris, 1981). We also frequently ask citizens to engage with small groups through focus groups and advisory boards. The popular and regional scale goal setting approach espoused by the Urban Land Institute, Reality Check, brings hundreds of invited stakeholders together and asks them to play a board game in small groups of 5-7 ("Reality Check - Urban Land Institute," n.d.) . In other examples, we ask citizens to develop ideas in groups, review models in groups, and develop visioning maps in groups (Desouza & Bhagwatwar, 2014; Frewer & Rowe, 2005; Kleinhans, Van Ham, & Evans-Cowley, 2015; Zellner et al., 2012).

Often an unstated, implicit goal of these activities is to create opportunities for learning. We suppose that these engaging and participatory small-group exercises can lay the groundwork for supporting social learning and promote better planning outcomes (Goodspeed, 2016). We also suppose that this type of activity might also lead to a community of active planning participants (Barchers, in preparation). Use of experimental research design in planning has emerged as one such way to test claims about the efficacy of activities within a public engagement process (Honey-Roses and Stevens, 2017). To address the extent to which small group activities can generate opportunities for social learning in public engagement

processes, and the extent to which learning can lead to enhanced perception of risk, we conducted an experimental public engagement study in Springfield, MA. This study used community-based mapping as a small group meeting activity and used pre and post surveys to test whether and to what degree participation in the activity generated social learning and greater understanding of risks from climate change. The work provides new insights on how experimental research design can increase knowledge in the planning domain and how self-perception of risk influences likelihood of continued participation in planning activities among participants. Results from this work demonstrate how specific design choices in public engagement activities can lead to enhanced long-term participation of community members and increase social learning among participants.

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Key Words: social learning, public engagement, experimental research design

URBAN FORM AND FLOOD RESILIENCE: A MICRO-SCALE STUDY IN MACAU
Abstract ID: 938
Individual Paper Submission

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The Intergovernmental Panel on Climate Change (IPCC) Fourth Report stresses the need for a fundamental transition in the structure and functioning of built environments to simultaneously adapt to the effects of climate change. Meanwhile, more frequent urban flooding events brought about by climate change has been posing great threats to urban communities in recent decades. Yet, less is known about the relationship between urban form and flood resilience in the literature. The purpose of this paper is to advance the empirical understanding of how urban form, particularly urban design features at the micro-scale, influences urban flood resilience. We use the real-time data from the 32 water level monitoring sites in Macau to model the duration of urban flooding in different urban built environments during all the urban flood events in 2018 and 2019. Using the fixed effect model, our initial results indicate that floor area ratio, vegetation intensity, and form-based urban parameters such as urban porosity and building characteristics are associated flood resilience. This paper lies at the intersection of urban form and climate change adaptation, which is one of the major thematic issues of resilience science. The results of this paper can also enable planners to think more deeply about flood resilient urban form and formulate comprehensive policies to improve urban resilience.

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Key Words: climate change adaptation, urban flooding, resilience, urban form, Macau

NETWORK ANALYSIS IN PLANNING EVALUATION (NAPE) TO EVALUATE GOVERNANCE CAPABILITIES IN THE FACE OF MULTI-JURISDICTIONAL & MULTI-DIMENSIONAL PROBLEMS: A NOVEL APPROACH WITH WATERSHED PLANNING FOR FLOODING HAZARDS IN LOUISIANA
Abstract ID: 941
Individual Paper Submission

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Regional planners frequently address issues surrounding housing markets, transportation, land use, and the environment. These issues manifest themselves cumulatively as the result of the actions of a diverse set of actors, separated by both jurisdictional boundaries and areas of expertise. The mismatch between the scale of the problems and the jurisdiction of decision-making bodies means that plans developed by individual governments often fail to address complex regional issues effectively. In the planning realm, the capacity for planners and policymakers to create and implement effective regional solutions is much studied. Many planning processes begin with a diagnosis of existing planning documents, and academically, plan evaluation literature has traditionally focused on evaluating plans or network of plans based on their discrete attributes. From within planning and within allied literature on socio-ecological networks and policy, there has been a growing attention to the problem of how to assess networks of planning governance over space and areas of expertise.

This is especially in the case of water planning and ecosystems. Here, we aim to fill the gap left by the lack of widely adopted tools and methodologies to assess how individual plans interact across jurisdictions or within diverse types of plans (e.g, comprehensive, resilience, and transportation). We address the area of flooding hazards and watershed planning, and within the watershed context, and contribute to a larger governance network. Social network analysis methodologies can help bridge this gap, by extracting regional network data from existing planning documents, but we lack standardized approaches to incorporating network analysis with planning assessment tools. Our project will create a standardized multi-jurisdictional plan evaluation tool (Network Analysis in Plan Evaluation) using reproducible network methodologies.

We will apply the methodology to watersheds in Coastal Louisiana, and demonstrate how the NAPE methodologies can help understand key actors within planning networks, identify potential sources in governance and collaboration gaps, and help develop a method to use the planning process to address problems of socio-ecological fit in regional environmental and development policy. The work will foster future research by establishing standard reproducible methodology for conducting planning governance and plan quality assessments which incorporating multi-jurisdictional network data.

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Key Words: Networks, Evaluation, Land Use, Regions, Hazards

USING GOOGLE STREET VIEW IMAGERY TO PREDICT STREET LEVEL PARTICULATE AIR POLLUTION
Abstract ID: 984
Individual Paper Submission

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Estimating spatial patterns of air pollution is necessary for human exposure and health impact assessment (Alexeeff et al., 2018). Studies show that urban air pollutant concentrations are unevenly distributed and can vary rapidly over very short distances, leading to health disparities at small spatial scales (Apte et al., 2017; Hankey et al., 2019). Understanding air pollution distribution at high spatial resolution will provide evidence for city planners to make precise policies in promoting healthier communities.

Land-use regression (LUR) is one approach which has been frequently applied to predict ambient air pollutant concentrations (Eeftens et al., 2012). However, traditional LUR uses GIS-derived variables, which are typically jurisdiction-specific (e.g., zoning ordinance) or are less precise (e.g., Census data) at large geographic scales. The traits of these data sources make it difficult to extend traditional LUR models from city to city. Google Street View (GSV) imagery provides street-level information of urban environment without the constraints of jurisdiction boundaries, which makes it a good potential data source for LUR. In this study, we investigate use of a promising new set of variables for LUR, i.e., features extracted from GSV imagery by a deep learning-based scene parsing technique (Zhao et al., 2017). The performance of GSV-only LUR is then compared to our previously developed LUR models (Hankey et al., 2019) which use traditional land use variables.

We previously collected ~120 hours of mobile monitoring data in Blacksburg, VA (Particle Number [PN] and Black Carbon [BC]) (Hankey et al., 2019). Daytime (12-h average) models were established to approximate long-term air pollutant concentrations. Traditional LUR models were developed with multiple variables, including land use, transportation and natural environment variables, all of which were collected separately. For GSV-only models developed in this study, we used GSV imagery as a single data source and collected ~14,000 GSV images within 2,000 meters of the mobile monitoring routes. Images were separated into 2 categories: (1) images within 50 meters of air pollution measurements to capture central features and (2) images aggregated within 8 buffers (250-2,000m) to capture background features. A deep learning model - PSPNet (Zhao et al., 2017) - was used to extract features from GSV images. Specifically, each pixel of an image is classified into different object classes, e.g., vegetation, buildings, cars, trucks, water, etc. The percentage of features within each image (and subsequently within each buffer) was used in stepwise linear regression models to develop GSV-only LUR models.

We found that the GSV-only models had comparable performance to LUR using traditional variables.

Adjusted R^2 (10-fold CV R^2) was 0.76 (0.65) for PN and 0.69 (0.58) for BC; the GSV-only models were 5.6% (-5.8%) higher for PN and 4.5% (3.6%) higher for BC than traditional LUR models. Furthermore, adjusted R^2 for PN (BC) models that used only GSV images within 50 meters of a monitoring route were 0.45 (0.41) suggesting that street-level images at the measurement location can describe a significant amount of variability for these pollutants. Collectively, our findings suggest that variables derived from GSV imagery is a promising data source for predicting street-level patterns of air pollution.

Our results suggest that GSV imagery may be an effective alternative to variables used in traditional LUR. GSV offers potentially two major advantages: (1) finer spatial (i.e., street-level) resolution and (2) the ability to apply consistent data collection and processing protocols across large geographies and political boundaries. This new promising approach could then be used to provide finer and more precise information for planners and policy makers.

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Key Words: air quality, empirical modelling, image processing, land use regression

INCLUSIVE RESILIENCE: EXAMINING EQUITY-CENTRED STRATEGIC PLANNING IN TORONTO, CANADA
Abstract ID: 991
Individual Paper Submission

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Existing but limited empirical research suggests that while inclusivity, equity and justice are centrally important to building resilience, City governments using a resilience framework for planning projects are not consistently prioritizing social equity in resultant city plans (Fitzgibbons & Mitchell, 2019a). Hence, more research is needed to unearth pathways toward more equitable resilience planning processes. The goal of this paper is to contribute to filling this empirical gap, asking whether and how principles of justice have been incorporated in in-situ resilience planning. We explore a case study of one equity-focused participant City participating in the "100 Resilient Cities" (100RC) program: the City of Toronto. Using key informant interviews and document analysis, this paper examines the approach taken by Toronto to weave social equity and inclusion throughout the "ResilientTO" planning process. We find that the Resilient Conversations approach, used by the City as part of the 100RC strategic planning process, supports the notion that a "negotiated resilience" approach (Harris et al., 2017) can help to

advance procedural justice in resilience planning. We argue that, with some important considerations, the Resilient Conversations process may represent a model practice for operationalizing negotiated resilience, and we hope that the findings of this research can inform more procedurally just strategic planning processes in North American cities.

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Key Words: Resilience, Equity, Justice, Toronto

LANDOWNERS' INCENTIVES TO PLACE CONSERVATION EASEMENTS IN EXURBAN AREAS
Abstract ID: 992
Individual Paper Submission

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Private land conservation in the U.S. is increasingly necessary in order to address sprawl, biome shifts, and other forms of habitat loss (both human and climate-driven). The conservation easement (CE), a negative easement in gross, is one of the most ubiquitous yet under-studied forms of private land conservation. Several scholars have been trying to isolate the landowner motivations to engage in CE placement. Ernst and Wallace (2008) showed that tax incentives, while not the primary reason for CE utilization, certainly facilitated the Larimer County, CO property owners' decision-making processes. Farmer et al. (2011) affirmed this finding with a slightly larger geographic sample of donors to land trusts in seven Midwestern states, using both a survey and interviews to show that place attachment was the primary reason for CE donation. Farmer et al. (2011) asserted that, while the lowest ranked of their motivations, "potentially one-third less land [would be] under conservation easements without financial incentives" (p. 833). Rissman et al.'s (2007) landowner survey in eight states focused on the conservation purposes within CEs held by The Nature Conservancy, assessing conservation targets and threats to biodiversity, as well as basic CE purpose, rather than donor motivation. Influenced by Kabii and Horowitz (2006)'s conceptual model for landowner motivations to conserve land, Brenner et al. (2013) used a pre- rather than post-test approach to study landowner's motivations to prospectively place a CE in central upstate New York. Their results revealed that land uses, particularly "recreation and wild food prospecting, are among the most powerful and significant predictors of landowners' willingness to consider conservation easements" (p. 30), as well as owning a large parcel of land. However, this study was extremely localized. The results of these studies, among others, suggest that owner motivations are complex and potentially conflicting, with no clear prioritization. These findings, in part, may be attributed to the limited scope of the study areas and/or the intent of the original survey, suggesting the need for a broader-based and regionally representative national survey.

In order to ascertain the motivations for CE use (especially the fiscal policy that promotes public subsidy on private land) more broadly than the Farmer et al. (2011) study, as well as the potential effect on other

landowners and on the biological value of the conserved lands held by all kinds of land trusts, we built on the work by Kabii and Horowitz (2006), Rissman et al. (2007), Ernst and Wallace (2008), Farmer et al. (2011), and Brenner et al. (2013), among others. We located the property owners in twelve counties in the eco-regionally representative and rapidly growing exurban areas of six states across the U.S. We generated a post-test survey instrument for dissemination via mail (Dillman et al., 2014) to a stratified, representative sample of the property owners with CEs placed between 1997 and 2008/2009 in each county.

The survey results allow us to evaluate the effect of federal and state tax incentives on CE placement (Farmer et al., 2011; Ernst & Wallace, 2008; Sundberg & Dye, 2006) and the potential differences in donation motivation based on income or education (Brenner et al., 2013). They also reveal the role of ideology and biological knowledge in individual decision-making regarding CE use. With results from a more expansive and geographically-representative survey, we are able to inform the planning community of the individual motivations influencing CE placement in growing exurban areas. The results will inform future policy changes at multiple governance scales (local to federal), and should give greater insight into how an individual's landholdings drive the choice and location of a CE, which can impact other land uses within the jurisdiction.

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Key Words: conservation easements, individual motivations, tax incentives

PEDESTRIAN BEHAVIOR BASED ON OUTDOOR THERMAL COMFORT AND MICRO-SCALE HEAT ISLAND, AUSTIN, TX
Abstract ID: 993
Individual Paper Submission

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Cities' built environments have changed with sprawl and development, particularly in downtown areas where changes have been rapid and remarkable. Urbanization has also resulted in a hotter thermal environment in cities. Recent changes in outdoor thermal environments are different from the past and could affect people's behavior patterns. In indoor environments, people can adjust the air temperature, although it is at the expense of increased energy consumption. However, people who must inevitably be active outdoors, such as pedestrians and construction workers, need to find places that are somewhat more thermally comfortable, or they need to change their paths. Pedestrians are easily affected by changing thermal comfort conditions based on the time of the day and zenith of the sun because the heat environment in the city changes hourly during the day. Thus, their thermal perceptions depend on where

they walk to avoid direct sunlight or strong winds, and these conditions could contribute to an uncomfortable microclimatic environment. Therefore, several factors should be considered and analyzed to understand the thermal comfort conditions on the street in the downtown area in a city. However, few studies have analyzed the relationship between the human thermal comfort index and the actual people volume on the street.

Most of the research related to urban heat island (UHI) has focused on mesoscale perspectives. However, more research is needed to address the limitations of existing UHI concepts, which are currently described by linear concepts to calculate and estimate UHI intensity. Additionally, to understand how the heat island phenomenon influences people's lives and behaviors at a more specific and detailed scale, researchers should categorize heat island characteristics considering both physical and temporal factors. Thus, a study should be conducted on how each scale of the heat island phenomenon affects people's behaviors and their living environments from a micro-scale perspective. People on the street are directly affected by micro-scale heat events rather than mesoscale conditions, so micro heat island (MHI)—heat island with micro-scale—should be considered to find countermeasures for the extreme heat event issues during the summer.

This research focuses on the relationship between MHI and people's behavior patterns on the street, such as pedestrians' decisions about their walking path and where they choose to stand or sit. The main goal of this research is to define an MHI concept and suggest a model based on the data collected from a mobile weather data collection campaign. The MHI model will be utilized to determine the factors that most influence pedestrians' flow and volume on the street and to suggest a way to determine how much of a direct relationship there is based on microclimatic weather data with pedestrians' behavior characteristics in terms of their outdoor thermal comfort level from a micro-scale.

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Key Words: urban heat island (UHI), micro heat island (MHI), urban form, pedestrians, human thermal comfort

MULTILEVEL GOVERNANCE IN AIR POLLUTION CONTROL: EXPLORING INCENTIVE MECHANISMS IN AUTHORITARIAN CHINA
Abstract ID: 995
Individual Paper Submission

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Jurisdictional pollution externality, has always been a severe challenge for effective environmental governance. In China, in the Beijing-Tianjin-Hebei and Yangtze River Delta and Pearl River Delta regions, 30% to 40% of the concentration of sulfur dioxide, 12% to 20% of the nitrogen oxides, and 16% to 26% of the inhalable particulate matter come from other cities. To reduce the problem of

environmental externalities, current scholarship has generally raised two solutions. The first thread of studies focusing on voluntary collaboration among decentralized jurisdictions, while local governments usually lack strong incentives for effective implementation. The second thread of studies seeks for the authority from the higher-level government to mitigate actions at local level. However, strong state interference might jeopardize local autonomy and impose substantial costs to local enforcement.

The Chinese case of air pollution control provides a perfect laboratory to examine these two competing theories regarding reducing environmental externalities. To solve the heavy air pollution problems, in 2012 the central government issued the "The 12th Five-Year Plan for Air Pollution Prevention and Control in Key Areas", aiming at seeking regional solution for air pollution control. This paper aims at exploring the effect of these competing types of regional environmental collaboration on environmental outcomes in authoritarian China. Specifically, I try to answer two questions: can environmental collaboration reduce air pollution spillover in China? Which types of collaboration are more effective in reducing environmental spillover?

To answer my questions, I draw air quality data from web and archiving data from annual reports of Ministry of Ecology and Environment of People's Republic of China. I compare air pollution spillover in the Yantze River Delta (more voluntary collaboration) and cities in the Beijing-Tianjin-Hebei (more higher-level intervention) using spatial-temporal regression. The baseline identification strategy is to compare air quality of monitoring stations that boarder other provinces with that of nonborder stations. To control for other confounding factors that might influence air quality such as wind direction, geology, and natural hazard, I also compare air quality of monitoring stations that on the regional boarder with those stations that located within the regions.

The results show that both collaboration mechanisms reduce air pollution in the Beijing-Tianjin-Hebei and Yantze River Delta regions. However, the spillover effects show that urban PM2.5 concentration decreases by 0.230% for the Beijing-Tianjin-Hebei region which received more higher-level intervention, while the voluntary collaboration in Yangtze River does not show any significant reduction impact on air pollution spillover. Through two contrasting case examples of regional environmental collaboration, this paper tests the effect of different regional collaborations on environmental outcomes. It enhances scholarly understanding of the power structure within different multilevel governance which heavily influence local governments' environmental decision-making.

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Key Words: Environmental Governance, Regional Collaboration, Multilevel Governance, Air Quality Control

RETREAT FROM THE URBAN WATERFRONT: A PATHWAY TO RESILIENCE & REPARATIONS - A CASE STUDY ON EDGEMERE, QUEENS
Abstract ID: 1006
Individual Paper Submission

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According to the International Panel on Climate Change's Fifth Assessment Report, in the most optimistic scenario that global temperatures are capped at 1.5°C by 2100, sea levels will still increase at an average of 10 to 30 inches. For each vertical inch of sea level-rise, the ocean will move 50 to 100 inches inland, accelerating land loss, expanding the reach of hurricanes and storms, and forcibly displacing 72 to 182 million people by century's end.

Managed retreat is a coastal adaptation pathway that most effectively eliminates this risk, as it permanently and strategically relocates vulnerable populations out of harm's way. However, it is often dismissed for being politically contentious, socially and economically disruptive, and psychologically taxing. Furthermore, recent research suggests that bureaucratic processes that facilitate retreat in the US often perpetuate existing racial and wealth disparities, as well as cycles of gentrification, disinvestment, and displacement. This study explores how managed retreat can be equitably achieved in cities; specifically how communities can leverage the strategy as a unique opportunity to not only preserve their existing social fabric, but renew and re-establish components of humanity that have been eroded by a profit-driven and carbon-intensive economy.

A literature review of the managed retreat landscape was conducted, assessing the strategy's historic implementation in the US, as well as gaps and equity issues that must be addressed in its practice. In order to support these findings, a case study was conducted in Edgemere, an urban-coastal community located on a barrier island in the South of Queens, NY. The case study consisted of 1) an existing conditions analysis that used mixed-method research to understand the natural environment & climate, urban development, and socioeconomic context of the study area 2) qualitative interviews with local actors, such as city agencies and community-based organizations and 3) a focus group discussion with public housing residents.

Experts on managed retreat have stated that the more creative and far-reaching the approach, the greater potential retreat holds to not only secure communities' safety, but to transform and uplift them. Given the legacy of inequality driving urban development and flood protection patterns in the US, as evidenced by the case study in Edgemere, the extensive analysis and community engagement undertaken led to a set of policy development recommendations which also address broader societal goals of healing, reparations, just transition and inclusion. These include:

- Healing through Participatory Planning: Centering lived experience and healing-informed approaches to planning; and supporting informed participation and continuous social dialogue so residents are not tokenized in the decision-making process.
- Reparations through Financing & Funding: Decentralizing & democratizing wealth and decision-making by redirecting public and private investments to the communities they have historically harmed or neglected.
- Just Transition through Land Use & Coastal Management: Dismantling extractive and exclusive urban development by ensuring retreated properties support ecological preservation, green enterprise and inclusive, transgenerational wealth-building that will increase residents' economic & adaptive capacity through relocation.
- Inclusion through Policy & Legislation: Addressing high-level systems that create systemic barriers to managed retreat across the US by enacting legislation on greater geographic & political scales to maximize adaptation options and social protections for all.

Existing research on managed retreat has largely focused on the social justice implications of federally-funded buyouts in the US, often lacking community-centered approaches to addressing racialized inequality inherent in existing coastal adaptation trends. This study adds to a growing body of evidence related to the process of managed retreat in coastal, resource-constrained urban communities. The information uncovered is now being incorporated into ongoing resilience planning in the community of Edgemere, and opens broader discussion around innovations in equitable coastal adaptation.

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Key Words: managed retreat, coastal adaptation, just transition, sea level rise, equity

DETANGLING COMMUNITY PRIORITIES IN STORMWATER MANAGEMENT: AN URBAN HONOLULU CASE STUDY
Abstract ID: 1028
Individual Paper Submission

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Dialogue between and within formal and relational institutions is a fundamental means of shaping desired outcomes in planning (Healey 1997). Coming to a common or acceptable understanding of "desired outcomes" can be challenging in stormwater management and planning because it is governed by a complex network of institutions, particularly when management entities are often silo-ed and top-down. For this study, I focus on stormwater management in the Ala Wai watershed in Honolulu, Hawaiʻi, where resistance to a U.S. Army Corps of Engineers Flood Risk Management Plan galvanized the community to seek alternative solutions to stormwater management. Specifically, the question motivating this research is: Where do stormwater management priorities for the Ala Wai watershed converge or diverge, as expressed by community members and water managers?

This study uses Q-methodology to elucidate specific social narratives within the broader discourse and the respective stormwater management priorities of each. Q-methodology is a means to bring objectivity to the study of subjectivity (Watts and Stenner 2013) and is applied within this community-based planning case study to understand individual priorities absent of a contentious atmosphere. The final outcome of the Q-method is to interpret the social narratives with the aid of a factor analysis of the sorted statement sets collected during individual interviews. The set of statements reflects an array of opinions expressed through various media outlets, websites and organizational material, interviews or community meetings, and other published literature that are not readily testable.

To disaggregate various aspects of desired outcomes for stormwater planning, this research uses a framework that combines the concepts of "soft path solutions" for 21st century water management from Gleick (2003) and the 2016 U.S. Environmental Protection Agency (EPA) "Guidelines for Voluntary Long-term Stormwater Planning." Within this framework, there are 14 objectives for stormwater planning, including improving water productivity and involving the community in decision-making from the "soft path solutions," and improving resilience, water quality, and decreasing runoff from the EPA guidelines, among other objectives. Opinion statements were collected through a comprehensive search of material related to stormwater management in Honolulu, then categorized using the 14 objectives in the framework. A total of 125 unique opinion statements were collected from 42 different sources. These statements were then refined and decontextualized into a final set of 36 statements that cover the range of stormwater planning objectives. In total, 20-30 interviews will be conducted with community leaders and

planners or professionals who have a working knowledge of stormwater and the various issues surrounding the Ala Wai watershed. During the interview, individuals are asked to sort the 36 statements according to the degree to which they agree with the statements relative to one another. The expected result of this research is to identify 3 to 6 social narratives to compare where ideas coalesce around stormwater priorities and where they diverge. Preliminary testing shows that stated ideological alignments (e.g., environmental planner, community activist) do not necessarily prescribe the priorities chosen by the individual, and thus understanding the underlying priority objectives is useful to community-driven planning efforts.

The uprising of the community in response to the Army Corps project is indicative of a flawed, top-down process that tends to cultivate distrust (Forester 1989). Understanding the points of agreement and disagreement can help initiate an authentic dialogue that builds on diversity and the interdependence of agents involved in the process (Innes and Booher 2010). Although this case focuses on Honolulu, complex stormwater management issues—which are becoming increasingly uncertain with climate change and sea-level rise—are not unique to Hawai'i and the priorities identified within the social narratives are broadly applicable.

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Key Words: Q-methodology, Stormwater Management, Collaborative Planning, governance

EMPOWERING LOCAL CLIMATE ADAPTATION AND HAZARD MITIGATION OF COASTAL JURISDICTIONS THROUGH STATE COASTAL ZONE MANAGEMENT FEDERAL CONSISTENCY REVIEWS
Abstract ID: 1035
Individual Paper Submission

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The planning literature suggests that local land use policies can be effective tools for reducing hazard risks, implementing climate adaptation and enhancing resilience (Burby and May, 1997; Burby, 1998; Burby, Deyle, Godshalk and Olshansky 2000; Daniels, 2014; Grover, 2019; Peacock et al. 2019, Woodruff, 2016; Buckner, 2016; BenDor, T. K., Spurlock, D., Woodruff, S. C., & Olander, L, 2017; Woodruff, S. C., & BenDor, T. K, 2016; Beatley, T., 2009; Stults, M., & Woodruff, S. C., 2017; Betsill, M. M., & Rabe, B. G., 2009). State and federal policies can promote, enhance, as well as constrain the abilities of local jurisdictions to address these issues (Berke, Crawford, Dixon, and Ericksen, 1999; Berke, Lyles & Smith, 2014; Brody & Highfield, 2005; Bunnell & Jepson 2011; Dyckman, St. John, & London, 2014). The Coastal Zone Management Act of 1972 (CZMA) provides states an opportunity to manage their coastal zone through funding coastal projects and conducting federal consistency reviews with respect to implementing enforceable policies (NOAA, 2016). Federal consistency is one of the carrots that states receive for participating in the CZMA, allowing states to review federal permits, licenses, and activities proposed within the coastal zone to ensure compliance with the state's coastal management program and its enforceable policies (NOAA, 2007). However, states have significant leeway in addressing federal consistency reviews in terms of 1) what federal activities, permits, licenses, and

applications are reviewed, 2) to what extent local land use policies and planning elements are included as enforceable policies and finally, 3) how local is defined in terms of scale and jurisdiction. For example, preliminary research findings show that Section 404 permits issued by the United States Army Corps of Engineers is the most common federal permit reviewed by state coastal management programs for consistency with the enforceable policies of the program. Further, some states default to state-level regulations as enforceable policies. Hence, consistency reviews are based exclusively on general state level regulations and policies. Other states, however, include local land use plans, policies, and regulations as enforceable policies within their coastal management plan (CMP). This paper describes and assesses the current federal consistency framework and addresses each of these dimensions with respect to state variability in application. It also offers a set of critical research questions and hypotheses that might fruitfully be explored by the planning research literature to assess the potential effectiveness of federal consistency for addressing hazard risk reduction, climate adaptation, and disaster resiliency among coastal jurisdictions.

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Key Words: coastal management, hazard mitigation, climate adaptation, policy, land use

TRAINING 'COASTAL NAVIGATORS' TO PROMOTE BETTER COASTAL SHORELAND MANAGEMENT
Abstract ID: 1036
Individual Paper Submission

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Coastlines along the oceans and the Laurentian Great Lakes move landward over time naturally because of erosion. Climate change is accelerating that process along ocean coasts given sea level rise (SLR) and increased storminess (Siders 2019). Similarly, while the Great Lakes are not rising like the oceans, they do continually erode, and climate change is accelerating erosional processes along Great Lake shores because of increased storminess (Norton et al. 2018).

Accelerating erosion and SLR are prompting more calls for engineering solutions like the construction of seawalls and other hard shoreline 'armoring.' But there is no engineered solution yet devised that can stop erosion permanently without the need for regular repair, often at great public expense, and hardened structures eventually degrade—if not destroying altogether—the natural beach. Rather than paying repeatedly for the repair and restoration of structures, especially at the expense of the natural beach, academics and practitioners have long called for adopting a policy of 'managed retreat'—moving structures away from the shore as the shoreline moves (Siders 2019).

Managed retreat makes sense in theory, but the real challenge comes with implementing it in practice. There are at least two hurdles that proponents confront. First, many coastal localities are small and have limited planning and regulatory capacity, making it difficult for them to conduct the kinds of analyses required to justify managed retreat policies, or to garner the political commitment to implement such policies (Norton et al. 2018). Second, to the extent that erosional processes are highly uncertain, and especially because they are driven by climate change, the challenges of communicating risks to coastal communities and shoreland property owners are that much more complicated and contentious (Moser 2014; Vanderlinden et al. 2017). Beyond those well-known challenges, an additional complication is that managing coastal shorelands implicates complicated state legal doctrines speaking both to state and local authorities to regulate land use and to private versus public rights to shoreland properties (Norton & Welsh 2019).

This paper presents selected findings from an ongoing research program being conducted in Michigan on the management of its Great Lakes coasts. Drawing from prior research and surveys characterizing attitudes and understandings regarding shoreline dynamics and needs, part of that program has involved creating special training designed for 'coastal navigators'—local public officials, residents, and especially planning consultants. The state's goal is to promote better shoreland management by training knowledgeable and effective proponents at the local level—coastal navigators—who are positioned to promote in turn more effective shoreland management; i.e., policies that better balance private property rights and the conservation of natural beaches. That training incorporates tailored information on climate science, shoreline dynamics, and the legal implications of shoreland management in Michigan.

For training programs within the past year, we have conducted before-and-after surveys to gauge participants' understanding of the issues and potential changes in perspectives. We have found statistically significant evidence that the training provided shifts participants' attitudes, on average, more toward policies that would protect the natural beach, even at the expense of protecting beach houses, and more toward a stronger local role in adopting and implementing those policies. We conclude the paper by discussing its applicability to other settings, along with its limitations, and by identifying questions for further study.

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Key Words: coastal management, climate change adaptation, risk communication, coastal law

RESILIENCE THRESHOLDS OF CLIMATE-INDUCED MIGRATION
Abstract ID: 1054
Individual Paper Submission

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Theories about the resilience thresholds of climate-induced migration are still in the early stages of development, with just a small number of papers addressing this topic. This study, based on decision theory, addressed it through the use of an agent-based model (ABM) that simulated the behavior of populations under climate change stressors, identifying the resilience thresholds beyond which individuals migrate. The components of this model came from empirical research of a case study and a logistic regression analysis in El Salvador to find the probabilistic functions that set the decision rule of the agents. This simulation proved to be a useful aid in gaining a greater understanding of the highly complex relationship between resilience thresholds and climate-induced migration, as well as the factors that influence the decision-making process to relocate.

The results articulated the complexity of assessing property and use rights (understood here as land tenure) and values (understood as social capital), both of which are considered as "slow-changing components of resilience in a social-ecological system" (Resilience Alliance, 2010, p. 6). By modeling a simplified representation of agents, I ran experiments to ascertain a clearer understanding of the participation of the intrinsic characteristics of agents in the decision-making process to migrate by defining the social capital networks - bonding and linking - of stakeholders who possessed different property rights and land tenure situations, i.e., owner, renter, free-user, and "colono" (caretaker). The key factors modeled a population of 100 agents in a time equivalent to 2000 ticks, and ran sensitivity analysis to calibrate the results.

The primary hypothesis for this model was that different agents respond to a trigger associated with droughts according to their resilient capacity. I hypothesized that different resilience thresholds would result from the interaction of heterogeneous agents with their environment and therefore influence their decision to migrate. The findings were in concordance with varied empirical research that has demonstrated that there is an association between migration and environmental factors and has highlighted the importance of "contextual factors on individual stress thresholds" (Hunter et al., 2003, p. 276). Along those lines, this simulation reproduced observed patterns that addressed agents' relationship to social capital - bonding and linking -, whether as an owner, renter, free-user, or caretakers, and their corresponding resilience thresholds to the occurrence of droughts.

While considering "micro-level studies of specific migratory experiences," (Castles, 2012, p. 8) to inform the model, this ABM provided an in-depth understanding of the "macro-level structural factors that shape human mobility" (Castles, 2012, p. 8) in the context of the relationship between resilience and climate-induced migration. Viewing the study from the macro-level, it is clear that social structures and land-tenure positionality affect resilience levels, which determine climate change migration patterns. It is also apparent that climate change migration patterns, in turn, affect social structures and land-tenure change. This information is pertinent to the field of planning because it offers essential information about all units of analysis of micro/individuals, households, and aggregates as they relate to resettlement plans.

The emergence of the decisions concerning migration depends on the resilience threshold of the individual members of the community, and that resilience is directly connected to the land tenure structure of that community. Overall, it was the owners who were more willing to relocate after a continuing slow-onset disaster such as drought, changing when the social capital plays a significant role. Knowing the behavior of owners is useful to consider when promoting managed retreat alternatives as a climate change adaptation. Therefore, planners need to be aware that these behavioral changes in places where the land tenure structure is varied.

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Key Words: Resilience thresholds, Climate-induced Migration, Agent-Based Model, Complexity

COMMUNITY BASED GOVERNANCE MECHANISMS: COMMODIFICATION OF WATER OR CHANGE AGENTS FOR THE URBAN POOR
Abstract ID: 1063
Individual Paper Submission

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Entitlements are generally defined as the commodities/resources (material and non-material), through which one can establish ownership or command access to resources. Applying this analytic to a case study of water access in two sized cities one in Ghana, and Bangladesh I evaluate community water governance mechanisms in two low-income communities with different locational and socio-cultural characteristics. I also evaluate how different ways to provide entitlements affect access to formal piped water supply. The study uses a mixed methods approach including a 200 household survey, focus groups with community members, and semi-structured interviews with local opinion leaders. My results indicate that in my study communities, the community based approach provides a significantly richer portrait of water access beyond availability of piped water infrastructure. Among other factors that are important to everyday negotiations and entitlements related to water access, it is important to consider history and spatial structure of the settlement, familial and kin networks, the distance and waiting time to fetch water, and local leaders' perceptions of water issues, particularly how these compare with broader citizen understandings. In this way, an entitlements approach broadens the perspective beyond infrastructural endowments (e.g. piped water), to include a range of other socioeconomic, socio-cultural and local institutional characteristics. Drawing on the empirical examples, as well as related conceptual debates, the study questions how water access is defined, and how water governance processes might benefit from a broader understanding of access as well as links to differentiated vulnerabilities, notably in times of water-related stress or scarcity.
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Key Words: water supply, community governance, infrastructure, equity

CITIZEN PARTICIPATION AND MUNICIPAL SUSTAINABILITY POLICY: CHARACTERISTICS INDICATING GREATER SCOPE AND INTENSITY OF PARTICIPATORY EFFORTS
Abstract ID: 1065
Individual Paper Submission

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Citizen participation is an integral part of public administration and urban planning practices. While its importance has been documented through qualitative studies on a case-by-case basis, research delving into public participation in a more generalizable way has been rarer. Specifically, little is known about the factors influencing the scope of public participation and its intensity. We statistically model data from a national survey of municipalities (n=1,303) and their sustainability policies to answer the following research question. What are the community characteristics predicting: (1) the number of opportunities residents have had to participate in planning strategies for sustainability and(2) the degree to which residents have had a meaningful impact on these efforts? Results suggest local governments with greater internal capacity and those with more participatory organizational cultures offer more forms of citizen participation and these public engagement opportunities are more meaningful. In addition, there is a positive correlation between both our dependent variables and the extent to which a community is committed to redistribution. Finally, in contrast to some past research, we find communities with more income diversity provide more meaningful ways for citizens to get involved and experiment with more kinds of participation. Taken as a whole, our results offer important insights into the type of communities that do a better job engaging citizens.

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Key Words: public participation, sustainability, local government

VARIATIONS IN GREENHOUSE GAS EMISSIONS ACROSS NEIGHBORHOODS IN EDMONTON
Abstract ID: 1067
Individual Paper Submission

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A greater proportion (~80 %) of the global energy-use related greenhouse gas (GHG) emissions originate from cities where nearly half of the world population resides (IEA, 2008). In Canada, much of the GHG emissions are from burning natural gas to heat residential and commercial buildings, burning gasoline and diesel fuel from cars and trucks, and consumption of electricity that generates from fossil fuels such as coal or natural gas power plants (Clark and Gagnon, 2008).

Across Canadian cities, Edmonton has shown the highest energy related GHG emissions (~19 metric tonnes of carbon dioxide equivalent) due to cold weather and coal-based electricity supply (Fercovic and Gulati, 2016). Thus GHG emission reduction is becoming an increasing concern at the municipal level to mitigate the impacts of climate change (City of Edmonton, 2020). However, the energy use and GHG emissions are not uniform across the city as spatial parameters such as area, arrangements, land use, population density, and road network are varied within the city at neighborhood scale. We explored whether the neighborhood and its elements such as building typology, land use, location and travel behavior have any impact on GHG emissions in order to create a configuration of neighborhood that

emits the least amount of GHG emissions. We have selected twelve neighborhoods in the city of Edmonton based on the maturity level (core, mature, established and developing), population density, and distance to the downtown to determine the variations in energy and greenhouse gas emission nexus across neighborhoods. The bottom-up modelling approach was used to calculate energy consumption and GHG emissions from each neighborhood considering major GHG emission sources which are: residential and commercial energy consumption, energy use in transportation, street lighting and, waste generation. Also net GHG emission in each neighborhood has estimated considering potential carbon sinks that are trees and green landscapes within each neighborhood.

Our preliminary results have shown that there are variations in GHG emissions per capita from different neighborhoods according to their age, public transit availability, and building typology. The highest impact of building typology and transportation on GHG emissions were shown in developing vs. older neighborhoods. The results indicated the importance of quantifying GHG emissions and identifying the main sectors that contribute to GHG emissions at the neighborhood level.

Our results could eventually help municipal officials to identify and implement GHG emission reduction strategies across neighborhoods that emit larger amount of GHG. The results are also useful for planners to intentionally consider neighborhood configuration, location and other parameters in developments in order to decrease the GHG emissions.

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Key Words: Greenhouse Gas Emissions, Energy, Neighborhoods, Buildings, Transportation

INLAND FROM THE COAST: FOSTERING RESILIENCE TO CLIMATE CHANGE
Abstract ID: 1071
Individual Paper Submission

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After the 2005 hurricanes devastated coastal Louisiana, federal funds helped many residents relocate to inland communities in the Baton Rouge capital region to decrease exposure to future flooding. In August 2016 over the course of two days, a low-pressure system dropped over 30 inches of rain across the Baton Rouge metropolitan area. Resultant flooding took thirteen lives and damaged more than 156,000 structures. Touted as a "one-in-1,000-year flood" this was the third such event to hit the southeastern US in 2016, and one of ten since 2010. Climate predictions indicate similar severe precipitation events are likely to increase in frequency and intensity in the future (Prein et al., 2016). The increasing convergence of inland and coastal communities through coastal erosion, sea level rise, rural to urban migration, and other factors is a phenomenon Louisiana is experiencing on an unparalleled scale; however, the issue is not unique to the state. Following recent storms and aided by federal disaster funds, residents across the nation are moving away from the coast to reduce their risk—only to be flooded repeatedly from rain events over inland watersheds.

In the face of increasing climate risk, improving community resilience requires reducing risk and encouraging processes that enhance the ability of households and communities to cope and adapt to environmental challenges. Building adaptive capacity necessitates allowing communities to define "better" according to their socio-cultural values and principles of sustainability (Freitag et al., 2014).

Emerging literature across disciplines suggests that engaging those most affected by policy decisions or climate change uncertainties is critical in galvanizing support for adaptation strategies (Campos et al., 2016). While many governments are actively engaging in measures to reduce climate risk, there is a tendency to concentrate on factors where government has a mandate (e.g. infrastructure modification). Often areas outside structural infrastructure, such as building social capital or bolstering mental health, are neglected. Effective climate adaptation has to go far beyond technical dimensions and engage those affected through science, planning, and design innovation (2016).

While regional recovery is underway, the 2016 floods exposed significant vulnerabilities that this and other inland-coastal regions increasingly face due to climate change. Top-down policy solutions that disregard local context often exacerbate social and economic vulnerabilities (Gotham, 2015). Strengthening community resilience requires policy-makers to incorporate strategies that emerge from local communities into decisions made at the federal and state levels (Birch & Carney, 2019). This study seeks to understand the multi-scalar connection between federal and state policies and local adaptation practices by asking: 1) How do federal and state government policies influence local development practices and community resilience in southeast Louisiana? 2) How can a greater understanding of environmental risk and wellbeing increase adaptive capacity in coupled inland-coastal regions? 3) How can wellbeing and adaptation scholarship be better incorporated into development decision-making at all levels to bolster community resilience?

To answer these questions, the qualitative study uses policy and document analysis, focus groups, and in-depth, semi-structured interviews with residents, elected officials, and design professionals in the Baton Rouge metropolitan region. The project also tests a community-based planning and design framework that allows residents to prioritize elements necessary for community wellbeing and resilience in an era of ever-increasing environmental risk. Initial findings show local stakeholders view federal flood insurance policies as increasing future flood risk for inland communities by incentivizing development practices detrimental to pre-existing neighborhoods. Findings suggest government policies should incentivize practices that bolster long-term resilience in floodplains. The study draws from research funded by the Gulf Research Program of the National Academies of Sciences, Engineering, and Medicine and the Robert Wood Johnson Foundation under award number 2000008299.

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Key Words: climate change, resilience, participatory planning, policy, local development

COMMUNITY DESIGN IN AN ERA OF CLIMATE CHANGE AND FIRE VULNERABILITY
Abstract ID: 1077
Individual Paper Submission

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More than 50 people lost their lives in California wildfires this season. The "Camp Fire," "Woolsey Fire" and "Hill Fire" were just three of many wildfires in 2018 that burned more than 230,000 acres and destroyed 7,000 homes. As climate change intensifies, forecasters expect the frequency and severity of wildfires will continue. A recent insurance-industry study estimates there are 4.5-million homes worth more than at high or extreme risk of wildfire (Arindam, 2017). California, Arizona, Utah, Colorado, Washington, Oregon, and Idaho due to population growth in the wildland urban interface (WUI) and also the climate change phenomenon. We argue that planners have an important but presently overlooked role to play in developing the emerging paradigm of "fire resilient communities" and "fire resistant communities."

We coin the term "fire prevention through environmental design" (FPTED) – an analogue to the long-established idea of crime prevention through environmental design (CPTED) – to describe the approach planners can take when building fire resilience (Schwab, 2005; Ewing, 2016). Fire occurs when there is the right fuel, right weather and a source of ignition for it. Weather and ignition may be beyond the control of planners, but designing communities so there is less fuel at the WUI is something we can affect. The literature from other fields typically focuses on increasing fire resilience at the extremes of spatial scale – either macro-scale improvements to forest management or micro-scale changes to individual properties. But FPTED focuses on the missing middle of the community scale. We have already found two pioneering articles on the subject (Smith et al., 2016; Smith et al., 2018).

Smart growth can be considered a climate adaptation measure. Sprawl increases the wildland-urban interface as compared to compact development. In this study, we will use the Ewing-Hamidi metropolitan and county sprawl indices and satellite imagery to estimate just how much the interface increases in fire-prone states as development transitions from compact to sprawling areas.

Smart growth can also be considered a climate mitigation measure. As California's Sustainable Communities and Climate Protection Act (SB 375) emphasizes, even weather is affected in the long-run by urban development patterns.

At the meso and micro scales, smart growth also reduces fire risks. Actions that planners have been advocating for decades to make communities more livable will also make communities more fire resilient. Here two examples from APA's Best Development Practices:

Land Use Practice-4: Develop in clusters and keep the clusters small. Cluster developments are built at gross densities comparable to conventional developments, but leave more open space by reducing lot sizes; by leaving open spaces around housing, clusters will tend to protect them from the fire as a defensible fuel break.

Transportation Practice-1: Design the street network with multiple connections and relatively direct routes. More connected streets mean more escape routes from fires for residents and more access routes to individual properties for firefighters.

For this portion of the study, we will look for each best practice in the built-up areas that have been subject to wildfire devastation in the last season of wildfires.

Other prescriptions for fire resilience include to create defensible space around communities, avoid steep slopes, and use ignition-resistant building materials such as metal roofing and cement walls. The first two reminds us of planning principles. The term "defensible space" is being borrowed from Newman's book by that name in the literature on crime prevention through environmental design.

We believe the growing importance of addressing drought and other impacts of global warming will make FPTED an important new subfield that has heretofore been unrecognized by planners but is highly relevant to planning scholarship, practice, and education.

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Key Words: Wildfire, fire resilience, environmental design, community design, fire-adapted communities, fire resilience, environmental design, community design, fire-adapted communities

TRADEOFFS BETWEEN TREE SHADE AND SOLAR ACCESS: A 3D CITY MODEL AND SIMULATION APPROACH TO COMMUNITY DECARBONIZING
Abstract ID: 1091
Individual Paper Submission

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Urban energy consumption by buildings is one of the leading causes of greenhouse gas emissions. With expected increases in temperatures around the globe, energy demand for cooling buildings will continually grow, raising sustainability and affordability concerns (Pandit and Laband, 2010). Satisfying residential energy demand with renewable sources, therefore, is an important strategic planning issue.

Solar photovoltaic (PV) panels provide a sustainable alternative to generating residential electricity, and their efficiency rises with longer exposures to solar radiation. Many U.S. state and city governments have enacted solar rights laws and regulations in support of residential solar systems (Dillemuth and White, 2013). San Francisco was the first city to require installation of solar PV panels on all new buildings up to 10 stories in 2017. Solar energy planning (SEP) has the potential to satisfy a large fraction of residential cooling energy loads during warmer months.

Urban and landscape design also retains significant opportunities for reducing fossil energy use. Thermal environment planning (TEP) may regulate local temperatures and microclimatic conditions to relieve heat and energy stress. TEP is based on modifying land use and landscape by using green spaces and tree canopies. Urban trees can lower surface and air temperatures (SAT) by evapotranspiration and shading. Tree canopies shadowing the exterior of houses and other built-up structures reduce inside temperatures, thus lowering demand for cooling energy.

Both SEP and TEP focus on renewable and natural sources to reduce the energy burden. However, there is a fundamental conflict in SEP and TEP operations. Trees can reduce local SATs by casting shadows on building facades and rooftops but may simultaneously overshadow PV panels mounted on building surfaces, therefore inhibiting PV efficiency (Tooke et al., 2011). With more tree canopies and buildings under shade, the reductions in SAT become larger, but the access to solar radiation decreases.

This study develops and demonstrates a methodology to evaluate the tradeoffs between shade and solar benefits, using 3D urban simulation. This is the first attempt to link SEP and TEP to produce experimental evidence on the size and variation of tradeoffs between tree shade cooling and solar PV deployment. The four components of this research are: (a) developing a complete 3D city model incorporating realistic buildings, trees, and land covers; (b) carrying out diurnal hourly shadow simulation in summer months based on the 3D model and GIS functionalities, and creating a shadow profile over the urban surface while discriminating building versus tree shade; (c) estimating rooftop solar PV potential (KWh) in terms of maximum (without trees) and lesser levels of electricity generation, accounting for

insolation loss due to varying tree deployment; and (d) cost-benefit analysis of various scenarios of tree planting/growth in terms of temperature reductions and solar PV electricity production. Parameters required to assess the temperature reduction induced by different tree configurations are obtained from spatial regression modeling (Park & Guldmann, 2020), and energy gains from rooftop PV systems are estimated depending on spatial placement, system size, and hourly irradiation (Buffat et al., 2018). Urban thermal conditions are represented by land surface temperatures derived from Landsat 8 data at 30m resolution. Columbus, Ohio, is the study area, covering both urban and suburban areas.

The quantitative modeling of the tradeoffs between energy savings from tree shade and solar power is critical for judicious land-use and zoning decisions. Local solar energy conversion and tree planting programs need to clearly communicate the benefits and caveats of the shade and solar access to the public in the policy-making process. The research outcomes could be used to formulate a detailed framework that evaluates the outputs of community solar power planning and tree planting efforts.

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Key Words: Solar Energy Planning, Thermal Environment, Tree Shade, Community Greening, 3D City Model

PLANNERS' KNOWLEDGE, KNOW-HOW AND EXPERIENCE IN ECOLOGY AND ENVIRONMENTAL PLANNING
Abstract ID: 1126
Individual Paper Submission

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Since Beatley's 1995 proposal that sustainability provides the components of a new and improved planning model, sustainability has indeed become an established paradigm for planning in many U.S. communities. The need to prepare and adapt communities for climate change impacts only exacerbates the importance of adopting environmentally sound practices. Planners drive the design and implementation of local and regional sustainability efforts (e.g., Murtagh et al. 2019). A growing body of research shows that the adoption and implementation of sustainability programs is impacted by local planning capacity and by institutional structures and supports (Laurian and Crawford 2016; Göçmen and LaGro 2016; Lyles et al 2016).

While most studies focus on local government capacity and structures, the role of planners' training, knowledge base and experience in ecological and environmental planning has not been comprehensively investigated. Yet, the background and training of planners are constantly evolving as new cohorts of young planners enter the profession with training that may be different from that of their senior peers.

In this paper, we assess whether practicing planners are well-equipped with the knowledge and know-how needed to implement best practices in the areas of environmental planning. We also examine (1) the

relative contributions of formal and continuing education on planners' knowledge, (2) the extent to which personal, institutional, and community-based factors contribute to planners' knowledge, and (3) the extent to which planner's knowledge and experience impact the adoption of sustainability plans (broadly defined to include climate plans, hazard mitigation plans, green infrastructure, renewable energy plans, and habitat conservation plans).

We present the results of a web-based survey of 253 municipal planners working in 112 communities across the U.S. (drawn from a random sample of 219 municipalities stratified by region and city size). The survey was conducted in the Fall of 2019. Survey questions covered factual and procedural knowledge in several areas including alternative building and neighborhood design strategies; stormwater management; soil, water and air quality; climate change; vegetation; and wildlife. It also emphasized planners' source of knowledge, including educational background and continuing education credentials.

Our preliminary findings show that for the most part, planners are knowledgeable about ecology but they may lack knowledge on urbanization-induced impacts on natural resources. In addition, their procedural knowledge on best environmental planning practices vary. Overall, planners stated greater experience and knowledge related to vegetation-related practices (e.g., identifying trees at risk of infestation or native plants that support pollinators) than environmental practices in most other areas. Energy and resource-efficient building and neighborhood design strategies, and solid waste disposal requirements were among the areas planners stated least experience and knowledge in.

Our preliminary findings point to the need for communities, the American Planning Association, and planning programs in higher education institutions to provide and advocate training on the environmental impacts of urbanization, and environmental planning and management practices in order to promote environmental sustainability.

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Key Words: Planners, Knowledge, Environment, Implementation, Sustainability

WHAT DETERMINES GREEN CONSUMERISM? A CASE STUDY OF KATHMANDU MUNICIPALITY, NEPAL
Abstract ID: 1140
Individual Paper Submission

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Consumption habits are vital determinants of sustainability. Cities are often being criticized for wasteful consumption and unsustainable practices. They are also the pioneer of innovations to promote sustainable

behaviors. One such habit is the green consumerism. It is the behavior of considering the environment while making purchasing and non-purchasing decisions (Sharma & Joshi, 2017). Previous scholarship has used social, environmental, demographic, and economic factors as the determinants of green consumerism. Research also identified green consumerism as a process that includes the values, norms, and habits of the consumers (Peattie, 2010). Some studies have noticed a significant role of education and gender in green consumerism (Chekima, Syed Khalid Wafa, Igau, Chekima, & Sondoh, 2016). But there lies a research gap on how the historical background of individuals and the availability of goods and services influence the practices of green consumerism. Specifically, there is no research on how the migration, access to products and services, and social stratification can change sustainable consumption behaviors. Using the case study of Kathmandu Metropolitan City in Nepal, this research strives to explore the role of migration patterns, socioeconomic characteristics, and market access in determining the behavior of green consumerism.

Using stratified simple random sampling, a survey among ten wards of the Kathmandu Metropolitan City was administered. A total of 300 questionnaires were carried out at 20 shopping malls in those Wards. Survey questions focused on the understanding of green consumerism, individual purchasing behaviors, household consumption practices, availability of goods and services, socioeconomic characteristics, and the migration pattern of the individuals. The data was organized and analyzed using statistical analysis software (SPSS 14.0). Besides inferential statistics, multiple regression models were built to identify the relationship between the habits of green consumerism and migration history, access to goods and services, household consumption habits, and socioeconomic variables. Based on the results, it was found that there is a significant relationship between the practices of green consumerism and education, income, migration history, and access to goods and services. Social status and gender do not have a significant role in the behavior of green consumerism. The contributions of this research are: 1) urban residents who have some migration history tend to practice sustainable consumption behaviors, and 2) The fear of scarcity of goods and services hinders the practices of green consumerism. In the case of Kathmandu, the uncertainty of the availability of certain household goods negatively influenced the practices of green consumerism.

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Key Words: Sustainability, Green consumerism, Environmental protection, Nepal

DECISION SUPPORT FOR LAKE CONSERVATION AND RESTORATION: ASSESSING THE SOCIAL AND ECOLOGICAL CONTEXT OF WISCONSIN LAKES AND LAKESHORE PROPERTIES
Abstract ID: 1145
Individual Paper Submission

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The landscape of central and northern Wisconsin is a complex matrix of different land cover types, land uses, and land owners. In this amenity-rich environment, lakes, and their adjacent shoreline properties, play a uniquely important social, ecological, and economic role. For example, the state's fishing industry is valued at over $2 billion annually (Williams, 2019), while the real estate market for lakeshore homes is valued at nearly $1 billion (WDNR, 2016). At the same time, Wisconsin's surface and groundwater resources face increasing environmental strains. In 2018, approximately 20% of the

state's surface water bodies were listed as impaired, with over 60% of cases driven by land use practices: sediment loading and suspended solids (from construction, development, etc.), and especially phosphorous loading (from wastewater facilities and agricultural runoff) (WDNR, 2018).

This context poses both pressing challenges and exciting opportunities for planners and natural resource managers: the majority of Wisconsin lakes are clean, high value amenities, but a large and growing proportion are polluted and otherwise degraded. In such circumstances, as Radomski and Carlson observe, "it is becoming increasingly important to prioritize where limited conservation funds could best be directed," and as such, difficult questions must be posed: "on which lakes should the state invest… (and) how much funding should go to implement lake protection efforts on unimpaired waters versus restoration efforts on impaired waters?" (2018, p. 401).

While Radomski and Carlson have focused on Minnesota, their work is now being extended to Wisconsin by a team of university faculty, graduate students, extension specialists, Department of Natural Resources staff, and others. The overarching applied research question driving our project is: how should Wisconsin prioritize lake conservation and restoration efforts and associated funding allocations? Methods employed to address this question include geospatial analysis, landowner surveys, and quantitative models (both biophysical and hedonic/economic), culminating in a suite of decision support tools for use in developing, prioritizing, and funding specific conservation and restoration projects.

Building towards these sophisticated tools, the first phase of our work addresses an essential preliminary question: what characterizes the social and ecological context of Wisconsin lakes and lakeshore properties? At ACSP 2020, I will present the results of rigorous scoping research, including geospatial analysis of Wisconsin's ~2,500 lakes and ~200,000 lakeshore parcels, as well as an attitudinal and behavioral survey of more than 1,000 shoreline property owners. This research reveals key temporal and spatial trends that either have not previously been explored or have not been connected in a larger social-ecological context, including lake water quality, property ownership and valuation, development and construction activity, conservation and restoration activity, etc. The implications are profound in advancing both the theory and practice of planning and resource management for lake-rich regions. As just one example, there is evidence that planners tend to over-value restoration of degraded features (e.g. phosphorous polluted lakes) and to under-value conservation of existing, high quality features (e.g. clean, clear lakes). These and other findings will offer insights for both scholars and practitioners in land use planning, environmental planning, watershed planning, water quality management, and a range of other related fields.

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Key Words: environmental planning, water resource planning, lake management, watershed management, decision support

PLANNING FOR WASTE DIVERSION IN HIGH-RISE RESIDENTIAL BUILDINGS
Abstract ID: 1152

Individual Paper Submission

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A fundamental principle of current waste management practice is the waste management hierarchy, which attests that it is better from an environmental perspective to reduce, reuse and recycle waste than send it to landfill. The implication is that waste diversion from landfill should be a priority in waste management planning. The challenge for residential waste management planners is that even though recycling, and to a much lesser extent, reuse and reduction, has been widely adopted by householders, its uptake is uneven in one particular segment of the population, namely those who live in high-rise buildings. High-rise buildings consistently under-perform single-family homes in terms of waste diversion (Lakhan 2016). In the City of the Toronto, for example, residents of single-family homes divert about 70% of their waste from landfill by means of recycling and organics waste diversion, while residents of multi-residential buildings divert less than 30%. The objective of this study was to assess the effectiveness of a novel approach developed by the Toronto Environmental Alliance (TEA) for increasing diversion in high-rises, namely the creation of building waste management teams tasked with creating a building Waste Diversion Action Plan (WDAP) and implementing that plan. The teams consisted of property management, building staff and resident leaders. TEA facilitated initiation of the plan and provided the teams with occasional coaching during the 12-month duration of the study.

Research on multi-residential waste diversion to date has focused almost entirely on factors that influence resident diversion behaviour, and to a lesser extent, that of building management/staff (Fallde 2015). Our research considered the attitudes and practices of both groups. Similarly, while research to date has focused on the effectiveness of single interventions, such as improving communications around sorting or improving convenience (e.g. DiGiacomo et al 2017), Lakhan (2016) found that certain interventions, such as increased convenience, are only effective in the presence of other interventions such as information provision. Hence understanding effectiveness may only be possible in the context of packages of initiatives such as those found in a WDAP. A conceptual framework that fits well with this approach is the Infrastructure-Service-Behaviour framework (Timlett and Williams 2011), which emphasizes the importance of addressing all three elements in the framework in order to elevate the quantity and quality of waste diversion. Infrastructure changes can make waste diversion more convenient, such as through providing door-to-door collection of recyclables for the elderly; service changes can include spot-checking of waste and recycling bins for contaminants; and behaviour change can be effected with education and feedback programs.

To test the WDAP approach, we selected six high-rise buildings and compared them to three 'model' buildings that already had excellent waste diversion performance and were comparable to the test buildings in size, age and resident composition. We measured several aspects of waste diversion performance, resident attitudes and practices and building team perceptions before and after the implementation of the WDAP. The WDAP buildings adopted a range of ISB interventions and some showed substantial increases in waste diversion, close to those experienced by the model buildings. However, two of the buildings dropped out of the study before its completion because of personnel changes or lack of commitment by the building teams. Interestingly, by the end of the study, many of the attitudes and self-reported practices of building residents in the remaining test buildings had converged towards those of the model building residents even for the two buildings where waste diversion had not improved a great deal.

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Key Words: waste diversion, waste planning, high-rise buildings

THE WILL TO RETREAT: COMING TO TERMS WITH SEA LEVEL RISE IN FLORIDA'S COASTAL COMMUNITIES
Abstract ID: 1154
Individual Paper Submission

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The idea of retreat, seemingly anathema to the human condition, has increasingly become part of global consciousness in the face of climate change. Post-disaster retreat, both reactive and voluntary as well as collective managed relocation, have been part of the fabric of civilizations for millennia (Hino, et al., 2017). With the stability of the global climate system over the last 5,000 years, civilization has developed under an illusion of stationarity and predictability. As climate change has emerged, assumptions of stationarity have given way to uncertainty and instability. SLR may displace as many as 13.1 million people in the United States by the end of the century (Hauer, 2017). The Florida peninsula is at the apex of SLR vulnerability in the United States. Florida is home to three of the world's top-ten most economically vulnerable urban regions, about half of the US population at risk of inundation by 2100, and an economy that is highly dependent upon coastal tourism and functioning ecosystems (Hallegate et al., 2013; Hauer, 2017; Frank, 2020).

This paper explores the extent to which Florida's comprehensive plans are addressing the need to consider relocation or retreat strategies among their SLR adaptation measures. With the passage of the Peril of Flood Act in 2015, Florida's coastal municipalities were required to consider SLR impacts in their comprehensive plans, but the act did not specify how. Planners in the state are responding. Our analysis has shown that the number of plans considering sea level rise has gone from 22 in 2015 to 88 by mid-2019. At the same time, larger numbers are beginning signal the need to add retreat to the mix of potential strategies. Those even mentioning "retreat" have gone from three plans in 2015 (Butler, Deyle, and Mutnansky, 2016) to 17 plans by mid-2019. In this paper, we analyze the retreat language incorporated into these plans and explore the implications for both coastal planners and researchers.

Our findings suggest that while protection and accommodation strategies still dominate the SLR adaptation planning landscape, the focus on retreat strategies is growing. At the same time, the plans are not going quite far enough as a general rule. Most of the policies are general and vague, listing retreat among an array of options rather than specifying locations or types of facilities that will be part of relocation efforts. Where specified, the focus has been on relocation of public facilities and infrastructure up to now, largely ignoring relocation of private development. This suggests the continuation of an incremental approach to SLR adaptation planning as observed in prior research (Butler, Deyle, Mutnansky, 2016). However, that incremental approach is shifting in the face of the Peril of Flood Act mandate to consider SLR flood risks as an increasing number of coastal plans are taking bolder steps to build the foundation for the longer-term consequences associated with SLR.

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Key Words: Sea level rise, Retreat, Relocation, Florida, Peril of Flood Act

INSTITUTIONAL DESIGN AND METROPOLITAN ENVIRONMENTAL PLANNING: BRIDGING THE GAP BETWEEN MUNICIPAL AUTONOMY AND REGIONAL ENVIRONMENTAL NEEDS
Abstract ID: 1180
Individual Paper Submission

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Decentralization has significantly altered how cities are governed and how much autonomy is granted to subnational governments. While conducive to increasing citizen participation and improving the quality of urban governance through greater autonomy and accountability (Campbell, 2003) increased municipal autonomy poses a significant challenge to conurbated municipalities needing to coordinate environmental plans among themselves and with their wider region. In the case of water, scholars have highlighted the importance of governance arrangements to achieve integrated water resources management (Grigg, 2016), tying initiatives to land-use plans to take advantage of the statutory authority of local municipalities and of implementing mechanisms and processes that can coordinate different agencies and organizations (Mitchell, 2005). Yet how those arrangements are negotiated among competing actors and how they come to be enforced in weak institutional contexts such as those found in the Global South merit greater attention. This paper seeks to contribute to the literature on institutional design at the subnational level, integrated water resource management and regional environmental planning by addressing two questions: how do disparate territorial and administrative entities negotiate and coordinate their interests in the formation of new metropolitan environmental institutions? Most importantly, in contexts of high levels of municipal autonomy and national arrangements privileging fragmented environmental authority, how are new environmental planning institutions enforced? Using process tracing to analyze the emergence and evolution of municipal and metropolitan environmental planning institutions and based on empirical research on metropolitan environmental planning in Colombia's Aburra River Valley (home to Medellin and nine other municipalities), this paper looks at the emergence and implementation of different institutional arrangements impacting the planning and management of water resources and air quality. Environmental planning in Medellin's metropolitan area is shared among the metropolitan authority (AMVA), departmental authorities (Corantioquia and Cornare), and to a varying extent the municipalities and national government. Land-use planning on the other hand is the exclusive purview of the municipalities which do not always abide by what is stipulated in their plans. While most of the environmental plans generated to date are non-binding, the ten municipalities have come to acknowledge their interdependence and their dependence on the wider region leading to the successful implementation of some environmental initiatives (Restrepo-Mieth & Perez-Jaramillo, forthcoming). Actions to protect water ecosystems are crucial given that 85 percent of the water consumed by the municipalities is captured outside their perimeter. Other initiatives, such as air quality management, have experienced mixed results: while the Aburra Valley's real-time air quality monitoring system is considered the best in Latin America, the region has experienced five environmental contingency episodes between March 2018 and March 2020 leading to recent fractures in the implementation of governance arrangements. An initial review of the findings shows that the existence of a metropolitan authority with legitimacy in the eyes of key stakeholders has aided the coordination and negotiation among municipalities leading to successful

outcomes, however, the entity's limited mandate creates loopholes that lead to fissures in governance arrangements. Second, the inability of the metropolitan authority to independently raise financial resources beyond what is currently stipulated leaves its agenda subject to political capture by Medellin, the most solvent municipality in the association. Third, a lack of uniform enforcement mechanisms across the various agencies limits the usefulness of coordination mechanisms therefore undermining frameworks set in place to plan and manage environmental needs. Findings from this research help advance the institutional approach within environmental planning theory by building on historical and sociological institutionalism theories in combination with integrated water resources management. Policy implications include the need for planners to pay close attention to gaps in enforcement mechanisms that may leave unrealized otherwise well-developed plans.

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Key Words: Institutions, Metropolitan planning, Water resources management, Multi-level governance, Air quality

WHO'S GOT SOLAR?
Abstract ID: 1187
Individual Paper Submission

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The rapid and large-scale deployment of renewable energy is critical to mitigate the worst expected effects of climate change. Human activities are estimated to have already caused about 1°C of warming above pre-industrial levels, and it is likely to reach 1.5°C as early as 2030 without rapid decarbonization (IPCC, 2018). Rooftop solar photovoltaic (PV) is an important component of the portfolio for new renewable generation because it minimizes potential impacts and tradeoffs relating to land use and siting (van Zalk and Behrens, 2018). However, early adoption of residential solar photovoltaic within the U.S. has been dominated by higher income households and thus motivates the question of equitable benefit from PV policies (Borenstein, 2017; Moezzi et al., 2017). Hawaii has been at the forefront of solar PV deployment, with the highest per capita adoption in the U.S., largely due to having the highest electricity cost.

This study analyzes the role of income, home ownership and other demographic factors in residential solar PV adoption in Hawaii. Similar to Borenstein (2017), we use census data joined with the spatial distribution of solar PV. We obtain the solar PV data from building permits, available for Oahu and Maui counties. Regression results show that owner-occupied housing units, single-family residences, and income are, unsurprisingly, the most influential factors in explaining the differences in PV adoption between census tracts. We find that a 1% increase in owner-occupancy corresponds to a 25-33% increase in the share of households with PV, a 1% increase in the share of single-family dwellings corresponds to a 8-13% increase, and that a $10,000 increase in median income corresponds to a 1-3% increase. These findings suggest that single family owner-occupancy is a large barrier to entry within the market for solar PV. It also supports the proposition that landlords and tenants suffer from a "principal-agent" problem as

it relates to distributed energy (Sigrin and Mooney, 2018), where renters lack autonomy over decision-making regarding capital investments and landowners face a disconnect between cost and benefits of capital investments in rental assets.

While Sigrin and Mooney (2018) look at the technical potential of the enormous magnitude of solar PV that could be installed within low-to-moderate income homes, this paper uses Hawaii as a case study to assess alternative policy mechanisms that might enable this transition. In particular, we will assess our dataset for changes in PV installation patterns over time, accounting for programmatic changes to, for example, net energy metering, and as prices decline. Lastly, community-based renewable energy (CBRE) programs offer the opportunity to bringing in renters and underserved communities, though its efficacy will certainly depend on the relative rates in comparison to alternatives like utility-scale projects.

This research well aligns with the ACSP 2020 conference themes of equity and justice. The challenges posed by global climate change require swift response while supporting communities of diverse incomes and access to emerging technologies.

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Key Words: Climate change, renewable energy, solar photovoltaic, energy justice

SOCIAL DISPARITIES IN FLOOD VULNERABILITY: VALIDATING INDICATORS ACROSS TIME, SPACE, AND SCALE OF ANALYSIS
Abstract ID: 1188
Individual Paper Submission

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Flood losses continue to rise dramatically around the world, with multi-billion-dollar events becoming common. Communities in coastal regions are expected to face more frequent and intense coastal hazards. As communities work towards planning for the future, the strategic decisions are currently restrained by a limited understanding of vulnerability as a dynamic concept. The conventional risk assessments often assume constant vulnerability across space and time, and the indicators used are rarely validated. Much of the social vulnerability literature focuses on households or the county-level, rather than the community

level which is useful for integrated risk assessment and planning.

This study takes a different approach to develop robust measures of social vulnerability for coastal regions in the U.S. and statistically assess how these indicators vary spatially and temporally. The research builds on theory from the hazards-of-place model of vulnerability. An enhanced framework of the hazards-of-place model which recognizes the layered and dynamic processes of vulnerability will be used. First, a statistical analysis will be conducted to identify and validate vulnerability indicators by disaster phase: pre-disaster indicators that influence preparation and post-disaster indicators that affect recovery. Second, a cross-scale analysis will be performed to examine the variation of each indicator across unit of analysis – neighborhood, municipality, county, state, and region.

We use high resolution consumer spending data at the weekly level as well as quarterly business revenue by sector to validate the vulnerability indicators by examining the association between flood events and consumer consumption before, during, and after the onset of flood. The project uses Nielsen's Retail Scanner dataset (2006-2018), sector-level business revenue, and FEMA disaster declarations data.

The resulting methodology will help in identifying the types of communities that are vulnerable for the purposes of risk analysis and reduction. Additionally, the use of high resolution datasets will provide opportunities for including distributive justice issues in risk management. This approach will enable improved estimates of context specific vulnerability and allow for comparative vulnerability assessment at the community-level, for coastal communities across the country.

Social vulnerability is not incorporated into current recovery assistance decisions. This study will include post-disaster vulnerability indicators in order to identify communities limited in capacity to recover. Robust vulnerability measures developed through this study might vastly improve risk communication, adaptation investments, disaster mitigation and recovery programs, and distribution of disaster aid. The temporal and spatial dynamism of vulnerability makes the process of risk assessment and planning complex. Findings will inform the development of integrated risk analysis which is essential for understanding evolving risks in the face of nonstationary. Ultimately, identification of significant vulnerability indicators by disaster phase and scale will have major implications for emergency managers and will help in understanding cascades of social impacts.

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Key Words: Social Vulnerability, Coastal Flooding, Community Level, Validation, Recovery Planning

ASSESSING THE BENEFITS OF UHI MITIGATION FOR INDOOR HEAT EXPOSURE DURING CONCURRENT HEAT WAVE AND BLACKOUT EVENTS
Abstract ID: 1194
Individual Paper Submission

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Extreme temperatures pose a significant risk to human health, and are projected to worsen in a warming climate with increased intensity, duration and frequency of heat waves in the coming decades. Urban residents are at higher risk of heat exposure due to the urban heat island, a phenomenon in which built materials absorb and retain heat from the sun and elevate urban temperatures. Concurrent with a rapid rise in temperatures within US cities, the frequency of regional electrical grid failures is also rising in recent decades, resulting in a growing number of blackouts during periods of extreme heat. As mechanical air conditioning is a primary adaptive technology for managing rising temperatures in cities, we examine in this paper the impact of a prolonged blackout on heat exposure in residential structures during heat wave conditions, when air conditioning is most critical to human health. In such events, passive cooling strategies such as light-colored "cool" roofing can provide benefits without the need for an active power grid. This study seeks to answer: to what extent can cool roofing reduce indoor temperatures in a concurrent heat wave and blackout event for residential structures as compared to conventional roofing?

Data & Methods

Our research approach combines a coupled global and regional climate modeling system with a building energy performance model to simulate how a concurrent heat wave and grid failure event would impact residential building interior temperatures in Phoenix, AZ. Historic heat wave conditions are simulated across the city using Weather Research & Forecasting (WRF) regional climate models. These conditions drive interior temperatures in typical building prototypes generated by EnergyPlus in dense urban and sparse suburban environments, with both cool and conventional roofing materials, with and without air conditioning.

Results

We find building interior temperatures to exceed 114°F for single-family structures during the late afternoon of the simulated heat wave and blackout event. Furthermore, we find a substantial increase in heat exposure across residential buildings of up to 21.6°F in response to the loss of electrical power and mechanical cooling systems. Despite substantially higher outdoor temperatures due to the urban heat island, we find high density residential zones to experience marginally elevated building interior temperatures during blackouts relative to lower density zones. Our simulation of temperatures for three common residential structures with cool roofs finds only a modest impact on building interior climates. When averaged over the three building types, the benefits of cool roofs during blackout conditions was found to be less than 2°F, suggesting that other adaptive methods are needed to minimize extreme heat exposure.

Significance

This study is the first of its kind to combine linked indoor and outdoor temperature models during a concurrent heat wave and blackout event. Our warming climate, exacerbated by the urban heat island, constitute a significant threat to human health among urban populations Such risk is particularly severe among individuals unable to evacuate the blackout zone or otherwise obtain access to cooler environments. For residents of Phoenix lacking access to continuous mechanical air conditioning on a routine basis, building interior temperatures represent a significant health risk even when electrical grid systems are fully operational. The marginal thermal benefits of cool roofing found in this study imply that it should be only one part of a more comprehensive heat mitigation plan. Planners should look to a combination of policies such as enhancing passive vegetative cooling in UHI-vulnerable neighborhoods or targeting heat-sensitive populations for cooling centers. The importance of mechanical air conditioning found in this study further implies that planners should encourage greater local grid resilience through

policies like district energy or local renewables to protect communities at highest risk.

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Key Words: Urban Heat Islands, Public Health, Heat Mitigation, Climate Change, Infrastructure

SUSTAINING SUSTAINABILITY: A LONGITUDINAL STUDY OF LOCAL GOVERNMENTS IN THE UNITED STATES
Abstract ID: 1209
Individual Paper Submission

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Local government sustainability planning began as an unusual practice in the 1990s but is now quite common for local governments to adopt sustainability plans and policies. Across this thirty-year period, scholars have studied what constitutes "taking sustainability seriously" at the local level in great depth (Portney 2013). Scholars have also identified many individual factors leading to policy implementation success, such as adopting a sustainability plan rather than individual policies (Wheeler 2013), using performance metrics (Elgert 2013), partnering with non-governmental organizations, cross agency collaboration (Johnston 2013), and engaging the public in planning and implementation (Kinzer 2018). This study assesses the relationship between these success factors and sustaining local government sustainability efforts over time through a quantitative analysis of three surveys on sustainability policies and programs, disseminated in 2010, 2015, and 2020.

The data sources for this study include the 2010 and 2015 Local Government Sustainability Policies and Programs Survey conducted by the International City County Management Association (ICMA) and a 2020 survey conducted by the author. The 2010 and 2015 surveys were sent to every local government in the United States with a response rate of 25% in 2010 and 22% in 2015 (n = 2,176 and 1,899 respectively). The 2020 survey was sent only to the approximately 1,000 local governments that responded to both the 2010 and 2015 survey. This longitudinal data set tracks elements of sustainability planning over time, including plan and policy adoption, public support and engagement, staffing, and barriers to implementation. In addition, the 2020 survey includes a series of questions on the success factors identified in the literature, including the impact of indicator systems, the role of non-governmental partners, public engagement in policy change and implementation, and inter-departmental collaboration.

This study seeks to address the following research questions: Are local governments sustaining their efforts to become more sustainable places over time? What characterizes the communities that have sustained or increased policy adoption and implementation? Which of the success factors identified in qualitative literature on sustainability plan and policy implementation have a quantitative impact on sustaining sustainability? To answer these questions, the policy adoption and change from each survey

year was normalized and an index of progress in sub-areas of sustainability, such as energy conservation and green building, was calculated. Using these topical indexes, each community received a normalized sustainability policy score for 2010, 2015, and 2020. These scores were compared to track the degree to which a community is sustaining sustainability over time. This index was the dependent variable in both a correlation analysis and regression model testing its relationship with the various success factors captured in the 2020 survey.

Sustainability planners have limited time and must prioritize their work for maximum impact on meeting the goals laid out in their community's sustainability plan. This study provides guidance on how to set these priorities by identifying the degree to which factors, such as maintaining an indicator system or heavily engaging the public in implementation, are related to sustaining sustainability. The study sheds light on factors that are unimportant yet may occupy a significant amount of staff time and identifies the factors that have the strongest relationship to a sustained implementation effort. These factors are in turn the areas where sustainability directors and staff should focus the bulk of their time and energy to support implementation.

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Key Words: Sustainability plan, Sustainability policy, Implementation, Public engagement

A MACHINE LEARNING APPROACH TO MODEL SPATIAL VARIATIONS OF DAILY FINE PARTICULATE MATTER (PM$_{2.5}$) AND NITROGEN DIOXIDE (NO$_2$) CONCENTRATIONS IN SHANGHAI, CHINA
Abstract ID: 1218
Individual Paper Submission

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It is challenging to predict high-resolution spatial-temporal patterns of intra-urban air pollution and identify impacting factors in regional scale. Studies have attempted to capture features of air pollutants such as fine particulate matter (PM$_{2.5}$) and nitrogen dioxide (NO$_2$) using traditional linear models like land use regression (LUR) but such methods overlooked factor multicollinearity, non-linear correlations and performs not well when processing daily data. While machine learning is increasingly used in environmental research and is a potential approach in improve the model fitness. Therefore, we planned to answer the research questions: could a nova machine learning model be exploited to assess the spatial-temporal variations of urban outdoor air pollutant concentrations and capture the relationship between air quality and built environment?

In this paper, a machine learning method - random forest was exploited to establish intra-urban PM$_{2.5}$ and NO$_2$ spatial-temporal variation models and compared to traditional LUR method. Taking City of Shanghai, China as the case area, 36 station-measured daily records in one year of PM$_{2.5}$ and NO$_2$ concentration and over 80 different predictors associated with meteorological and geographical

conditions, transportation, community population density, land use, and points of interest were used to construct LUR and random forest models. LUR used $PM_{2.5}$ and NO_2 concentration data from 36 monitoring stations as dependent variables, and 84 independent variables for $PM_{2.5}$ model, 81 independent variables for NO_2 model. Random forest used the same data ensembled decision trees. Outputs of all trees are aggregated to produce one final prediction. In order to achieve strong generalization performance of ensemble learning, individual learners in the ensemble was set independent level and different among each other.

Results from the two methods were compared, and impacting factors were identified. Explained variance (R^2) was used to quantify and compare model performance. The final LUR model explained 49.3% and 42.2% of the spatial variation in ambient $PM_{2.5}$ and NO_2, respectively, whereas the random forest model explained 78.1% and 60.5% of the variance. Regression mapping for unsampled sites on a grid pattern of 1km×1km was also implemented. The random forest models performed much better than the LUR model. In general, our findings suggest that the random forest approach offer a robust improvement in predicting performance compared to LUR model to estimate daily spatial variations in ambient $PM_{2.5}$ and NO_2.

The findings in this study may encourage urban planners to take into account the impacts of urban design on air quality. The methodology in this paper will also provide an alternative for analyzing spatial variations of outdoor air pollution concentrations in built-up environment.

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Key Words: machine learning, random forest, land use regression (LUR), Intra-urban air pollution, PM2.5

ROLE OF CLIMATE RISK PERCEPTIONS IN MUNICIPAL LEVEL ADAPTATION PLANNING: A CASE STUDY OF COURTENAY, BRITISH COLUMBIA
Abstract ID: 1237
Individual Paper Submission

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Risk perception is understood to play a key role in how decisions are made at both individual and organizational level (Slovic, Fischhoff, & Lichtenstein, 1982; Smallman, 1996). When it comes to planning for climate change, how municipal officials perceive climate change and associated risks could affect cities' adaptation planning processes (Lee & Hughes, 2017; Tang et al., 2010). However, this relationship remains underexplored, and therefore, we take the case study of the city of Courtenay, BC to address this gap. Using semi-structured interviews, focus group discussions with municipal officials in different departments, and official document analysis, we assessed municipal officials' climate risk perception and identify the adaptation measures recommended and taken in the city. Our study indicates that a high level of risk was perceived by most respondents. But there are disparities in how most officials

characterize risk in relation to other parts of Canada and the world which indicates spatial discounting i.e. officials ascribed less weightage to geographically distant effects in comparison to closer effects. The past experiences with natural hazards and events ascribed to climate change were found to increase respondents' risk perception and diminish spatial and temporal discounting. The knowledge of the effect of sea-level rise and vulnerable groups in their community also enhanced risk perception. Further, we observe strong congruence between the high-risk perception of officials and the planned measures by the city. But, notably, risk perceptions of the technical staff seem to have more influence on planned adaptation measures in comparison to non-technical municipal staff.

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Key Words: Risk Perception, Climate Change, Municipal Officials, Adaptation Planning

WHAT GOOD IS A MANDATE TO PLAN? RESPONDING TO THE PERIL OF FLOOD ACT FOR SEA LEVEL RISE ADAPTATION IN FLORIDA
Abstract ID: 1251
Individual Paper Submission

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Planning mandates have been found to improve plan quality and, when paired with local commitment and motivation to act, they lead to the adoption of strategies to shape development, affordable housing, hazard mitigation, and environmental protection (Dalton and Burby 1994; Hoch 2007). However, much remains to be explored regarding how the dynamics of state level mandates interact with local conditions to shape responses to climate adaptation (Bierbaum et al. 2013; Shi et al. 2015). With the passage of SB 1094 in 2015, the Peril of Flood Act (PoFA) in Florida, a state mandate changed the context for SLR adaptation planning by requiring local governments to consider the risks of sea level rise through the coastal management element of the comprehensive plan.

This paper examines the extent to which a state mandate spurred SLR planning in Florida. Through an analysis of 152 coastal comprehensive plans, we identify a range of responses to the mandate and propose potential explanations for the variability of language in the plans. Our work builds on prior analysis (Butler, Deyle, and Mutnansky, 2016) of sea level rise planning in Florida conducted prior to the PoFA which allows us to compare sea level rise planning in Florida pre and post-PoFA planning mandate to directly explicate the impact of the PoFA. Butler, Deyle, and Mutnansky (2016) found that 21 comprehensive plans addressed SLR in the state of Florida. In the four years since the Peril of Flood Act, there has been a significant increase in the adoption of sea level rise adaptation language in Florida's comprehensive plans. We find that as of the summer of 2019, 88 out of 211 of Florida's coastal counties and municipalities took sea level rise into account in their comprehensive plans. By 2023, all 211 should have language in their comprehensive plans that account for SLR.

Our findings suggest that planners in Florida have taken on the task of planning for SLR with a higher level of attention since the passage of the PoFA. Yet, there is great variability in responses which brings

up questions about implementing planning mandates. Our paper elucidates the variation across the plans in the state and explains the extent of and implications of variation in implementing the mandate. In terms of planning intelligence, we find that current and credible data as well as vulnerability assessments are emphasized while fewer communities commit to ongoing monitoring. Most plans have generalized responses although nearly half commit to protection and accommodation strategies. Less than a fifth consider avoidance or retreat strategies. Inter-local and regional collaboration for coordinating projects and strengthening planning intelligence dominates while working with state or federal entities is less frequently mentioned. We explore the implications of these findings by reflecting on how the mandate is situated as a specific policy within a general planning legal framework, evidence of complacent compliance, the opportunity created by flexibility within the mandate, and the motivations to go beyond the requirements of the mandate.

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Key Words: climate change adaptation, sea level rise, adaptation planning, Peril of Flood Act

GREEN INFRASTRUCTURE AND BUILDING ENERGY PREDICTION
Abstract ID: 1261
Individual Paper Submission

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In the United States, buildings account for approximately 40% of our energy consumption, utilize 70% of our electricity and are responsible for approximately 1/3 of our total greenhouse gas emissions. Green infrastructure can be an important strategy for reducing building energy demands [1]. Green infrastructure and tree canopy have been shown to reduce building energy loads in the summer by shading buildings and intercepting solar radiation and in the winter by shielding buildings from high winds. For example, tree canopy can reduce on average 30% of the residential energy demand during the summer season and 10% of the heating energy demand during the winter [2]. The green spaces surrounding buildings (grass, shrubs, and trees) can also indirectly reduce energy loads by cooling a building's microclimate.

In this research project, we present the results of a pilot study we are conducting to investigate how trees and green space impact building energy use on Indiana University's campus in Bloomington, IN. We are investigating this relationship in both winter and summer conditions to determine how trees and green space reduce peak energy demand during times of extreme temperatures. We analyzed three years of hourly energy data for six buildings on campus. These buildings were selected based on similarity of building programming, building size, and year of construction—but have differing urban form conditions

surrounding each building. Our aim is to use building energy data, building characteristics, and local environmental conditions to create historical and real-time models to better understand relationships between building energy and green infrastructure. Our pilot study builds the foundation for a future campus-level model.

The results of this research will help to quantify the benefits of green infrastructure to Indiana University's Capital Planning and Facilities department, as well as develop rules of thumb and recommendations for landscape services on campus. This research could also help quantify and monetize ecosystem services for universities, cities, and communities [3]. The results of our research could help individual land owners understand the ability of tree canopy to directly reduce their energy demand and could result in computer interfaces to help communicate this information to a variety of connected stakeholders. Additionally, this research could help validate, develop and improve current building energy models by specifically quantifying the tree canopy/building energy interactions in predictive models and by defining which key parameters are needed as inputs into models.

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Key Words: Green Infrastructure, Building Energy, Urban Heat Islands

A TEMPORAL ANALYSIS OF CHANGES TO PER CAPITA OUTDOOR WATER USE IN THE GREATER DENVER REGION
Abstract ID: 1301
Individual Paper Submission

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Water is a significant limiting factor to urban growth in much of the American West. A key question is whether per capita consumption can be reduced without compromising quality of life. Numerous characteristics of the built environment have been found to drive residential water demand, including parcel size and turf grass cover (Stoker and Rothfelder 2014), building age and value (Change et al 2017), housing type (Gahvidelfar et al. 2017), and neighborhood level factors such as social norms around landscaping (Barnett et al 2020). Not surprisingly then, even minor changes to design and permitting standards have been found to yield significant cumulative savings in residential water consumption (Stoker et al 2019).

While numerous cross-sectional studies of water use have been done to understand demand correlates, fewer have addressed changes in residential water demand over time, which is an important gap given the extent to which per capita rates have dropped throughout the West in recent years. Building on a previous cross-sectional analysis conducted by the authors, this study adds to this literature by analyzing an extensive time-series data set with hundreds of thousands of records of residence-level water consumption from several jurisdictions in the Colorado Front Range region. Looking across several years (between 5 and 16 depending on jurisdiction), it explores how per capita outdoor water use has changed over time in aggregate and in terms of per square foot irrigation rates, adjusting for climate. Through use of historical high-resolution land cover maps and subdivision maps, it explores the extent to which the overall decline in per capita use can be attributed to changes in land use and zoning that affect irrigable area per lot or per

household, versus changes to practices such as landscape composition or wastage through overwatering. We in turn study how those changes in landscaping practices, composition, and lots are driven by deliberate policies, such as landscaping ordinances, education campaigns, new zoning districts, or water pricing, as opposed to by other forces.

Hybrid cross-sectional and longitudinal approaches will be used to look at where irrigation rates changed the most, and what factors appear to predict these changes. To date, most data have been processed, cleaned and geocoded and cross-sectionally analyzed, but have yet to be temporally analyzed. The longitudinal study will use a combination of regression and difference-in-differences analysis to assess how changes in outdoor water usage at different spatial scales can be attributed to the predictive factors mentioned above and how those may be attributed to deliberate policies.

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Key Words: Urban water demand, Residential irrigation, Residential landscaping, Land use planning, Zoning

QUANTIFYING AURORA COLORADO'S WATER AND LAND USE NEXUS TO UNDERSTAND WATER BUDGETS FOR RESILIENT FUTURE DEVELOPMENT
Abstract ID: 1319
Individual Paper Submission

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This research contributes to water resource resilience planning, to increase community scale capacity to prepare, plan, absorb, recover from and adapt to the effects of our changing climate on water supplies (Cutter et al., 2010; Romero-Lankao et al., 2016). Coupling growing population densities in urban areas with climate change creates greater vulnerability to future water scarcity. Mitigating these impacts involves community-scale changes (Romero-Lankao et al., 2016) such as land use zoning and community growth boundaries to minimize effects (Moser, 2010). To address these circumstances, this paper explores the determinants of urban water use by modeling urban tree transpiration and comparing those results with water use data for the City of Denver. From a water management perspective, understanding transpiration rates of urban trees is fundamental to improving the selection of water-conserving species (Bush et al., 2008). Moreover, efficiencies in water use, infrastructure and land uses are essential for resilient urban development and redevelopment, thus the land and water nexus is an important relationship for managing future water adequacy.

This study informs sustainable urban land use design, as a key component to building water resilience and mitigating the effects of future water scarcity and drought events. Using the Denver Region Council of

Government's urban growth simulation model projections of future growth and a detailed analysis of Aurora's water use, housing profile, demographic data and land use zoning data, this study models future water consumption into projected growth areas. This research will expand upon the few existing studies that have already integrated urban growth models with water consumption models (A. Polebitski & Palmer, 2010; A. S. Polebitski et al., 2010). One of the primary research questions is to determine the water footprint of future growth by assessing lot size, housing type and size and impervious area based on regressions of Aurora Water customer water use data. Understanding these determinants of historic and present water demand provides insight for estimating future urban water demand. The results can be used to shape future development through scenario planning for variations in key land use policies and planning tools such as zoning, ordinances, and landscaping guidelines for new developments, open spaces and parks. While many Western cities have water conservation programs and municipal regulations used in times of scarcity (Mansur & Olmstead, 2012), apart from some arid southwestern cities (Holway, 2009), most urban areas don't have strict land use policies that are shaped around future water resilience.

The project estimates household level water consumption, based on regressions of Aurora Water customer water use data. These coefficients are an important component to determining the baseline water demand (current status-quo) and formulating alternative scenarios such as the extent to which climate change and future population growth would increase water demand. This research allows for an assessment of the overall water footprint of different development types based on the detailed housing typology created using current housing and water use in Aurora.

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Key Words: Water, Resilience, Land Use, Climate Change, Population

THE POST-HURRICANE HARVEY URBAN PARK: ENVIRONMENT AND SOCIAL AWARENESS
Abstract ID: 1322
Individual Paper Submission

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Globally, the population continues to increase within these vulnerable areas that have high potentials for landslides and flooding (Douglas et al., 2008; Houghton et al., 2012; Menoni et al., 2012). While approximately 20% of the land area in the U.S. is located within coastal counties, more than half of the entire U.S. population occupy these counties, exposing tens of thousands of people to this extreme vulnerability (Beatley, 2009). Various scholars have studied the nexus of environmental conflicts and projections and modeling. Tebaldi, Strauss, and Zervas (2012) examined coastal communities and their

vulnerability to flooding. Their analysis modeled the effects of global temperature changes on sea level rise between 1979 and 2008, and included projections for 2050 as well. The study found that numerous locations will experience a local sea level rise in the near future.

Considering the nature and propensity of tropical storms in the Houston area, Zhu et al. (2015) examined a six decade record of daily precipitation and river discharge in four watersheds. Their findings showed that the more developed the watershed (i.e. Brays Bayou), the likelihood higher discharge would occur. This discharge rate is highly linked to areas of increased development and the amount of vegetation present. Ray et al. (2011) analyzed the effects of storm surge and inland rainfall on the floodplain of a coastal bayou in the Houston area by performing hydraulic modeling. The findings showed that rainfall in tandem with storm surge impacts affected flooding magnitude.

Urban resilienceis a new approach for empowering cities when facing natural disasters. Resiliencerefers to the capacity of communities to decrease or modify natural disasters and vulnerabilities including developing methods, analyzing the risk potentials, adopting strategies, social resilience, and improving knowledge on natural disaster mitigation (Berke and Campanella, 2006; Meyer et al., 2018). Immediately following natural disasters, gray and green infrastructure are expected to prevent excessive damage or manages the highest risks and hazards. One example is Buffalo Bayou Park in Houston, TX. Experienced by three foremost floods since its opening, including Hurricane Harvey, Buffalo Bayou Park is a potential precedent for resilient open-space design, planning, and operations in climate-sensitive and flood-prone coastal areas (Aman and Yildirim, 2019). Hurricane Harvey made landfall in Houston, Texas in 2017 along with a number of coastal cities, dropping more than 50 inches of rain onto Houston over a four-day duration.

Also, while strategies for mitigation assessment and implementation are generally propelled by regional associations with particular expertise in this area, the policies implemented often lack significant local and resident-based knowledge that can provide great value (Godschalk et al., 2003; Hurlimann et al., 2014; Meyer et al., 2018). This research studied the performance of Buffalo Bayou Park during and after Hurricane Harvey and used bilingual surveys to obtain the perceptions of Houston residents on the role of this park during natural disasters.

It used Environmental and social systems were analyzed to assess the park's performance as a resilient urban landscape. The paper presents analyses of quantitative and qualitative data which was conducted through a number of methods including secondary data analysis, mapping, on-site observation, and qualitative surveys. The results of this study shows that since the opening of Buffalo Bayou Park in 2015, it has performed as designed relative to flood events, restored ecologies and promoted pollinator habitat, educated the public on flood protection, and improved the health and well-being of park users and Houston residents. Planners and policymakers can use the results of this study as a reference for enhancing their resiliency strategies.

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SOCIAL EQUITY IN PERFORMANCE OF STORMWATER INFRASTRUCTURE: FINDINGS FROM HOUSTON
Abstract ID: 1346
Individual Paper Submission

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Stormwater management refers to investment and maintenance of stormwater infrastructure, which mitigates flooding by controlling surface water runoff flow in an area (e.g., watershed and/or neighborhood). Stormwater management infrastructure is provided by a municipality through a capital improvement plan. A growing number of studies have examined the uneven distribution of stormwater infrastructure across neighborhoods based on the racial/ethnic/income composition, using an environmental justice framework (Hendricks, 2017; Mandarano, et al., 2017; Porse, 2018). However, the previous studies are limited by data availability related to the types and measurement of infrastructure.

To address these gaps, this research examines the performance of stormwater infrastructure for diverse neighborhoods in the City of Houston, Texas. This research defines the performance of stormwater infrastructure as the degree to which stormwater infrastructure is characterized by proper design capacity and maintenance for reducing stormwater runoff during rainfall events. Specifically, we address the following question: How are the distribution, capacity, and condition of the stormwater infrastructure associated with neighborhood socio-demographic composition?

To answer, we merge secondary stormwater infrastructure spatial data from the City of Houston GIMS website with Census block group data and the impervious surface data from National Land Cover Database (2016). We conduct a descriptive analysis of the normalized density of infrastructure by types, socio-demographic composition, and urban development patterns across 1,426 Census block groups and use bivariate correlations and regression. The descriptive analysis is then used to identify neighborhoods for further qualitative study. We have 6 selected neighborhoods whose population density and neighborhood age are similar: Greater Heights (a White-dominated neighborhood with mostly roadside ditches), Sunnyside (a Black-dominated neighborhood with mostly roadside ditches), Northside/Northline (a Hispanic- dominated neighborhood with mostly roadside ditches), University Place (a White-dominated neighborhood with mostly storm sewer), Greater Third Ward (a Black- dominated neighborhood with mostly storm sewer), and Magnolia Park (a Hispanic- dominated neighborhood with mostly storm sewer). We do multiple case studies to compare the distribution, capacity, and condition of infrastructure elements based on the secondary data (e.g. stormwater infrastructure data, Census block group data, and the impervious surface) and primary condition assessment data measured through fieldwork. Condition assessment is based on the performance standards from Oti, et al. (2019).

The preliminary results support the hypotheses based on the findings from environmental justice and hazard vulnerability literature; 1) Neighborhoods with a higher percentage of Black or Hispanic and lower median household income have more roadside ditches and less storm sewers for stormwater management when controlling for density and imperviousness; 2) Socially vulnerable neighborhoods have more deteriorated and poorly maintained roadside ditches, storm sewers or culverts, inlets, and curb and gutters; and 3) Socially vulnerable neighborhoods are more likely to have inadequate infrastructure capacity and more vulnerable to flooding. The findings of this study have substantial implications for equitable stormwater management while developing flood mitigation strategies in capital improvement plans and land use plans.

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Key Words: Equitable stormwater management, Performance of stormwater infrastructure, Environmental Justice, Hazard vulnerability, Flood mitigation

AN AGE-INTEGRATED APPROACH TO IMPROVE THE TWO-STEP FLOATING CATCHMENT AREA METHOD TO MEASURE SPATIAL ACCESSIBILITY TO URBAN PARKS IN SHANGHAI, CHINA
Abstract ID: 1347
Individual Paper Submission

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The measures to improve the spatial accessibility to green infrastructure are important for achieving equality in the public environment system. To accurately evaluate the variations of the accessibility to park is a prerequisite for rationally allocating green space resources. This article studies the disparities in park accessibility in central urban areas of Shanghai and explores an appropriate accessibility measurement for the elderly, as a matter of promoting environmental justice. The urban planning department provides data on all parks of Shanghai and the demographic data are from the sixth census of Shanghai. Besides, the road network and POI data are collected from Gaode Map, one leading platform of Web GIS services in China. Firstly, using the network analysis method of GIS, this study analyzed pedestrian accessibility to urban parks in Shanghai and the subsequent serviceability of the parks. Then, we improve two-step floating catchment area (2SFCA) method and analyze environmental justice for spatial access to parks, which can identify more underserved areas compared to the traditional method. Additionally, we especially study spatial accessibility to parks for the elderly, who have poor mobility and need the nearest park service. The research finds spatial accessibility exhibited clustering characteristics: high accessibility areas are clustered near the old city center as well as along the Huangpu River, while low accessibility areas are distributed in periphery of central area. Moreover, both the increase of the amount and size of parks can significantly improve the accessibility of surrounding areas. The park accessibility of the elderly is generally consistent with the overall situation, however, the accessibility of them in the north and west area is quite poor, because of the limited parks and insufficient travel capacity of the elderly. These areas urgently need to improve park accessibility for the elderly and promote healthy aging.

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Key Words: Urban parks, Spatial accessibility, Green infrastructure, Environmental justice, Two-Step Floating Catchment Area (2SFCA)

RETHINKING "CAPACITY": THE ROLE OF ORGANIZATIONAL CHANGE IN ADVANCING RACIAL EQUITY THROUGH CLIMATE ADAPTATION PLANS
Abstract ID: 1349
Individual Paper Submission

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A growing number of climate adaptations plans are incorporating racial equity as a guiding principle. This pursuit of equity, however, can lack meaning when insufficient capacity exists to operationalize equity goals (Schrock, Bassett, and Green 2015). This paper thus asks, how can planning departments be better equipped to advance racial equity? What organizational change is needed to advance these racial equity goals? The paper employs Ray's (2019) theory of racialized organizations as an analytical framework to understand how the inner-workings of planning departments can reproduce racism. The theory maintains that organizational rules and norms—including those of planning departments—contain racial meaning. These inner-workings lead to the reproduction of racism. The paper builds on planning theory that discusses the field's pursuit of social justice. For example, Healey (1998) argues for enhanced local governance capacity for a more effective "institutional web of the city." Fainstein (2010) draws on the work of Amartya Sen to encourage an "enhanced capabilities" approach. In this view, subjects must be prioritize social justice goals, insofar as their planning context enables them.

This paper draws on case study data from the City of Austin's Community Climate Plan to reach net-zero community-wide greenhouse gas emissions by 2050. In 2020, city officials led the process to review 2015 Plan progress and make necessary adjustments, including a stronger incorporation of racial equity goals. Through participant observation, semi-structured interviews, and official documents, this paper finds that several Austin departments made changes to departments' rules and norms to ensure that the Plan incorporated racial equity goals, as well as a clear plan to operationalize those goals. Preliminary findings support existing research on the importance of community pressure and input (Corburn 2005). They also reveal that the pursuit of racial equity shaped staffing decisions, budgets, and the planning process timeline.

The paper brings attention to how changes to planning departments' rules and norms can advance the pursuit of racial equity, as well as some of the tensions associated to this change. Among the paper's key lessons is that planning processes must approach racial equity as a type of expertise that needs to be funded and supported. The paper also supports existing critiques of the notion of "capacity," as commonly used in community and economic development literature and practice. The private, public, and philanthropic sectors often encourage community-based organizations to enhance their capacity to improve their programming and advocacy efforts. This paper considers whether the capacity concept more aptly applies to funders and decision-makers, as they assert their commitment to racial equity.

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Key Words: Equity, Racial equity, Climate adaptation, Organizations, Planning departments

INTEGRATE CLIMATE ACTION: HOW CITIES IN CALIFORNIA PLAN FOR CLIMATE MITIGATION AND ADAPTATION THROUGH TRANSPORTATION AND LAND-USE
Abstract ID: 1383
Individual Paper Submission

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Cities in California have long acknowledged the need to plan effective responses to both the causes and the consequences of climate change. A central challenge for climate planning efforts has been identifying transportation and land-use (TLU) strategies that simultaneously reduce greenhouse gas emissions ("mitigation") and adapt communities so that they will be less affected by the adverse impacts of climate change ("adaptation"). Sets of policies that collectively address both mitigation and adaptation are known as "integrated actions." The value of integrated actions has recently become widely acknowledged; current research emphasizes the importance of integrating mitigation and adaptation in order to develop cost-effective strategies to combat climate change and protect vulnerable communities. This study explores municipal climate planning in California to determine whether cities incorporate integrated actions into their plans, assess the potential drivers of conflict between mitigation and adaptation in municipal plans, and identify ways the State of California can help cities more effectively incorporate integrated actions. The authors found that some cities did adopt packages of integrated actions, and, promisingly, two cities with recently updated climate plans explicitly focused on the need for integrated actions. However, most cities addressed climate mitigation and adaptation in separate efforts, potentially reducing synergies between the two types of action and even creating conflicts. Since the first generation of climate action plans focused primarily on mitigation of greenhouse gases (GHGs), adaptation strategies have not yet been effectively or fully combined into mitigation plans in many cities. Also, a cross-comparison of plan content and interview data suggests that cities often had sets of policies that could potentially create conflicts—mitigation policies that would undermine adaptation capacity, and vice versa. In addition, where a city did adopt integrated actions, these efforts are typically not labeled as such, nor do the policies appear within the same policy document. Nevertheless, the study findings suggest promising steps that both municipal and state government can take to support integrated TLU actions at the local level. For example, cities can proactively link the content in climate mitigation and adaptation plans, a process that will require building the capacity for cross-collaboration between the various departments in charge of developing, implementing and monitoring climate-related plans. As for the state government, it can provide funding specifically for planning and implementing integrated actions, offer technical support to help municipalities adopt programs and projects that produce integrated mitigation and adaptation benefits, and fund research in the area of integrated actions.

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Key Words: Climate Action Planning, Transportation and Land-use, Greenhouse Gas Emissions Mitigation, Adaptation, Climate Resilience

TRACK 4 - POSTERS

SUSTAINABILITY EVALUATION OF CLIMATE CHANGE ADAPTATION POLICIES AND TECHNOLOGIES; THE CASE OF THE BUSAN METROPOLITAN AREA IN KOREA
Abstract ID: 230
Poster

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Response to climate change is a concept that includes mitigation and adaptation. Climate change adaptation is needed to reduce the negative effects that are currently occurring or are expected to occur in the future, and to make the most of opportunities. Therefore, the goal of climate change is to reduce vulnerability caused by climate change and at the same time improve our ability to adapt to climate change. However, many efforts to adapt to climate change remain short-term and technical fixes for risk, which can have negative socioeconomic ramifications across communities. This can be called "maladaptation", and to prevent it, climate change adaptation should be oriented toward sustainable development. Specifically, climate change vulnerabilities should be reduced, or adaptive technologies and strategies should contribute to improving regional resilience. In response, this study evaluates the sustainability of the second set of climate change adaptation measures in the Busan metropolitan area in Korea.

This study used a plan assessment method that enables quantitative digitization and objective evaluation to assess the sustainability of 「the Second Climate Change Adaptation Plan」 in the Busan metropolitan area in Korea. In addition, the indicators for sustainability assessment were selected as assessment indicators by compiling the United Nation's strategic development goals (SDG) and the Korean SDG (K-SDG) indices, utilizing "gain and loss scores" to take into account both the positive and negative effects of climate change adaptation and technology on the local community. This study aims to measure the sustainability of technology and climate change adaptation in the Busan metropolitan area from two perspectives. First, the composite score of the impact degree was derived using the ranking and score method to assess the overall impact of the adaptation measures. Then, the assessment was conducted using the coverage score to derive not only the overall score but also how much the sustainability index was considered in terms of impact.

As a result of assessing the 30 climate change adaptation policies and technologies of the Busan metropolitan area, the implementation of projects to regenerate old and vulnerable areas of the national territory and coastal areas scored highest in the overall score: the forest sector was restored first utilizing ecological experience, then the national coastal areas were established to prevent flooding and tidal damage. Next, the detailed index shows that the implementation of projects to regenerate old and vulnerable residential areas of the national territory, the restoration and ecological experience of the forest

ecosystem sector, and the creation of energy self-sufficient islands and energy towns in the industrial energy sector, all affect various indicators. To sum up the results, it was found that among the measures and technologies for adapting to climate change in the Busan metropolitan area, the policy that most significantly affects its sustainability is the promotion of projects to regenerate old residential areas and vulnerable areas.

The sustainability assessment technology used in this study to enhance socioeconomic capabilities is different from other assessment techniques in that the assessment was carried out simultaneously by utilizing quantitative indicators in addition to qualitative assessment, which is a common method for evaluating sustainability. The assessment was performed by integrating economic, social, institutional, and environmental sectors. It is also meaningful that policies with qualitative characteristics have been quantitatively evaluated to facilitate communication among various stakeholders.

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Key Words: sustainability, climate change adaptation, plan evaluation

A STUDY ON FLOOD PREDICTION MODEL USING MACHINE LEARNING: FOCUS ON BUSAN METROPOLITAN CITY
Abstract ID: 778
Poster

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The degree of disasters brought about by natural calamities is increasing globally because of the intensified climate changes. In Korea, most of the natural disasters consist of storm and flood damage from typhoons and heavy rains. In addition, because of its topographical characteristics, where more than 70% of the country is mountainous, there is an increase in runoff in the urban areas in case of localized heavy rains, leading to great damage. There are various causes and types of urban disasters, and because the population is focused on urban areas, residential and industrial facilities have become so highly developed that in cases of disasters the damage is largely expanded, leading not only to property damage and loss of lives and also a total paralysis in urban functions. The "flood damage in urban cities" can be seen through damages incurred in the lives, physical bodies, and properties due to external floods, which are better known as regular floods, and internal floods, which occur when the sewage and other drainage systems cannot release storm water.

In recent times, flood damage in urban cities has worsened because of several factors, such as the increase in abnormal rainfall due to climate change and localized heavy rains, along with the urbanization from economic development. This gives rise to the need for comprehensive urban planning and preventive strategies. To reduce the flood damage in urban cities, there should be spatial structure designs and land use planning to evaluate the flood risk. However, as flood damage is caused by various factors, it is difficult to develop a predictive model. Therefore, the purpose of this study is to develop a flood

prediction function using machine learning and to establish a flood risk map.

This study used the 2014 Busan Metropolitan Flood Information Data, and the information was analyzed after dividing the grid on a 30m×30m scale. The actual analysis used four machine learning techniques such as the Decision Tree, Random Forest, Naïve Bayes, and Support Vector Machines using R-programming to develop the flood prediction model. In addition, the study developed a flood risk map using the Jenks Natural Breaks Classification of ArcMap and categorized and visualized the risks into five levels.

After comparing the four models, it was shown that the Random Forest model was the most appropriate for flood predictions. The weights of the variables were deduced from the importance of their contribution to the model, and the values from the results were used to develop the flood risk map. The results showed that the districts with the highest risks were Jeonggwan-eup, Gijang-gun, Geumjeong-gu, Dongnae-gu, and Yeonje-gu. The overall findings, which showed the districts' similar results when compared to areas with actual flood damage, revealed that the application level of the flood risk map is high. The results of this study will lead to the avoidance of inappropriate developments in areas with flood risks and induce developments in areas with low risks. In addition, the results of the study can be utilized for future guidelines on flood risk evaluations.

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Key Words: Urban Flood, Big Data, Machine Learning, Random Forest, Decision Tree

AN EVALUATION OF LOCAL CLIMATE CHANGE ADAPTATION PLANS ADDRESSING NATURAL DISASTER MITIGATION IN KOREA
Abstract ID: 801
Poster

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Climate change risks globally occur and threat human lives and activities. Moreover, their impacts are expected to become more severe and intense in the future. To deal with the negative impacts of climate change, 'Adaptation and Mitigation' to climate change is considered as an important pillar for response to climate change (IPCC, 2014). Many countries are working to respond to climate change, as part of, they are establishing climate change adaptation plans. In Korea, the government has legally mandated to establish climate change adaptation plan in 2010 (Kim & Yun, 2014). A total of 212 local climate change adaptation plans were adopted, as of 2017. The general goal of the climate change adaptation plan is to build a safe society and reducing the risks from climate change. This adaptation plan is recognized as an essential way to reduce the potential impacts and damages from climate change. The purpose of this study is to evaluate the quality of local climate change adaptation plans in Korea. Many previous studies evaluating the plan quality; however, a few researches have been conducted regarding the quality of climate change adaptation plans in Korea. This study identifies the current status of the climate change adaptation plan and whether each plan has been established to respond appropriately to potential climate change risk impacts, especially natural disaster impact.

The total of 212 local climate change adaptation plans across the Korea are analyzed and compared. Before conducting the plan quality evaluation, plan content analysis procedures were employed to determine whether certain characteristics or criteria set out in advance are present in the plans (Berke & Godschalk, 2009). We develop several indicators to conduct contents analysis and plan quality evaluation. Plans are evaluated using a coding protocol consisting of such indicators based on six plan quality principles: fact base, goals, policies, public participation, coordination and implementation & monitoring. This study examined the regional differences in priorities of natural disaster risk reduction strategies to implement through spatial analysis. Moreover, this study examines the relationships between actual disaster damage and the local adaptation planning status and whether climate change adaptation plan affects reducing the disaster damage caused by climate change impacts.

The results of the analysis show that the local climate change adaptation plans are mainly focused on the improvement and reinforcement of physical structures to prevent damage from typhoon and heavy rain rather than socio-economic vulnerability mitigation. This study suggests that in order to strengthen local climate change adaptation plans, more policies managing socioeconomic or environmental vulnerability and enhancing public participation and cooperation should be further considered in the plan. This study would contribute to the establishment of more appropriate climate change adaptation plans in the future, considering the regional characteristics that may affect the plan quality.

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Key Words: Climate change, climate change adaptation plan, plan quality, contents analysis

AN EXAMINATION OF SEA-LEVEL VISUALIZATION TOOLS USED IN LAND USE PLANNING COMMUNICATION REGARDING MANAGED RETREAT
Abstract ID: 853
Poster

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In the United States, nearly five million people, living in 2.6 million houses, are within four feet of the high-tide sea level. This is below the 100-year flood line for most of the affected areas. Scientists are currently predicting that sea levels could rise another two to five feet this century. Coastal adaptation strategies can mitigate disaster risks, reduce socioeconomic vulnerability, and build social-ecological resilience in coastal zones. Three major coastal adaptation strategies are protection, accommodation, and managed retreat. Recently, Managed retreat has become an acceptable approach to address sea-level rises by some governments across the world (Esteves, 2014). Public participant is important component of the managed retreat. This research addresses the role of visualization in communicating with public about the process of managing retreat.

Managed retreat is a long-term adaptive strategy for planning land use changes to coastal areas (Fouqueray et al., 2018). Hino (2017, p. 364) defines it as "the strategic relocation of structures or abandonment of land to manage natural hazard risks." Managed retreat has several components: coastal planning, buy-out programs, regulations of allowed development types, and restoring habitats (Maygarden et al., 2019). To support land use planning and managed retreat processes, climate visualizations are powerful decision-making tools, which can increase public participation and address climate change (Sheppard, 2012). With visualization, participants in the planning process can improve their understanding of sea-level rise related issues. For example, people that are responsible for key decisions will not be experts in all aspects of climate change and its impacts. These people therefore need to be informed on what the scientific data says in a way that is easier to understand, which will enable more informed decision making processes. However, there is a lack of information regarding the effectiveness of climate visualizations in regard to managed retreat, when used in conjunction with land use planning communication. This research aims to fill this critical literature gap.

This poster will report the results of a survey of tools used to visualize the effects of sea-level rise. It will contain detailed information on various categories, functions, and designs of visualization platforms, such as Adaptation Tool Kit Sea-Level Rise and Coastal Land Use, Sea Level Rise Viewer, When Sea Levels Attack, Mapping Choices, and EarthTime Sea-Level Rise Tool. The results will be reported in a table categorizing and comparing the tools.

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Key Words: Land use planning, Sea-level rise, Visualization, Managed retreat, Communication

RESEARCH ON ECOLOGICAL SPACE MANAGEMENT AND CONTROL OF MOUNTAIN CITY BASED ON ECOLOGICAL SENSITIVITY EVALUATION -- TAKE FULING, CHINA AS AN EXAMPLE
Abstract ID: 868
Poster

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Urban ecological space is the natural basis of urban survival and the ecological guarantee for the coordinated development of urban and rural areas. With the rapid development of urbanization, the scale of population and constructive land in many cities are constantly expanding, which poses a greater threat to urban ecological space, especially that in mountain cities with severe ecological problems. Under the background of "Ecological Civilization Construction " and "Beautiful China Construction ", how to protect the mountainous urban ecological space while realizing the economic development is an urgent problem for urban planning in the new era. Ecological sensitivity evaluation, as an important part of ecological environment impact analysis, can analyze and predict the possibility of regional ecosystem imbalance and environmental problems, which provides scientific and effective basis for urban ecological space management and control.

Fuling City, located in the transition zone between "East Sichuan parallel valley area" and " Middle area of dalou mountain and Wushan mountain " in the east of Sichuan Basin, is full of typical mountain characteristics. In addition, Fuling City，with forest area of 130100 hm2 and forest coverage rate of 45.2% (China's average is 22.96%), has good ecological conditions and high ecological protection value ，and the Yangtze River and Wujiang River pass through.

On the basis of combing the relevant theories and practices of ecological sensitivity evaluation, this paper selects five factors，including terrain sensitivity, soil erosion sensitivity, rocky desertification sensitivity, ecosystem sensitivity and acid rain sensitivity，to Construct a comprehensive evaluation system of ecological sensitivity，determines the weight of each factor by AHP method, and the individual factors are weighted and stacked through the GIS platform to obtain a comprehensive ecological sensitivity evaluation result.

The results show that Fuling City presents an ecological sensitivity pattern of "two zones, one area and many points" as a whole, which can be divided into four levels: ecological highly sensitive area(14.15%), ecological moderately sensitive area(38.22%), ecological low sensitive area(32.38%) and ecological non sensitive area(12.53%). The higher the ecological sensitivity is, the more vulnerable the ecosystem is and the more it needs to be protected and controlled.

Finally, this paper divides the urban ecological space of Fuling City into four ecological function regions, including 1)the metropolitan environmental control ecological function region, 2)the Industrial ecological function region along the river, 3)the agroforestry ecological function region of low mountain , 4)the ecological function region of mountain and forest tourism. In addition, this paper puts forward different ecological function orientation and key points of ecological environment protection, and points out different management and control strategies.

This research highlights the differences from plain cities from selected cases, evaluation factors, and control strategies, aiming at providing a reference for the ecological space management and control of other mountain cities.

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Key Words: Ecological Sensitivity Evaluation, Management and Control, Mountain City, Ecological Space, Fuling

ENERGY EFFICIENCY OR QUALITY OF LIFE: THE PARADOXICAL EFFECTS OF MEXICO'S GREEN MORTGAGE PROGRAM
Abstract ID: 940

Poster

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Under the premise of improving housing for the poor while addressing the challenges of climate change, Mexico put in place a housing mechanism known as the Green Mortgage Program (GMP) to facilitate access to energy efficiency devices within its public housing sector. Today, the GMP is the largest and fastest growing effort to increase residential energy-efficiency in low-income households in the world. Since its implementation in 2011, it has facilitated the incorporation of energy efficiency appliances into more than three million dwellings in Mexico (Giottonini Badilla, 2018). The GMP has been presented as a win-win strategy to overcome barriers against the adoption of energy efficiency at the household level, namely up-front costs, lack of information, and availability of technologies among others (Hirst & Brown, 1990). Its apparent success has been well recognized but scarcely evaluated.

Through a case study of the implementation of the GMP in a city of Northern Mexico, I evaluate the outcomes of the GMP by comparing its performance to traditional households of similar characteristics. The analysis uses energy consumption data from electric utility bills and an original survey applied to 300 residents of GMP and traditional households, and it highlights three major findings: Firstly, GMP households are using the same or more electricity than their traditional, non-GMP counterparts. Consequently, the program is also not achieving its climate change mitigation efforts. Secondly, without reduction in electricity consumption, GMP households have not been able to achieve the expected improvements in living conditions as dictated by the program. Thirdly, the program increased the cost of housing by approximately 5-10% by incorporating the cost of the devices into the mortgage debt, therefore making housing less affordable. This result align with a similar study by Davis, Martínez & Taboada (2020). Based on these results I conclude that the GMP has been an abrupt failure in its two main goals: reducing energy consumption and improving the quality of life of low-income households.

However, the GMP has been successful in other areas at a larger scale: it has accelerated the growth of a market for energy efficiency appliances in Mexico. It has promoted the rapid creation of new standards and regulations to guide these changes, and has changed the perception and acceptance of the concept of energy efficiency in Mexican households. The paradoxical effects of the GMP lie in the fact that, while the program has provided these benefits for energy efficiency in Mexico, it has done so by imposing a significant financial burden on the lowest-income households.

These results provide valuable information to urban planners and policymakers about the creation, implementation, and evaluation of housing, energy, and climate change related policies; and also point to the urgent need to incorporate measures of quality and equity in the provision and evaluation of public housing initiatives.

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Key Words: Energy efficiency, Low income housing, Evaluation, Climate change mitigation

SOCIO-ECOLOGICAL NETWORK ANALYSIS OF EXISTING WATERSHED PLANS IN THE UPPER PONTCHARTRAIN BASIN
Abstract ID: 961
Poster

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Louisiana's efforts to create watershed planning under the Louisiana Watershed Initiative (LWI), suggests the need to evaluate existing systems of governance at the watershed level, including plans, policies, and collaboration. This is often accomplished through plan evaluation methods. However, these do not have mechanisms to measure relationships among different types of plans or the interrelationship of plans in different jurisdictions within the watershed. To address this gap in Upper Pontchartrain Basin (USGS Hydrologic Unit 0807) and its sub-basins, we will conduct a comprehensive review of environmental hazard mitigation plans and evaluate key planning governance networks within this watershed using network analysis methodologies (Sayles, et al., 2019).

The first step is collecting and inventorying all historical and present planning documents and ordinances in the Upper Pontchartrain parishes and municipalities. These documents include Comprehensive/Master Plans, Hazard Mitigation Plans, and Coastal Zone Management Plans. We will evaluate them using a "Plan Evaluation Coding Protocol" that was created based on an extensive literature review of existing plan evaluation tools, the Emergency Management Agency's(FEMA) Community Rating System (2017), and Coastal Protection and Restoration Authority's (CPRA) Flood Risk and Resilience Program (2017). Will use social network analysis and document coding software to address three specific plan elements and code them as networks: 1) fact base, 2) policy tools and strategies, and 3) inter-organizational coordination and capabilities (Brody, 2008; Lyles, 2014). Fact base includes practical information that can help identify if crucial hazard problems are identified and consistent across jurisdictions. Policy, tools, and strategies are the structural and nonstructural controls outlined in plans that affect location and type of development. Coordination and capabilities involve collaboration and conflict management between local, parish, and regional governments. Finally, we will layer the networks onto an ArcMap to visualize the relationships in the watershed.

The results of this study will illustrate shared watershed planning and policy networks, which will allow for preliminary observations about gabs in our coastal hazards planning networks. Our method presents a rapid means of assessing, analyzing, and visualizing existing patterns and gaps in policy and collaboration in the Upper Pontchartrain Basin.

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Key Words: socio-ecological, watershed, regional, network, flooding

INTEGRATING ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND LIFE CYCLE ASSESSMENT (LCA) PROCESSES TO MOVE THE BIOECONOMY FORWARD FOR PLANNERS

Abstract ID: 1009
Poster

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International commitments to lower greenhouse gas emissions can benefit from renewable energy development and implementation aimed at increasing the proportion of renewables in the energy supply. A low carbon future requires precision in the ways we measure potential environmental, economic and social impacts of bioeconomy programs, plans and projects. Current tools utilized by scientists and engineers working in this space include Life Cycle Assessment (LCA). Opportunity exists for the Environmental Impact Assessment (EIA) tool to integrate with the LCA process ensuring an open, balanced process to strengthen quality and credibility within Canada's bioeconomy. Life Cycle Assessment (LCA) has been identified in the literature as a promising tool to increase the performance of environmental assessments at different steps in the Environmental Impact Assessment (EIA) process as a tool for better decision making (Larrey-Lassalle et al., 2017; Židoniene & Kruopiene, 2015; Morero, Rodriguez, & Campanella, 2015; Manuilova, Suebsiri, & Wilson, 2009). The integration of EIA and LCA processes posit a key theoretical argument of increasing meaningful public participation to actualize fundamental principles of democracy and strengthening a program, plan or project's credibility. The LCA/EIA integrated process demonstrates a capacity to enhance social learning about the environment and multiple objectives, values and needs of participants through increased meaningful public participation. The integrated process is channel for the public to participate directly in the decisions that affect them – contributing to participatory democracy and increased bioeconomy and sustainability literacy.

Research Questions:

The research addresses the following questions based on the fact that municipalities and municipal planners are at the critical interface where action can be taken to reduce GHG emissions: How can planners integrate LCA and EIA processes to address GHG emissions? Can integrated EIA/LCA facilitated stakeholder workshops and participatory mapping exercises bring together community actors to develop plans to improve bioeconomy literacy and help move the low carbon economy forward? Can conservation and planning incorporated into the components of LCA/EIA result in multiple options to develop and redevelop our cities and apply new technologies?

Methodology:

This research is conducted through a five step process which includes:

1. Literature review;
2. Review of greenhouse gas emission reduction model outputs;
3. Review/adaptions of public participation models;
4. Review of current LCA/EIA processes;
5. Development of integrated EIA/LCA process.

Relevance to planning scholarship: This research will contribute to information required by planners and decision-makers with regard to descriptions of proposals, conditions and characteristics of the environment, applicable planning policy and regulatory objectives as well as the holistic identification of potential social, economic and environmental impacts. Integration of the LCA/EIA processes, guiding and operational principles, community values, and visions for the future can propel the transition to a low carbon economy and increase sustainability literacy. Planners can use this research to inform future practice of assessment tools.

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Key Words: assessment, process, participation, emissions, bioeconomy

BROWNFIELD DEVELOPMENT AND ENVIRONMENTAL JUSTICE: AN EQUITY ANALYSIS OF REMEDIATION PROGRAMS IN MINNESOTA
Abstract ID: 1062
Poster

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Researchers and activists have documented a long history in the U.S. of communities of color and low income areas experiencing a disproportionate burden of pollution and toxic wastes. In response, some state and local pollution control programs have identified areas of environmental justice (EJ) concern. These areas are typically defined as having more than 50 percent residents of color or more than 40 percent of households with incomes less than 185 percent of the federal poverty level. The government has committed to establishing inclusive decision-making, reducing disparate environmental harm, and supporting these areas with intentional policies and resources.

Other studies have shown the promise of brownfield development as a means to environmental and economic improvement. Brownfield remediation, or the process of decontaminating uninhabitable toxic sites, can help open up new investment opportunities in underinvested areas. Given that under-resourced communities tend to have greater exposure to brownfields, it's possible that targeted funding for these areas would have a considerable social and economic impact.

Drawing on a series of remediation grant programs in Minnesota as a case study, this research investigates the extent to which the brownfield remediation program includes EJ areas. Using GIS, I map the spatial correlation between funded projects and areas of EJ concern.

Next, I explore the criteria for grant applications and analyze the compatibility of environmental justice objectives and project viability assessments. This involves content analysis and comparison of Request for Proposal (RFP) guidelines, Response Action Plans (RAPs), and the environmental justice framework and implementation reports. I argue that the grant-making model precludes many environmental justice areas due to their structural and economic limitations and the narrow project selection criteria.

Finally, I discuss some of the consequences of brownfield development in environmental justice areas. Brownfield development is situated within the larger context of green gentrification and thus may exacerbate existing social and economic inequalities. While brownfield development is a potentially important tool for communities bearing the burden of toxic waste, this research adds to the growing body of literature analyzing its accessibility and equity dimensions. Further research could expand on this preliminary study by investigating the opportunity costs of failing to invest in environmental justice areas.

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Key Words: environmental, justice, brownfield, development

EXAMINING ENVIRONMENTAL EQUITY BY PUBLIC PARK PROVISION IN POST-INDUSTRIAL CITIES: A CASE STUDY IN HARTFORD, CONNECTICUT, USA

Abstract ID: 1076
Poster

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Regular physical activities help reduce the risk of obesity, diabetes and cardiovascular disease for both adults and children. In addition, outdoor physical activities by contacting with nature benefit mental restoration, stress relief and overall well-beings. Outdoor physical activities in urban area largely relies on urban public parks, which provide ecosystem services and social integration spaces. Morerover, public parks, without requiring entry fees, are part of public-invested urban green space and environmental resources. Given all these benefits public parks have in cities, it is essential to have parks accessible to all populations equally. However, public parks are usually not evenly distributed within the city, and different cities have different composition of demographics and geographical context. Such park provision disparities will, in turn, exacerbate the health disparities.

Although there are a handful of studies examining the park distribution and environmental injustice issues in U.S. large cities, few studies have examined post-industrial cities, which are always identified by urban decay and decentralization issue. Nor is there literature studying park provision in Connecticut cities because Connecticut is less urbanized, less populated and has relatively lower poverty rate. However, post-industrial cities in Connecticut such as Hartford, New Haven, and Bridgeport have higher-than-average poverty rates and high health disparities in populations with asthma, diabetes, and obesity. In this regard, examining the spatial distribution of public parks and its relationship with demographics and social-economic drivers in these cities will inform future land use planning and decision-making process.

This study examined the spatial distribution of public parks in Hartford, CT for populations with different socio-economic status and ethnicity using three parameters: park proximity, park acreage, and park safety. Park proximity was measured by generating what is called Park Service Areas in Geographic Information System (GIS) based on the city street network. Using Geographically Weighted Regression model, we analyzed the difference of park provision by demographics and housing condition variables across 96 census block groups in Hartford, CT. Main findings include that African Americans have closer proximity to public parks than White or Hispanic populations, and block groups with lower median housing values appear to be in closer proximity to the public parks. Hispanic population has less acreage of available parks and more people per park acre. In terms of park safety, the population below poverty line faces higher crime rates in the area around their accessible parks, while owner-occupied housing dominant blocks has less crimes in and around their accessible parks. The results show Hispanic populations are more likely to have park congestion and populations with poor economic condition are less accessible to safe parks.

Future resources for public park development should be invested on improving park safety and adding parks in Hispanic-dominant neighborhoods by transferring vacant lots into green spaces. Public park legacies from 1930s, which remains today, are likely to contribute to the relatively less uneven park

distribution in Hartford, compared with the conditions in other U.S. cities that have considerable disparities among ethnic groups. Future studies are encouraged to examine the spatial-temporal change of public park legacy in Hartford to better inform the public park preservations and expand the scope of research on environmental justice to the Metropolitan Statistical Area (MSA) level.

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Key Words: Public Parks, Environmental Justice, Spatial Analysis, Post-Industrial Cities

CHILD-FRIENDLY COMMUNITIES: SPATIAL DISPARITY AMONG SCHOOL NEIGHBORHOODS IN TERMS OF ACCESS TO CHILD-FRIENDLY OPPORTUNITIES
Abstract ID: 1206
Poster

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The influence of built environment on health and related behaviors, such as physical activity (PA), of children is well established. Children's daily engagement with the outdoor environment not only promotes healthy PA, but also facilitates their social, cognitive and emotional development (Duncan, Ziol-Guest, & Kalil, 2010). The existing literature suggests that PA levels are higher among residents with activity-friendly environments. The gradual decline in children's PA over the years has led to an increased focus on the provision of better, child-friendly physical environments, especially in residential neighborhoods (Brown, 2019). However, the potential role of spatial inequality in terms of access to child-friendly environments in the school neighborhood in promoting or restricting children's PA engagement has not been fully examined (Broberg, Salminen, & Kyttä, 2013; Kyttä et al., 2018).

This study aims to examine spatial disparity in terms of access to PA opportunities or child-friendly environmental features among elementary school students. The primary objectives of the study are 1) to identify child- and family-friendly destinations; 2) to examine the association of child-friendly environments with school-level spatial inequalities in racial, economic, academic and health indices.

The study focuses on 77 elementary schools located in school attendance zones in the Austin Independent School District (AISD), Texas. The individual addresses of 8,053 sample students from the schools (average sampling rate of 0.64 from 4th and 5th grade students) were geocoded and used for school-level analyses. A list of child and parent-supportive destinations was created based on the existing literature on child-friendly environments/cities, and the evaluation of business types was categorized in the North

American Industry Classification System (NAICS). The association between child-supportive environments with racial, economic, academic and health indices at the school-level is examined using bivariate correlation analyses and spatial regression models such as geographically weighted regression model. Austin has a variety of destinations that can promote or restrict child development. The defined child- and parent-friendly destinations are categorized into seven domains: recreational; restaurant and food retail; other retail; health; social, cultural and educational; entertainment and active travel destinations. The preliminary results show that the restaurant and food retail category is positively associated with racial and economic indices, indicating that a higher percentage of Hispanic and economically disadvantaged students tend to have more food-related shops around them. Further analyses are required in order to break down healthy/unhealthy options.

As a first step toward developing evidence-based guidelines for child-friendly communities, this study defines the multiple contexts in school neighborhoods (school buffers and school attendance zones) in order to examine the mismatch between SES and available and accessible environmental supports. In addition, the differences between child-friendly and parent-friendly destinations as well as the discrepancies in accessibility to free versus paid facilities are discussed. The study supports future research aimed at creating or retrofitting the school neighborhood to promote healthy child development by encouraging child-friendly communities where children grow and develop holistically.

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Key Words: school-aged children, child-friendly destination, accessibility, socioeconomic vulnerability, spatial disparity

POST HARVEY RESILIENCE: A CASE STUDY ON GREATER HOUSTON BUYOUTS
Abstract ID: 1223
Poster

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The Greater Houston region has a chronic flooding problem due to population growth and a sprawling built environment. Government practice to mitigate repeated losses due to extreme flooding has been to buyout homes and properties to improve flood resilience of communities. Residents who have experienced extreme flooding are more likely to agree to a buyout than those who have not, even though they remain at risk of inevitable flooding due to population growth and urban expansion (Robinson, et al., 2018). Recent literature suggests that the flood buyout process may produce patterns of inequity, resulting in the displacement of people of color from areas with high proportions of white and affluent residents (Mach, et al., 2019). Other research indicates the possibility of a white entitlement to buyout programs that inhibits success of disaster resilience for people of color (Benincasa, 2019).

To determine if the Houston area can become resilient to flood losses through a buyout program, we obtained buyout data for the Greater Houston region and mapped those buyouts using Geographic

Information Systems (GIS). We compared the buyout locations to maps of the social vulnerability index, demographics, access to food, and presence of floodplains for the counties that experienced extreme flooding in Hurricane Harvey and had also participated in buyouts from 1997-2017.   Our analysis indicated that people of color have a greater risk of being impacted by floods. It also indicated that buyouts in Greater Houston target marginalized groups more so than the white populations. With the certainty of more frequent and intense flooding, our findings reveals a need for policy revisions in the buyout process for the region to achieve resilience.

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Key Words: Resilience, Flood, Buyout, Housing

AN ANALYSIS OF PUBLIC RISK PERCEPTIONS AND COPING BEHAVIORS FOR VARIOUS CLIMATE CHANGE RISKS IN KOREA
Abstract ID: 1269
Poster

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Climate change risks are increasing globally, and they are becoming more unpredictable. The Fifth Assessment Report of the IPCC highlighted the importance of climate change adaptation to reduce the climate change risks (IPCC, 2014). In Korea, the national and local governments established the implementation plans for climate change adaptation to increase public awareness and strengthen their adaptive capacity. To effectively manage and reduce the risks from climate change, it is necessary to understand how people perceive the problems caused by climate change risks and what are the driving factors for adaptation actions (Harvatt et al., 2011). Many previous studies have analyzed the relationship between overall climate risk perception and response to climate change, but there is a lack of research on the relationship between risk perceptions and coping behaviors for specific risks such as heat waves, flood, and droughts. This study examines public perceptions and coping behaviors for current and future climate risks including heat wave, fine dust, ozone, drought, landslide, wildfire, sea level rise, heavy snow and flood.

Based on the survey data from 1,200 people, we examine the variations in public perceptions depending on the type of climate risks. This study analyzes the relationship between public perception of climate change risk and behavior for climate change adaptation and damage reduction using structural equation modeling (SEM). Moreover, this study conducts comparative analysis of the impact of risk and education experience, geographic characteristics, and socio-economic characteristics on the risk perception and coping behavior for various climate risks.

The results indicate that risk perceptions for all climate change risks tends to increase over time, and the level of risk perception and their coping behaviors vary based on climate risk characteristics. The results also show that variables affecting risk perceptions and the effects of risk perception on coping behavior

vary from the type of climate risk. This study could provide useful information for the development of climate change adaptation plans and policies for enhancing climate change adaptive capacity.

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Key Words: Climate risk, Risk perception, Coping behavior, SEM, Korea

TRACK 5 – GENDER & DIVERSITY IN PLANNING

TRACK 5 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS FOR THE SESSIONS

PLANTATION (HACIENDA) FUTURES IN TEXAS, JAMAICA, AND MEXICO: PLACEMAKING IN THE CONTEXT OF BLACK (UN)VISIBILITY AND ECONOMIC COLONIALITY
Pre-Organized Session 103 - Summary
Session Includes 472, 473, 474

SWEET, Elizabeth [University of Massachusetts, Boston] betsy.sweet@umb.edu, organizer

Black erasure is a thing, but it happens differently in different places. Time, space, and relationship considerations, absent in the philosophical basis of Western thinking (Dussel 2011; 2012; Dues and Fornazzari 2002), intervene and influence how erasure happens and how it is overcome. McKittrick (2011; 2014) uses the term (un)visible to describe erasure. By doing so she suggests that what is visible to some is (un)visible to others thereby removing the permanence and power of those who attempt to erase. At the same time ongoing coloniality (Quijano, 2007), covers up and embezzles the value(s) of Blackness and Black bodies. The ways that black diasporic people experience and respond to erasure and colonial economies is important to understand as planners attempt to retool and reimagine planning practice. Using cases from Texas, Jamaica and Mexico, these panel provide an opportunity to not only see how (un)visibility and coloniality maneuver across the Black diaspora but also how a Black sense of place is a site for witnessing traditions of grassroots planning, and how those practices might inform the reimagination of planning praxis towards alternate futures.

Objectives:

- Query the links between Black erasure and colonial economic structures
- Undo forgetting of Black power and Black strategies of land tenure
- Link slavery and convict leasing to contemporary economic realities

MORENOS/AS AND THE MEZTISO MYTH: SEEING BLACK POWER IN MORELOS, MEXICO
Abstract ID: 472
Abstract within Pre-Organized Session 103

SWEET, Elizabeth [University of Massachusetts, Boston] betsy.sweet@umb.edu, presenting author

Blackness in Mexico has been made (un)visible through a myriad of policies, practices and dominant cultural norms, yet the presence of Africa and its legacies persist. What are the unspoken and buried artifacts of Black culture, society, and political power that are being resurrected and claiming space? My ethnographic work in Morelos, a state with many ex-haciendas where sugar cane is still a principal crop, exposes Blackness in plain sight. Traditional Chinelo dancers with dreadlocks and the famous march of the widows in which men dress as bereaved women at the city of Yautepec's carnival, are glimpses into a rejection of Eurocentric colonial values. Morenos/as at the kitchen table laughing and joking in the face of

discrimination and violence poke fun at the dominant meztiso myth. The economics of survival in the face of Black erasure propel an emerging story that Africa is not the third root of Mexico, but indeed the first root. Embracing Africa's rhizomic presence in Mexico enables us to employ Tiffany King's use of Black Fungibility which she describes as an ". . .open-ended analytic accounting for both Black abjection and Black pursuits of life in the midst of subjection" (King 2016:1024). Although Black bodies in Mexico are principally seen as manual labor or as a commodity, this paper argues that the spaces of fun and vibrant laughter are in fact an important part of creating visibility and geographies of possibilities ". . . with the capacity to transform conditions of subjection" (King 2016: 1024), and behold Black power.

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Key Words: Spaces of Struggle, Black Mexico, (un)visible, Colonial eonoimcs, Black Power

HAUNTING AS AGENCY: A CRITICAL CULTURAL LANDSCAPE APPROACH TO MAKING BLACK LABOR VISIBLE IN SUGAR LAND, TEXAS
Abstract ID: 473
Abstract within Pre-Organized Session 103

ROBERTS, Andrea [Texas A&M University] aroberts318@tamu.edu, presenting author

This paper contextualizes the most recent discovery of 95 forgotten graves of incarcerated laborers at a public school construction site within ongoing tensions around public history, race, and development in Sugar Land, Texas, a Houston-area bedroom community. Unearthed along with the graves is the state's long history of Black labor exploitation, from enslavement to convict leasing to employment with Imperial Sugar. In this article, I engage the haunting of Black laboring bodies in the landscape from the perspective of both that of a researcher and former resident of Fort Bend County confronted with the purposeful forgetting of Black geographies, bodies, and lives. I expose through critical analysis of government documents, online digital exhibits, maps, photos, and autoethnographic recollection of the area, the haunting of Black laboring bodies in not only the site of burial discovery but also two sites within the Sugar Land cultural landscape: Mayfield Park and the Imperial Sugar Refinery. I argue developers and government agencies perpetuate a mythic local history that, until the discovery of the 95, allowed them to disassociate itself from Sugar Land's history of Black labor exploitation before its incorporation as a city. The 95's haunting allows for an inventive awareness of the Black laboring bodies and thus redefines the cultural landscape rooted in plantation logics as a Black geography. I conclude with a discussion of the ways Black laboring bodies' haunting creates a space for a critical cultural landscape solution.

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Key Words: Historic Preservation, Community Building, Cultural Landscapes, Social Planning, African American

THE PLOT: SUSTAIN, REFUSE, PLAN
Abstract ID: 474
Abstract within Pre-Organized Session 103

GOFFE, Rachel [University of Toronto] rachel.goffe@utoronto.ca, presenting author

Contemporary talk about Jamaica reverberates around ongoing crises—of the economy, politics, safety and civility, a discourse in which informal settlements appear as barriers to development. In 2008 an elected official declared that one-third of the population are illegal squatters. While scholarship about informal settlements elsewhere tends to understand displacement as a project of the neoliberal state, the enormity of the number who are now deemed illegal begs the question: how did so many Jamaicans come to occupy land through durable yet insecure tenure, and how does policy to transform the regulation of land result in reconfiguring Black life? Through ethnographic research in an evicted community, this paper shows how the boundary around the formal economy is reconfigured, putting into question longstanding practices known as land capture. Rereading Jamaican historiography, the paper argues that this relation comes into being through the production of a Black labor force, self-sufficient and yet ready-at-hand, sustained through small parcels of land that Sylvia Wynter dubbed the plot. Not without land, but without ownership, Black Jamaicans have imbued the plot with itineraries that exceed sustenance. Following Wynter, the plot is read for multiple agenda: the plot of land, the plot to rebel, and the plot as alternative narrative. This work provides a generative framework for interrogating postcolonial state formation in relation to making the boundary of the "informal," an edge that postcolonial and Black Atlantic life straddles and reworks.

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Key Words: racial capitalism, black epistemologies, Caribbean studies

PLANNING BEYOND THE GAYBORHOOD
Pre-Organized Session 135 - Summary
Session Includes 663, 664, 665, 666

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Ghaziani (2019) has argued that too often the default conceptualization of queer urban spaces is the gayborhood. In reality it seems same sex partners are nearly everywhere according to US Census data from 2010 that shows same sex partners (and married same sex couples) residing every type of census district (urban, rural, peri-urban) in every state. While Collins (2004) linear model of gayborhood development may have accurately described the trajectory of gay residential patterns in the late 20th century, this model does not provide much useful information for planners seeking to ensure safe spaces for the broader LGBTQ community both in the United States and elsewhere. The papers in this session

explore alternative ways to conceptualize the development of queer spaces and the businesses and planning strategies that support them.

Objectives:

- Understand planning needs of the LGBTQ Community
- Improve planning outcomes for gayborhoods

CENTRIPETAL AND CENTRIFUGAL FORCES AND QUEER SPACES
Abstract ID: 663
Abstract within Pre-Organized Session 135

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Ghaziani (2019) has argued that too often the default conceptualization of queer urban spaces is the gayborhood. The most visible gay villages that emerged in the late 1960s have attracted a good deal of academic research even though those spaces are mostly populated by white gay men. This narrow focus on one type of neighborhood has frequently eclipsed research on other types of LGBTQ areas as well as other geographies beyond the global north. For instance, Collins (2004) used the example drawn largely from the Soho neighborhood of London to argue for a linear stages model from marginal area to emergence then expansion and diversification, and finally to integration. In contrast, Ruting's (2008) study of gayborhoods outside Sydney suggests that the linear model is not always useful.

This paper critiques the linear model of queer spaces and seeks to develop a more robust model that might be potentially useful across the north-south divide. Urban spaces are always subject to a variety of forces and in the case of gayborhoods we suggest that each such place might be usefully analyzed in terms of the social, economic, and political pressures that act upon it. These influences might be described using a basic conceptual framework derived from physics: centripetal and centrifugal forces. This framework allows for the identification of centering (centripetal) and decentering (centrifugal) forces and the interplay between these forces is likely to be unique to each LGBTQ space analyzed, providing for more generalizability across different sizes of cities, across various cultural and ethnic areas, and a wider array of geographies.

This paper uses evidence from Atlanta and Tampa to explore how the interplay of these forces might explain the phenomena described in Doan (2019) of LGBTQ individuals who end up selecting and queering other neighborhoods at some distance from the queer focal area, though they still are drawn to the center for periodic entertainment and community gatherings.

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Key Words: LGBTQ, gayborhood, queer, neighborhood

QUEER SPACES IN ISTANBUL – AN EXPLORATION OF CONFLICTING FORCES
Abstract ID: 664
Abstract within Pre-Organized Session 135

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Gayborhood formations that started in the late 1960s and for the most part continue into the early part of the 21st century have been the focus of scholarly research. Case-based descriptions of gayborhoods in large metropolitan areas have been used to describe "models" of gayborhood formation focusing on their emergence, rise and decline (Collins 2004; Ruting 2008). Furthermore, future of gayborhoods are also questioned through the discussions of the "post mo" (Nash 2013) or "post gay" (Ghaziani 2014) identities and proliferation of homonormativity.

However, this hyper focus on certain spaces often populated by white gay men in western geographies has dominated research on other types of LGBTQ spaces as well as other geographies beyond the global north. To understand the life of gayborhoods we would like to avoid linear models of change that are based on limited experience largely derived from western Europe, North America, and Australia. To do so, we develop the "centripetal and centrifugal forces" model which allows for the identification of centering (centripetal) and decentering (centrifugal) forces that are effective on the formation of queer spaces at differing visibility, concentration and time levels.

We utilize this model to explain the changes in Istanbul, Turkey using in depth interviews conducted with the members of the LGBTQ community and analyzing the archives of LGBTQ organizations as well as relevant newspaper coverages. Although the wider social and political context have created significant pressure on LGBTQ individuals to "not" be visible in most contexts in Turkey, people still carve out their own spaces, creating ephemeral, fluid, subtle, visible and known only to the "community" queer spaces that an outsider could not easily realize (Atalay and Doan 2019). We cannot read the linear 'emergence, rise and decline' model of a gayborhood formation, but we know the queer spaces in the district have been affected by the gentrification processes, changes in socio-economic conditions, and the built environment within the last 30 and particularly 15 years. And our 'centripetal and centrifugal forces' model assists us understanding these changes queer spaces have been experiencing within their particularities.

The utility of our model lays in its power of revealing the complex dynamics among various forces and their affects on the queer spaces which are quite different from each other across different geographies. While linear models are useful in pushing us to focus on queer spaces, the narrow and homonormative focus on a single end point (assimilation of LGBTQ people in wider society) is problematic. On the other hand, our model urges us to look at a wider variety of ways that community are formed and may be formed in the future at different levels of visibility in a variety of political and cultural contexts.

We also recognize that there are complex dynamics of forces operating at different layers and scales. In effect we argue for a queering of the unilinear model that seeks to "transform the material relations of oppression…[and] harness the productive power of representation and discourse to produce social space through performance and parody that explode the restrictive, oppressive grammar of binaries" (Foucault 1977 as cited in Derickson, 2009, p.4).

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MAINSTREAM-ORIENTED BUSINESSES AND INSTITUTIONS SERVING LGBTQ PEOPLE IN SMALLER CITIES

Abstract ID: 665
Abstract within Pre-Organized Session 135

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LGBTQ people in the United States (US) live in a time of increasing acceptance and assimilation, with many of them feeling comfortable living, working, and socializing more authentically and visibly in a variety of locales including suburbs, small towns, and other areas not associated with their communities in earlier decades. Still, this assimilation is not without its limits, and this may be all the more true for gender non-conforming people, LGBTQ people of color, and LGBTQ people without economic privilege (Ghaziani 2019; Goh 2018). In a time when many traditional centers of LGBTQ life are on the wane (Ghaziani 2014), some scholars have found evidence that many LGBTQ people, due to anti-assimilationist sentiments, gender identity, or intersecting class, racial, or ethnic identities, feel left without spaces where they can safely seek the level of self-affirmation, self-expression, and opportunities for organization that many cis-gendered, white middle-class gays and lesbians enjoyed in the "gayborhoods" of yore (Doan and Higgins, 2011). Scholarly understanding of the relative inclusivity of smaller US metropolitan areas, that never even had gayborhoods in the first place, is even murkier.

This paper explores the extent to which mainstream-oriented businesses and institutions position themselves to serve the practical needs for safety and social spaces among LGBTQ people living in a smaller metropolitan area of the generally conservative Southeastern US. The paper describes the built environment, demographic, and political characteristics of the areas where these entities cluster, and also locates them in respect to two distinct, somewhat opposed theorizations of their social potential. In one theorization, these business and institutions foster 'homonormative' spaces oriented toward a de-sexualized, white- and middle-class dominated, consumption-oriented gay citizen (see Bell and Binnie, 2004), while in the second these businesses and institutions are seen to adopt practices that foster physical and emotional safety, self-affirmation, self-expression, and social opportunities for a wide spectrum of LGBTQ workers, patrons, and visitors.

Research involved surveys of seven business districts across four counties composing the Durham-Chapel Hill MSA, in the US state of North Carolina. Surveys identified publicly visible indications of LGBTQ supportive spaces across these districts; for example, a rainbow "safe space" sticker on a storefront. Surveys revealed considerable variation in the number of businesses displaying LGBTQ-friendly symbols between districts with different built environment characteristics, and between districts within relatively more and less conservative counties. Interviews with owners and employees of businesses displaying public indicators of supportive spaces generally demonstrated that these businesses do offer safe and supportive environments for a wide spectrum of LGBTQ people, although certainly exceptions and room for improvement exists.

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Key Words: Sexuality, Gender, Social Movements

PLANNING FOR LGBTQ INCLUSION IN THE U.S. PUBLIC REALM
Abstract ID: 666
Abstract within Pre-Organized Session 135

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LGBTQ folks still face public discrimination in the United States. How then can the profession of urban planning act to increase LGBTQ inclusion within the public realm? This work provides a framework for urban planners to assess their own policies toward increased inclusion.

The role of the closet and gender presentation within public space and public planning processes has to be examined. Existing planning systems reinforce heteronormal understandings of the public realm (Frisch 2002). Public processes still reward the closet. Furthermore, public space still remains formally and informally regulated around notions of cis-gendered identity (Doan 2010). This paper will analyze the discourse on these issues.

Opponents claim that LGBTQ inclusion leads to their own exclusion (Eskridge and Wilson 2018). State legislatures and Federal courts debate these claims. Differential claims to the public realm must be analyzed within the structural frameworks of power in society (Fraser 2010). Opponents' discourse reproduces the power relationships of the closet and cis-gender presentation in the public sphere. Full LGBTQ inclusion then requires recognition.

In conclusion this paper identifies actions the urban planning profession can take to build this full recognition necessary to increase inclusion. These actions include measures addressing planning processes as well as institutional initiatives that promote inclusion.

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Key Words: Planning theory, LGBTQ communities, Planning profession, Intersectionality, LGBTQ rights

TRACK 5 – ROUNDTABLES

MULTICULTURAL PLANNING: HAVE WE MADE ANY PROGRESS?
Abstract ID: 355
Roundtable

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Multicultural planning is planning for diverse publics. It is an approach to reasonably accommodate the identities and cultural/ religious differences of people in city-building activities. Just over two decades Mohammad Qadeer published his seminal work in 1997 on multicultural planning in the Journal of American Planning Association. He documented the types of cultural issues Canadian cities faced and how the planning system responded to them. Given the rise in transnational migration over the past two decades and the changing settlement patterns of immigrants beyond large gateway cities, it is time now to take stock of how and even whether our cities and rural regions have made further progress on this front.

The proposed roundtable will bring together academics and scholars from Canada and the US to discuss and debate the evolution of multicultural planning and the ways and means by which North American cities have accommodated the needs of racialized minorities and disadvantaged groups both inside and outside the 'cosmopolis'. The roundtable intends to discuss both planning theory and practice using examples and illustrations to gauge how inclusive our cities and rural regions have become since the mid-90s. The discussions will attempt to answer the following few questions: What is multicultural planning? Is it a separate genre of planning? How are Canadian and American municipalities responding to their changing demographics and in creating inclusive spaces? Has one country or region done better than the other?

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Key Words: multiculturalism, diversity, social inequity, Canada, US

CULTURAL INSIGHTS FOR PLANNERS: UNDERSTANDING THE TERMS HISPANIC, LATINO, AND LATINX
Abstract ID: 493
Roundtable

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MELENDEZ, Jose [University of Oregon] jmelende@uoregon.edu, participant
VANIK, Leonor [University of Illinois at Chicago] leonor.vanik@me.com, participant
VAZQUEZ CASTILLO, Maria Teresa [Universidad Autonoma de Ciudad Juarez] teresa.vazquez@uacj.mx, participant
NAVARRO, Criseida [University of Puerto Rico] criseida.navarro@gmail.com, participant

Google Trends shows a preference for the word Latino, which peaked in 2010. In 2016 the term Latinx achieved 1% hits with a peak in 2019 (4%). In 2019, in comparison, the ethnonyms Hispanic and Latino were used 48% and 51%, respectively. As of August 5, 2019, in JAPA peer-reviewed articles, book reviews, and other writings, the term Hispanic had been used 238 times and Latino 124 times. Meanwhile, Latinx had been mentioned twice. Similarly, on APA's website, including Planning Magazine, blogs, webinars, conference panels, and social media, there were 108 entries for Hispanic, 128 for Latino, and 11 for Latinx—some of the content was sponsored by APA's interest group Latinos in Planning.

Based on JAPA's and APA's Latinx stats, which reflect what's submitted and accepted, we can conclude that planners are either not aware of the shift from Hispanic to Latino/a to Latinx or they are slow-adopters. One of the purposes of this article is to justify why planners should be aware of cultural trends. But, as demonstrated above, Latinx is not widely used. If Hispanics/Latin/o/a/x communities do not embrace the term, why should planners think about its use? Would adopting Latinx make planners out of touch? There is a tension that planners experience between adopting a term before gaining extensive recognition and be perceived, on the one hand, as tone-deaf technocrats who do not understand the communities they are trying to serve or, on the other hand, as ignorant, prejudiced, or bigoted.

Why should planners care about the changing nature of these ethnonyms? In 2017 there were 58.9 million Hispanics/Latin/o/a/x in the U.S. constituting 18% of the total population. This figure may represent a big undercount given that about one in ten adults who could have marked "yes" to the Hispanics/Latin/o/a/x question marked "no"—this is about 5.8 million people. Unauthorized populations are rarely captured by Census counts. Besides population growth, figure 1 presents five facts that show why planners need to understand better Hispanics/Latin/o/a/x.

Since planners are expected to communicate and plan for/with members of this growing ethnocultural group, this viewpoint is intended to help planners understand the evolution of these categorizations. One crucial step in becoming culturally competent or increasing one's cultural humility is to acknowledge differences. Thus, it is essential to understand that Hispanics/Latin/o/a/x are not a monolithic—they come from different ancestries, could be native or foreign-born, are citizens, non-citizens, authorized or unauthorized and, identify as Hispanic, Latino, Latina or Latinx. Failure to not understand history, cultural differences, and nuances can result in friction, hostility, and marginalization. This roundtable asks three questions (1) why do planners need to understand Hispanics/Latin/o/a/x/ better?, (2) how can planners understand the evolution of Hispanic, Latino, and Latinx terminology? and, (3) which strategies can help planners to decide which terms to use? In what follows, the participants examine where these descriptors originated and their relevance in planning practice and education. The article offers recommendations for practicing planners, including hiring diverse planners, asking community members about their preferred terms, preparing trainings, hosting conversations, mapping identities, and creating equity plans at the department or city level.

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Key Words: cultural competency, diversity, equity, Ethnicity, Demography

TRACK 5 – INDIVIDUAL ABSTRACTS

"GENDERED" PARKS AND PLAYGROUNDS – A CASE STUDY OF KARACHI, PAKISTAN THROUGH THE LENS OF RELIGION, CULTURE, SES, AND PLANNING PRACTICES."
Abstract ID: 121
Individual Paper Submission

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Physical activity is suggested as an effective guard against increasing wave of overweight and obesity across the globe. A large body of previous research indicates that the women participation in PA outside is not comparable to their counterparts and use of outdoor open spaces is strongly gendered. Earlier case studies of several urban locations also suggest that women involvement of PA outdoor is considerably suppressed by various reasons such as fear of safety, sexual assaults, distance to parks/playgrounds and presence of opposite gender. Also, some of the case studies done on female children concluded the similar findings. Similarly, playing sport too has predominantly been a men domain and maintained what is referred to as "hegemonic masculinity".

This case study focuses on how cultural and religious beliefs intersecting with SES and planning practices play an important role in creating gendered open spaces in the city of Karachi, a mega city of Pakistan with an estimated population of more than 23 million people. This study aims to explore the 'gendered' character of the parks/playgrounds with the help of three lenses: first, the role of 'Socio-economic Status'; second, 'Religion and Culture'; and third, 'Planning Practices'. While taking the ground of planning practices in Karachi where a very common pattern has been sought i.e. grouping open spaces (parks/playgrounds) together with mosques, we analyze the hypothesis that 'low-income neighborhoods/high poverty areas have less outdoor PA participation by women' with respect to our context as a result of this grouping. During the two prayers times (Asr & Maghrib), which usually coincides with peak hours of parks/playgrounds use (2-4 hours before sunset - seasonal variations count), these open spaces become completely occupied with men; a practice which deters the women to come outside and use these spaces due to strict cultural and religious boundaries set by religious clerics.

We aim to conduct a random survey of all kinds of neighborhood parks/playgrounds whether large or small (approx. N = 45-60 and at least n = 15-20 for each SES), in all three SES in Karachi urban areas where we found this grouping and count the total no of male and female participants including children of four years and above. A quantitative and qualitative analysis is conducted to examine the difference in PA outdoor between two genders with reference to each SES. The data is geo-coded and analyzed in ArcGIS/GEE, supported by detail photography of each selected park/playground during specific timing of peak use. The city population is widely diverse with respect to race and ethnicity as well as distinctly divided into neighborhood which belongs to different SES such as 'High-income', 'Middle-income', 'Low-income' and 'Informal Settlements/Slums'. Due to the controversial nature (illegal occupation) of informal settlements/slums on public land as well as absence of formal neighborhood plan; these settlements were excluded from the study.

This case study attempts to investigate a rather unique perspective of a planning process which has been found to render a gendered character to open spaces, consciously or unconsciously, in the city of Karachi. It will also add a new dimension in this area of research where racial, social, cultural and other planning processes have been studied and documented but the religiously rooted issues were not addressed at all. This might have happened because of difference in demographic characteristics as Pakistan is predominantly a country of mono faith population (97 % Muslims) as well as planning practices indigenous to an area. This research is likely to pave the way for future studies to investigate this new

dimension, wherever possible, to apply and compare its validity across the different regions of developing and developed world.

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Key Words: Gender, Religion, Parks/Playgrounds, Physical Activity, SES

OCCUPATIONAL ASSIMILATION OF US IMMIGRANT
Abstract ID: 184
Individual Paper Submission

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Due to data limitations, most research on US immigrants only examines the immigrants' economic performance post immigration. This approach may underestimate the immigrant's human capital obtained in the source countries. When immigrants migrate to new countries, immigrants' skills attained from the source country do not perfectly transfer to the new labor market (Akresh, 2006; Akresh, 2008; Banerjee and Phan, 2015; Chiswick et al, 2005). Similarly, US immigrants' occupational status drops when they first relocate to the new labor markets. As they stay longer in the destination-country, immigrants gradually assimilate to the new labor market and their occupational status gradually improves (Akresh, 2006; Akresh, 2008; Banerjee and Phan, 2015; Chiswick et al, 2005). Even though immigrants' occupational status improves as they assimilate to the new labor markets, immigrants' status could be still lower than their pre-immigration status. This implies that immigrants' human capital is not fully utilized. Therefore, it is important to examine how immigrants' occupational status changes before and after their move.

This paper uses the New Immigrant Survey (NIS), which provides US immigrants' pre and post immigration conditions, and estimates OLS & Heckman selection models to identify the occupational trajectories of US immigrants. We follow immigrants from the year 2000 to 2009 and find that immigrant occupational status follows a U-shaped pattern. Specifically, we trace down immigrants' occupational status in four periods; B1(last year employed abroad), A1(first year employed in the US), A2(2003) and A3(2009) periods. When US immigrants move to the US, they experience a sharp decline in their occupational status; Compared to the B2 period, immigrants' average occupational status dropped 17% in A1 period. After the move, immigrants gradually assimilate into the US labor market; Compared to the A1 period, 3% of the immigrants' occupational status increased in A2 period. Compared to the A2 period, 6% of the immigrants' occupational status increased in the A3 period. Our analysis reveals that immigrants' occupational status in the A3 period is lower than their pre-immigration occupational status (B1 period). This suggests that it is difficult for immigrants to recover their prior occupational status, even though some of them have resided in the US for almost ten years. The US is one of the largest immigrant-

receiving countries and immigrants play a crucial role in the US labor market. This result emphasizes that we need immigrant policies that help immigrants' assimilation process.

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Key Words: International Migration, US Immigrant, Occupational trajectories

MOVING TOWARDS SAFETY: STUDENT'S PERCEPTION AND EXPERIENCE OF UNIVERSITY TRANSIT
Abstract ID: 246
Individual Paper Submission

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Public spaces and services are meant to be equally accessible to members of the community. The reality is that how one navigates and experiences these elements can very much be influenced by their race, gender, and/or sexual orientation. Studies which explore how public transportation service is experienced by members of the community at large commonly share one conclusion, women are less likely to feel safe in transit environments. This fear can lead women to make significant behavioral changes in hopes of reducing their risk of victimization. One common change that is made is the reduction of transit use. This decision can have adverse impacts on the quality of life of members of this segment of the population as it can significantly limit their mobility and access to essential services. Within a university environment, this decision can impact the college experience for women as it can limit both academic and social opportunities. When members of the student body do not have equal access to such opportunities, equality has not been achieved.

This study seeks to explore the female student body's experiences and perceptions towards university transit service. Particular attention is placed on examining how their perception of this service impacts their educational experience. Questions which drive this study include: 1) How do female students perceive their personal safety within university transit spaces? 2) What factors impact the perception of their personal safety? and 3) How do female students navigate these spaces as a result of their perceived safety?

Necessary data to conduct this study was collected via a university wide survey and student interviews at one major university. These methods are geared towards seeking participants' perceptions and assessments of travel on university transit services. The deployment of a university wide survey allowed the research to see how the travel behavior of members of the female student body varied from that of their male counterparts. The survey also allowed the researcher to identify any deviations in behavior which may be influenced by a respondent's race, gender, sexual orientation, or other personal characteristics.

Findings from this study will allow university transit agencies to gauge how effectively serving the needs of vulnerable members of their ridership base. This can inform planning and policy decisions that may contribute to the delivery of services that more adequately serves the needs of their patrons and expands

opportunities available to women within a university environment.

This study will inform a larger study which seeks to explore the prevalence of these issues at a national level. This will see the inclusion of the experiences of members of the student body at numerous universities throughout the country.

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Key Words: Safety, Transit Service, University, Equity

TOWARD A MODEL OF STRUCTURAL, PHYSICAL, AND SEXUAL VIOLENCE AS INEQUALITY: EXAMINING WORKPLACE VIOLENCE FOR ASIAN FEMALE WORKERS IN MASSAGE PARLORS IN LOS ANGELES AND NEW YORK
Abstract ID: 277
Individual Paper Submission

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Illicit massage parlors purport to operate as legal businesses but serve as sites where sexual services are illegally bought and sold. Conflicts over these sites stem from community members who find them to be a public nuisance pitted against immigrant women workers who see massage parlor work as their best path for economic survival. Illicit massage parlors are a prominent aspect of the "indoor" (or "off-street") sex industry, now the most prevalent form of the sex industry (Sanders et al., 2009). Despite this growth, most research has focused on street prostitution (Lever et al., 2005). The growth in the industry has been traced in part to more aggressive policing of street-based prostitution, driving the sex industry into indoor venues and to the use of the Internet to connect clients and women working in the sex industry (Murphy and Venkatesh, 2006). Although "red-light districts" have long existed in cities (Hubbard and Sanders, 2003), illicit massage parlors have become more ubiquitous, moving into higher income areas in New York City (NYC), such as Midtown, and into middle-class immigrant areas in Los Angeles County (LAC), such as suburban Chinatowns. An Urban Institute study of medium-sized cities in the US found that the underground commercial sex economy was in some cities connected to sex trafficking, drug trafficking, and gang involvement (Dank et al., 2014).

To develop a conceptual model of inequality using structural, physical, and sexual violence as an important core element, we interviewed 116 Chinese and Korean women from October 2014 through July 2016 who provided sexual services in illicit massage parlors in New York City or Los Angeles County.

Participants were recruited through massage parlors, courthouses, ads in ethnic newspapers, online ads, and referrals from social services. The 60- to 90-minute interviews were conducted in language by trained bilingual interviewers. The participants were provided with a $100 incentive to compensate for work time lost.

The analysis indicated that many women carried out their work for the most part without violent or coercive incidents. However, 18% said that a client had hit them or otherwise hurt them physically in the last year, and an alarming 40% of study participants said that a client had forced them to have sex in the last year. These women are isolated from police protection because of the criminalization of prostitution and often their undocumented immigration status. Their fear of arrest for prostitution almost always superseded their fear of being robbed or assaulted by clients.

We propose a conceptual model of inequality that prioritizes attention to structural, physical, and sexual violence using the following elements: illicit massage parlor work as a labor issue (i.e., recognizing the less visible elements of urban globalized economies); illicit massage parlor work as a part of the larger immigrant story of survival (i.e., explained by many of the same dynamics shaping other immigrant experiences, rather than an anomaly); and illicit massage parlor work as a law enforcement reform issue (i.e., raids and arrests do not reduce or end illicit activity and exploitation, and instead, women are further victimized, and employers, clients, and other actors leverage fear of law enforcement to exploit women workers).

Two authors not included in the original author list: Melanie Dulfo, Apicha Community Health Center, NY; Daun Jung, John Jay College, CUNY, NY.

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Key Words: structural violence, inequality, immigrant employment, law enforcement reform, Los Angeles and New York City

INDIGENOUS MOBILITY IN AN ERA OF MISSING, MURDERED AND INDIGENOUS WOMEN
Abstract ID: 299
Individual Paper Submission

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There are thousands of deaths and disappearances of Native women and girls. These native women and girls vanish from tribal lands, rural communities and cities with no official accounting. Native Americans have unique mobility patterns as they travel from rural tribal territories to urban centers. The issue of safe travel for native girls and women involve indicators of health and risk factors. Tribal people are impacted by historical trauma, grief and loss of loved ones due to war, boarding schools, foster homes, forced assimilation, inadequate health care and bias in schools and legal systems. There is structural discrimination that exists in laws, public policies and institutional practices. We need to understand how these social structures have worked to devalue the lives of indigenous women and girls. The complicated jurisdictional scheme of Indian Country makes it difficult to protect native women. Tribal communities range from urban centers to the large land base reservations with rural, and isolated communities that exist with limited or non-existent Law Enforcement resources.

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Key Words: Indigenous, Mobility, Law, Gender, Intersectionality

TRANS IN TRANSIT: PUBLIC TRANSPORTATION EXPERIENCES OF TRANSGENDER PEOPLE
Abstract ID: 369
Individual Paper Submission

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Overview of research

Transgender and nonbinary identities are only recently being spoken of and acknowledged by the larger public. Often conveyed through the umbrella term trans, gender identities beyond the binary assigned at birth include, but are not limited to: transgender, nonbinary, two-spirit, genderqueer, genderfluid, gender non-conforming, pangender, agender, bi-gender, and third gender. It is vital to understand trans experiences as a part of planning resilient cities, equitable to everyone. The Southern California region, particularly Los Angeles, has been investing heavily in public transit as a part of the solution to reduce greenhouse gas emissions. Yet, not all groups of the public experience transit in the same way. For instance, studies show women as less likely to take transit due to perceptions and experiences of harassment and assault (Hsu, Boarnet, & Houston, 2019; Loukaitou-Sideris & Fink, 2009). Indeed, studies of power dynamics and space often focus on gender (Lubitow et al., 2017). Yet, the experiences of trans people in public spaces remains understudied, specifically as it pertains to transportation. A 2015 survey in the U.S. by National Center for Transgender Equality (NCTE) revealed that 34% of over twenty-seven thousand people who identify as trans reported experiencing unequal treatment or service, harassment, or assault on public transit (NCTE, 2015, p. 214). Understanding the experiences of people who identify as trans can inform policies, processes, and design in transportation planning.

Research question

What is the experience of taking public transit for people who identify as trans?

Research methodology + data source

This project required primary data collection. I conducted semi -structured interviews, approximately 1

hour each with half-hour follow-up interviews, with 6 people. I received IRB approval prior to recruitment. I recruited participants via UCLA's LGBT resource center and social media. Inclusion criteria were that participants use public transit at least once per week and identify within the trans umbrella. For this sample, I purposefully sought a diverse array of gender identities and expressions, as well as diverse racial and ethnic identities. As I myself identify as genderqueer and trans masc, I kept a reflexivity journal throughout the process. I transcribed the interviews. I will code and analyze the data for themes (software assist to-be-determined), ultimately writing a paper on the experiences revealed. The limitations of this study include its lack of generalizability, the possibility of a student-majority sample, and self-selection bias for participants willing to share their experiences.

Findings

Research in progress, paper to be finished by August 2020.

Implications and actionable conclusions

This is a pilot study for my dissertation. Since the transportation experiences of people who are transgender are understudied, a pilot study will help to generate robust interview instruments as the basis for a larger, mixed-methods study.

I expect the public transit experiences of people who hold trans identities will highlight issues for this group and its subgroups in the unique public spaces of transit. Knowing what is happening to people and how they deal with it on (or avoid) public transit can inform policies and procedures to make transit equitable in practice. It could inform instruction regarding the use of public space more broadly.

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Key Words: public transit, gender, transgender, LGBT, transportation

SINGLES IN CITIES: FEAR OF UNCERTAINTY AND COMMUNITY PARTICIPATION AMONG SINGLE WOMEN IN TOKYO
Abstract ID: 398
Individual Paper Submission

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In the past several decades, the number of single-person households in the city centers of large metropolitan areas has significantly increased (Klinenberg, 2012). Though socioeconomically, racially, ethnically, and generationally diverse, individuals in such households are often considered to be temporary residents with weaker ties to their neighbors and are viewed as being unengaged in neighborhood activities (Putnam, 1995). These factors may have a negative effect on neighborhood well-

being. Through an examination of such trends in Tokyo, Japan, this paper explores the social relationships singles have within and outside of their neighborhoods, as well as how the nature of such relationships influences a neighborhood's condition.

Though the population of Japan is aging and shrinking, Tokyo has been growing steadily. This is due in large part to an influx of younger generations from outside the region, given the city's high concentration of businesses and institutions of higher education (Ronald & Hirayama, 2009). In the past, as younger generations aged, they advanced economically and formed families composed of a working husband, a homemaker, and multiple children. These families also purchased houses, and the high instance of homeownership that resulted created a sense of stability in neighborhoods (Rohe & Stewart, 1996). However, in recent decades more people have stayed single. Both the academic literature and government reports suggest that the economic independence of women (as a result of an increased number of women in the workforce) and growing economic uncertainty (given that men can no longer support an entire family as solo breadwinners) are the major reasons for females and males staying single; marriage is no longer economically essential, and can even be considered a burden (Retherford, Ogawa, & Matsukura, 2001)

Without close family members around for support, singles may have limited social relationships, participate in neighborhood activities less often, and even become heavily reliant on social assistance in old age. In Japan, the impact on women might be greater, as a persistent gender pay gap makes it more difficult for many to save enough for retirement. In addition, a single woman is traditionally viewed as "abnormal" or as a "loser dog" (Sakai, 2003), which may exacerbate social isolation. Using recent survey data of approximately 2,600 singles age 35–64 living in central Tokyo, the paper explores the social relationships and neighborhood engagement of singles—particularly women—and discusses how their activities influence neighborhood well-being.

The results indicate that social relationships are influenced by a single person's gender and age cohort, as well as their parents' socioeconomic status and proximity to relatives and close friends. While single women age 50–64 have relatively active social relationships, both within and outside of the neighborhood, and feel less fear regarding the future, younger women between 35 and 49 tend to withdraw from neighborhood activities and worry more about finances, housing, and isolation. Uncertainty about the future related to social change and the threat of natural disasters, for example, and negative social perceptions associated with being single women, prevent them from participating in neighborhood activities and expanding their social networks. At the same time, younger single women do not completely avoid participating in neighborhood activities, as men often do, and remain open to the idea of remaining in the neighborhood as long-term residents.

Based on the results, this paper advocates for the engagement of local governments and neighborhood organizations in efforts to include singles—especially those who are younger women—in neighborhood activities. It also highlights as key to neighborhood well-being the elimination of economic gender gaps and a shift in social norms regarding family composition.

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GOVERNING DIFFERENCE: URBAN POLICY AND MANAGED MULTICULTURE IN SINGAPORE
Abstract ID: 480
Individual Paper Submission

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This paper is about the governing of difference, and interrogates the role of the State in shaping the encounter experience of everyday multiculture in Singapore. As much as relations across difference are always visceral, affective and becoming, I contend that more attention needs to be paid to the rhythmic and systemic ways through which such encounters are negotiated and performed. I explore how the Singapore State manages diversity with a toolkit encompassing spatial interventions through urban planning and design, social policy and conceptions of 'othering', to consider the extent to which people are able to develop capacities to live with difference more widely. I draw on Mitchell Dean's (2010) work on governmentality as a conceptual scaffold to illuminate how the 'art of government' (Foucault, 1991) is practiced to manage difference in Singapore. A 'graduated sovereignty' (Ong, 2000) thus results when groups are subjected to different regimes of value (and punitive technologies) on account of their varying nationality, gender, ethnicity and human capital skills. This paper explicates how such 'graduated sovereignty' between and amongst the local citizens and foreigner segments of the populace play out socio-spatially in Singapore. In doing so, I examine if Gordon Allport's (1979) claim in his contact hypothesis that institutional supports mitigate intergroup prejudices, holds true.

Focusing on encounters (and non-encounters) across difference in everyday spaces within public housing and private housing neighbourhoods in Singapore, I highlight how such encounters are always embedded within the material organisation and social context of the specific neighbourhood and the State's larger discourse on difference, driven by Singapore's historical legacies and manifested in urban planning initiatives and housing regulations. I also draw on rationalities behind Singapore's urban policies through interviews with politicians and bureaucrats, as well as my tacit knowledges living and working as an urban planner in Singapore, to ask: How does urban policy shape encounters in everyday spaces? More significantly, how can urban policies be better mobilised to enhance people's capacities to learn to live with difference? In doing so, I make three claims. First, I argue that planning and policy initiatives influence intergroup socialities. In foregrounding the role of government agencies, my argument is not that we should dismiss the messy underside of intercultural relations but that scholarship on diversity needs to address practices of government (and its lack thereof) pertinently. Second, I believe the Singapore case is testimony of Allport's contact hypothesis, despite critique otherwise of its simplicity (e.g. Valentine, 2010; Matejskova and Leitner, 2011). Finally, I advocate that policy interventions can potentially enhance people's capacities towards intercultural learning and living with difference. The excesses of everyday life, particularly when habitualised choreographies and thinking are tested and breached, can enable a 'micropolitics of self-modification' (Connolly, 2002) to emerge. However, an ethos of tightly managed multiculture could also limit this possibility. It is my hope that insights drawn from the Singapore case, towards a better understanding of how and why urban governance may variously limit and foster a living with difference, may resonate and provide takeaways for the experiences of urban socialities in cities elsewhere.

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Key Words: urban policy, Singapore, multicultural difference, contact hypothesis, governmentality

EXCAVATING THE PROCESSES OF RACIAL FORMATION: BRIDGING ANTE-AND POST-BELLUM SPATIAL FRAMES IN CENTRAL VIRGINIA
Abstract ID: 560
Individual Paper Submission

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This paper studies the city of Charlottesville Virginia through the question: what successive racializing assemblages are in operation in cities over time, and can this examination begin to bridge gaps in planning and design theory across antebellum/postbellum and rural/urban divides? Using mapping and critical landscape analysis, this study focuses on Charlottesville's spatial and political systems of racialized power through a series of discrete time points that span from before the Civil War to the 20ᵗʰ century.

This study shows that while the spatial forms of racialization, and the social mechanisms of racial construction shift dramatically over time, the underlying logic of the invention of human hierarchies through the articulation of space remains.   By tracing the development of one mid-sized American Southern city through time, this analysis will explore how the semi-urban and suburban patterns seen in Charlottesville (and more broadly across the nation) are deeply imbricated in histories of rurality, agriculture, and slavery. This presentation will also explore implications of the findings: what would it mean for planners to understand localized space as as an accretion of these histories, and what would this shift in context mean for the practice in the present?

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Key Words: slavery, race, history, rurality, capitalism

INCORPORATING SCHOOL BUS EXPERIENCES OF FAMILIES LIVING WITH CHILDHOOD DISABILITY INTO STUDENT TRANSPORT PLANNING
Abstract ID: 579
Individual Paper Submission

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Planning and carrying out student transport services for children with disabilities represents a complex challenge for schools, school boards, and student transport operators. At the same time, everyday experiences of school bus travel can be stressful and exclusionary for children with disabilities and their families. Despite the difficulties involved in planning, carrying out, and experiencing school bus travel for disabled children and their families, little has been written about how they experience school bus trips. Moreover, little has been written about how the experiences and critical perspectives of disabled children and their families can inform and improve student transport planning. In this paper, we present school bus travel-related findings from an ethnographic study of how families living with childhood disability experience everyday school travel across the Greater Toronto and Hamilton Area (GTHA) in Ontario, Canada. In this paper, we ask, "how are children with disabilities and their families experiencing everyday school bus trips?"

The findings presented in this paper emerged from interviews and photovoice (Wang and Burris, 1997) exercises conducted with parent-disabled child dyads (i.e., 15 parents, 15 disabled children) across the GTHA. All children had one of three genetic conditions that result in chronic physical disability and associated mobility impairment. These conditions were osteogenesis imperfecta (brittle bone disease), Duchenne muscular dystrophy, and spinal muscular atrophy. We employed a generous concept of work (Smith, 2005) throughout the study to continuously question how the families may be performing inequitable, obligatory activities that regularly go unrecognized as work, but are crucial to achieving everyday school bus trips. We also used Goodley's (2014) critical ableist studies perspective to help with recognizing ableism, questioning its normalcy, and to consider how normalized ableism shapes student transport planning.

This paper contributes to planning scholarship and practice in two ways. First, it adds to the literature (e.g., Ross & Buliung, 2019) that considers how current student transport planning and design can leave some families of disabled children having to perform inequitable work to gain education access that other families (i.e., those not living directly with childhood disability) need not even consider. Secondly, the paper shows the value of engaging the experiences and critical perspectives of families of disabled children in student transport planning processes. This is achieved by considering how the families experience and regard school bus route planning (i.e., for both typical and accessible buses), school bus designs, school bus pick-up/drop-off interfaces, and bus driver training. We argue that current school bus route planning practices and school bus designs often leave disabled children without opportunities for peer interaction during bus trips while their able-bodied peers enjoy and benefit from peer interaction during their bus trips. We also identify potential improvements to school bus pick-up/drop-off interfaces to enhance disabled children's safety during school bus transitions and to help reduce the workload of disabled children's parents. Lastly, we call for increased attention to school bus driver training to enhance disabled children's in-bus safety and experiences, and to address challenging relationships that sometimes exist between drivers and families. Throughout the paper we encourage student transport planning scholars and practitioners to engage families living with childhood disability more diligently, as the families can help to identify planning/design issues and solutions and, in turn, help to produce more equitable and inclusive education access.

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Key Words: student transport, school travel, school bus, childhood disability, ableism

ENGAGING DIVERSE COMMUNITIES ONLINE: TOWARDS A FRAMEWORK OF INCLUSIVE ENGAGEMENT

Abstract ID: 608
Individual Paper Submission

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In this paper, our aim is to attain insights and provide recommendations for designing effective engagement of diverse populations in online municipal platforms. To integrate underrepresented community voices in planning processes, we identify key characteristics for designing inclusive municipal digital channels through the exploration of Canadian cities. Using mixed methods research, we ask what qualities do inclusive platform have, and what are the specific features and design implications that need special attention in the planning and development processes of such platforms?

Public participation encounters great challenges in the domain of urban planning concerning democratic decision-making and diverse citizen populations' appropriation of the future cities. Specifically, voices of underrepresented populations are often absent from planning discourse and current methods, tools and performance indicators do not effectively capture opinions representing the increasing diversity of cities (Fung & Wright, 2003). Meanwhile, new generations of participatory tools, media and platforms are seen as facilitators of citizen participation in different areas of urban planning (Hanzl, 2007), demonstrating the possibility to enrich public processes and address at least some traditional barriers to public participation (Afzalan & Muller, 2018). While many tools and methods have been proposed and utilized to ease the process of public participation and connect the decision-makers to the public, little has been done to guide and evaluate the inclusivity of these pervasive platforms.

The research in urban planning has introduced some key questions of public participation such as inclusiveness, representativeness, and participants' motivation to be involved in the planning process. It indicates that positive engagement experiences emerge where the participatory processes include tangible measures to ensure inclusiveness and levels of minority engagement are high (Olbrich, 2015). Otherwise, participatory mechanisms may reproduce the very types of inequalities that representative institutions are criticized for (Lupien, 2018). To provide a comprehensive vision and more light to these multifaceted issues, our study took both top-down and bottom-up research approaches to understand needs, limitations, values, motivations and preferences in design and use of municipal interfaces and platform schemes.

We seek to bridge the gap between urban planning and information technology design; and between municipalities using new digital technologies and underrepresented communities. We are probing the important elements in design and development of more inclusive digital interfaces in planning for online engagement of diverse communities through the exploration of the cities of Surrey and Vancouver, British Columbia, with diverse residents and high immigrant populations. Both cities have developed programs to expand the scope of immigrant integration. Through a partnership between academia, immigrant and settlement NGOs, and city of Vancouver and Surrey, we explored our research question from both the practitioner perspective and the resident perspective. Building on the insights gained through 6 focus groups, a survey with 299 respondents, 13 interviews with underrepresented citizen groups, 11 interviews with urban planning practitioners and other officials responsible for engaging underrepresented populations, and testing current municipal digital channels in Canada, we established a comprehensive framework for developing future inclusive platforms and interfaces. Through an iterative process, we identified 7 major clusters and 38 sub-categories that cover a wide range of topics on: inclusiveness; persuasiveness; usability; accessibility; trust, clarity and privacy; visualization and interactivity; and functionality.

The specific areas of application and the translation of research insights into practical recommendations are integrated in our proposed framework. The framework developed through this work is intended to

help include the voices and contributions of underrepresented and diverse communities. We offer insights that would be of interest to planning theorists and practitioners, municipal ICT developers, and community engagement experts as criteria to highlight multiple areas that need special attention and responsiveness during the planning and design phases.

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Key Words: online engagement, the diverse city, inclusive planning, digital participation, underrepresented populations

GENDER IN THE COMMONS: PLANNING LESSONS FROM FARMER MANAGED IRRIGATION SYSTEMS
Abstract ID: 617
Individual Paper Submission

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How can locally-based resource governance be both sustainable and just, particularly for women? For planners, the idea of local commons governance has emerged as a promising alternative to state and market mechanisms for achieving environmental sustainability (Alexander, 2008). The "new institutional" approach to commons governance has made major contributions towards an understanding of the conditions that favor the survival of these arrangements. This approach is exemplified in the work led by E. Ostrom (1990), whose design principles for robust commons governance institutions have been often referred to by planners. This research program has identified nearly eighty factors that could affect sustainability of local resource governance. One of these factors is heterogeneity of various forms within these groups. Whether diversity helps or hinders local cooperation around shared resources is still in debate (Varughese, 2001). The general consensus is that women's participation is essential for sustainability although direct evidence of the role of gender over time in commons settings is relatively scarce (Zwarteveen, 2001). We focus on gender heterogeneity within these groups over time to ask two questions. First, what can we learn about female participation in governance using available longitudinal data on commons governance? And second, what modifications are necessary to the dominant approaches in order to better understand the relationship of gender to locally-based commons governance? To answer these questions, we analyze a novel dataset of long-surviving farmer managed irrigation systems in Nepal over three decades, the Nepal Irrigation Institutions and Systems (NIIS) dataset. This dataset was designed by Ostrom's team to test the predictions of the new institutional approach (Poteete, 2010). We find few direct avenues to examine gender heterogeneity using this survey design, with only 2 out of 500 variables directly referring to gender. We combine these findings with interviews of 837 group members to develop a fuller picture of gender in the commons over time. We find that a major obstacle to both assessing and incorporating gendered aspects into local resource governance is locally prevalent norms

about the role of women in society. Finally, we suggest a set of factors that planners can use to better incorporate gendered aspects of sustainable, locally-based resource governance in addition to the Ostromian approach.

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Key Words: gender, commons, governance, environment, sustainability

EQUITY AND DIVERSITY IN THE 21ST CENTURY GLOBAL METROPOLIS: TWO CASE STUDIES OF GENTRIFICATION AND COMMUNITY PRESERVATION IN SEATTLE
Abstract ID: 627
Individual Paper Submission

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America's "urban renaissance" has set of a complex set of challenges regarding the roles of equity and diversity within preservation planning in the face of gentrification. This work explores these challenges through two older neighborhoods in Seattle: the Central District (CD) and Pike/Pine, traditionally black and gay neighborhoods, respectively. Neither is protected by traditional historic district legislation, and portions of each have recently been rezoned to encourage dense development within the city. The ensuing "revitalization" has come at a huge social cost that has dismantled and disrupted places and practices of resident populations, who have had to deal with displacement and dispossession. Even as the city recognizes these neighborhoods as associated with these groups, their efforts to have the populations remain in place have been minimal. Although research has shown that older built fabric provides economic and social benefit for cities, neither regulations created by planners for guiding redevelopment nor strategies created by preservationists for retaining urban heritage have been successful in reconciling these different, yet interconnected, sets of values. This work argues for a more creative, integrative collaboration between urban planning and historic preservation to simultaneously engage – and reconcile – social and economic tensions caused by urban redevelopment.

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Key Words: equity, diversity, gentrification, Seattle, vernacular heritage

WOMEN PLANNING THE EVERYDAY/EVERYNIGHT: PARTICIPATORY ACTION RESEARCH AS A FEMINIST URBAN PLANNING METHODOLOGY

Abstract ID: 648
Individual Paper Submission

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Most research on planning the night focuses on Western city centers' 'night-time economy,' particularly neo-liberal economic revitalization practices related to leisure and alcohol consumption. Although some studies include gender and race analyses, few challenge the underlying male-centered, hetero-patriarchal, and racist night-time cultures. They also overlook the everyday/everynight needs of those people who due to productive, care, and reproductive work use the city after dark on a regular basis, and disregard night-time cycles outside city centers.

This dissertation examines the productive/reproductive continuum of the night economy by studying the everyday/everynight life of women nightshift workers in the Barcelona Metropolitan Area from an intersectional feminist perspective. Using Feminist Participatory Action Research (FPAR), I first analyze the role of contemporary urban planning and mobility practices in shaping women night workers' everyday/everynight life. Second, I examine the transformational potential of FPAR to promote feminist urban planning for night use.

The results reveal that women nightshift workers experience restricted public space access and differentiated right to the city, mainly because of fear of sexual violence rooted in hetero-patriarchal and gender, race, and class oppressive structures. Women continue using more sustainable modes of transport at night as they face several issues while commuting by foot or public transportation due to reduced frequency, irregular service, poor multimodal connections, and fear of sexual violence. This FPAR also highlights how women embody gender inequalities at work, at home, and in the city, carrying an unequal burden of domestic and care work, and paying through their health and wellbeing outcomes the gender inequalities in unpaid care work and gender discrimination in their workplaces.

I propose to move from a neoliberal approach of planning the night-time economy to an intersectional feminist approach to planning the everyday/everynight life, and argue that FPAR should be a central method of doing planning research and practice. Engaging the everyday/everynight users of cities and spaces – particularly diverse women – in planning analysis is essential to incorporate grounded knowledge that is often absent in institutional urban planning policies.

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Key Words: feminist urban planning, everyday/everynight life, Feminist Participatory Action Research, mobility, gender violence

GENDERED PERSPECTIVES ON SEEKING SAFE SPACE WHILE EXPERIENCING HOMELESSNESS

Abstract ID: 688
Individual Paper Submission

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Individuals experiencing homelessness rely on access to public space to conduct activities necessary for survival. Conflict arises in spaces of interaction between domiciled and homeless individuals over a perceived incompatibility of public space use, prompting State intervention. As the urban core in US cities is revitalized, an emerging model of urban governance that seeks to exclude and relocate individuals experiencing homelessness has been introduced (Stuart, 2013). Justification for intervention is usually based on the following: maintaining order, protecting property values, and minimizing interference with consumption spaces. The presence of those experiencing homelessness is understood to devalue public space, requiring spatial containment (Beckett & Herbert, 2009).

The State intervenes through enactment and enforcement of policies that include increased surveillance and curbing visible "antisocial" behaviors, including begging, sleeping and sitting in public, and loitering in parks and on streets. The function of available spaces is also limited by closing public washrooms, securing dumpsters, and redesigning public benches. Those who experience homelessness face pockets of exclusion, surveillance and behavior restrictions when seeking safe spaces that protect them from the elements, and allow them to hide, sleep, stay warm and dry, and eat.

Risk profiles associated with the use of regulated and increasingly unavailable public space may vary significantly according to gender (Casey et al., 2008). Restricting access to some visible public use areas, such as parks or store fronts, may lead women to hide from the public eye as they try to meet some of their basic needs, thus facing greater risks of violence and abuse (Homeless Link, 2017; Benbow et al., 2019).

Our study seeks to explore the characteristics and location of urban spaces identified as safe or unsafe by women experiencing homelessness in the Orlando metropolitan area. The following questions guide our exploratory research: Which urban spaces are considered safe for women experiencing homelessness? Which physical characteristics make public spaces safe or unsafe (lighting, vegetation, residential or commercial buildings nearby, availability of Wi-Fi and power sources, abandoned structures, urban furniture)? Are there regulatory or enforcement constraints that contribute to perceptions of safety in public space (presence of others experiencing homelessness, police or private security surveillance, city ordinances regulating behavior)? How has law enforcement engaged homeless women while performing activities associated with their survival in public space?

The main data source is semi-structured interviews with women experiencing homelessness, recruited through service provider referral and snowball sampling (respondent driven). Participants recruit others from their personal networks who meet the eligibility criteria.

The study seeks to inform government and NGO's on short- and long-term actions that will lead to the creation or maintenance of safe public spaces for women experiencing homelessness. Although physical/spatial, regulatory and enforcement recommendations will be framed considering the Orlando MSA, applicability to other US MSA's is fairly likely due to the strong influence of broader structural conditions that have led to a growing homelessness problem, and the similarity in regulatory and enforcement frameworks to address the issue across the country.

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Key Words: homelessness, gender and space, public space, safety, exclusion

THE 'HOW'S AND THE 'WHO'S OF EXCLUSION IN PUBLICLY-ACCESSIBLE SPACES: PRIVATIZATION IS JUST PART OF THE PROBLEM EVIDENCE FROM DOWNTOWN DALLAS SIGNATURE PARKS
Abstract ID: 788
Individual Paper Submission

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Cities heavily rely on privatization to take over the functions formerly performed by different levels of the government. Yet, scholars criticized privatized public spaces for excluding people based on race, gender, class, as well as their beliefs, behaviors, and activities in the publicly-used space. It seems the notion of exclusion, whether social or political, has been identified as one of the wicked problems of the century. Despite the diverse line of thoughts concerning the concept, two categories of significant philosophers of exclusion may be distinguished: those who try to overcome exclusion by expanding the inclusive horizons to include the historically marginalized and disenfranchised groups (Rorty, 1989; Habermas, 1981); and the ones who views the problem as the result of the political system and power structure (Foucault, 1977; Arendt, 2006[1968]).

This paper explains how governance regimes in each downtown Dallas public spaces affect intersectional inclusion/exclusion. In other words, three questions will be answered of any space: who is to be excluded, how are they being excluded, and who wants to exclude them? This research benefits from a post-positivist comparative case analysis on three publicly-used signature parks deliberately selected in downtown Dallas representing different combinations of public/private ownership and management: (1) publicly-owned, publicly-managed; (2) publicly-owned, privately-managed; (3) privately-owned, privately-managed. The research methodology includes interviews with governance stakeholders; participant observation and intercept surveys, and content analysis of the calendars, local and social media. Triangulating the results inform us of how governance regimes exclude varying "undesirables" in each park.

This research denies the relation of privatization to the geography of inclusion and exclusion. However, it highlights management entities' visions, roles, and stance in the for- and non-profit spectrum in the exclusionary processes. Besides privatization, the governance regimes utilize fortification, commercialization, financialization, eventification, and the governance structure primarily through lack of representation for excluding users. On the contrary, each space initially aims to attract different 'publics' through physical programming. Although general practices seek to include individuals with physical and cognitive disabilities, members of Multicultural, racial, ethnic communities, members of LGBTQ+ communities, and members of Refugee, immigrant communities, mainly through programming publicly-used parks, still discrimination and exclusion are intersectional. The publicly-owned and managed case

restricts the use of space for 'planned' events, granting access through payment or membership. Otherwise, the 'homeless' and 'activists', as well as LGBTQ+ communities, claim the space for 'unplanned' activities despite the presence of security; 'Social activists' and 'protesters' are not welcomed in the publicly-owned and privately-managed case, where the private security severely restricts the presence of different types of 'undesirables.' However, women and children utilize the space for 'planned,' and 'unplanned' activities; 'Social activists,' 'protesters' and the 'homeless' use the privately-owned and managed park, which is owned and managed by a faith-based organization, whereas families are routinely absent in everyday life of the park. In these three case studies, deliberate exclusions happen through a lack of representativeness and private regulations and bylaws that are not posted for public information, thus purify parks of difference. Contrarily, symbolic exclusions occur through private and ticketed events and inaccessibility of events' schedules, as well as not informing unwanted users about the available programs and activities, and not representing diverse users in CGIs in local and social media.

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Key Words: Public Space, Exclusion, Privatization

TOWARDS COSMOPOLIS?: SKILLED MIGRATION AND THE FORMATION OF THE "COSMOPOLITAN GRID" IN SINGAPORE
Abstract ID: 791
Individual Paper Submission

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Planning for infrastructural and amenity space to attract transnational capital and skilled labor has become an important goal for cities that have the ambition to grow and stay economically prosperous in the world economy. Oftentimes, there is little attention given to the social, cultural and spatial dynamics of such local economic development plans because the urban change is deemed positive, with little to no negative externality, until friction and conflicts force an examination.

Using a case discussion of Singapore, a city-state in Southeast Asia that has aggressively pursued global city status through pro-immigration policy and pro-growth planning, this paper aims to discuss the physical and social formation of this infrastructural and amenity space that I call the "cosmopolitan grid" (Chan 2019). Similar to the electrical grid that promises footloose mobility to plug and play at will, the "cosmopolitan grid" is a physical and socio-cultural space that enables transnational elites to settle and feel at home, away from the established enclaves of expatriate services in the city center.

Firstly, I will discuss the socio-spatial dimensions of the "cosmopolitan grid" as an instance of urban planning's participation in globalizing a city. What are the spatial patterns of land use? What amenities are of particular importance? How has the grid expanded? And what are the implications of the grid expansion? Preliminary studies have shown that international schools and private condominiums are important amenities. The discussion will draw from interviews with government agencies and other community stakeholders, in addition to secondary documents about the planning of international schools.

Secondly, the expansion of the grid across the city also means that new communities of globally mobile immigrants have emerged in neighborhoods where locals have traditionally lived in demographically stable conditions for decades, introducing diversification and gentrification. This raises the following

questions: How do the intersections between the global-local manifest spatially and socially? How has this urban change shape the lived experience of the neighborhood? How do encounters look like? Is it one of "parallel lives" (Cantle 2005), or of inter-cultural life (Amin 2002, Sandercock 2003)? How cosmopolitan is this grid? To address these questions, I will draw on interviews and cognitive mapping with European transnational elites who are living in a heartland neighborhood of Singapore.

The findings of this paper will increase understanding of the less known effects and implications of skilled migration on urban development and its related socio-spatial dynamics, albeit based on a case example of Singapore. These findings build up the planning knowledge of locales of immigration. Further, through unpacking the process and content of the "cosmopolitan grid," the paper examines the connections between the spatial and social outcomes of planning. It poses the question: in what ways and to what extent does the physical intervention in the urban built environment shape the cosmopolitan outlook of cities.

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Key Words: cosmopolitan grid, immigration, diversification, globalization

NO PLACE FOR STREET VENDING IN FLUSHING, QUEENS: CONFLICTS OVER URBAN IMAGE, PLACEMAKING, AND PUBLIC SPACE IN AN IMMIGRANT ENCLAVE
Abstract ID: 856
Individual Paper Submission

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Downtown Flushing, an East Asian enclave in the New York City borough of Queens, is experiencing a development boom, as offshore capital is helping to restructure the physical and social character of the neighborhood. As new hotels, malls, and offices rise, property interests and local politicians are seeking to position Flushing an upscale international business and shopping destination. The neighborhood's street vendors are not part of this new vision, and since April 2019 they have been officially banned from the area's sidewalks.

In order to justify the ban, political and business leaders painted vendors as interlopers and nuisances—unwanted and unwelcome in the neighborhood. The plan to ban vendors was portrayed as an initiative to "take back the streets" for the benefit of residents. This discourse was accepted uncritically by city-wide political leaders and city officials. But as with any neighborhood, Flushing is far from monolithic. The relatively unified anti-vendor, pro-development discourse hid deep conflicts in the area over what the neighborhood should be and what it should become. Working class and lower income East Asian immigrants, street vendors included, saw their interests sidelined by wealthier stakeholders—with the vendor ban being one of the more visible examples of impending changes.

This study seeks to get underneath the elite rhetoric put forth by development interests pro-business politicians to better understand conflicting visions of neighborhood futures in general, and public space and street vending in particular. In order to do this, several hundred surveys were administered to users in public space to gather opinions on overall quality of space and of street vendors. In addition, qualitative

interviews were performed with street vendors, store owners, activist groups, and community leaders to get a better sense of the conflict over public space and vending.

Overall, findings showed that, far from being unified in their disdain for vendors and support for redevelopment, neighborhood residents are deeply divided, with this divide falling sharply along class lines. Poorer residents were much more likely to support vendors, patronize vendors, and less likely to view vendors as a major cause of crowding in public space, while wealthier residents tended to see vendors as nuisances and inconvenient "reminders of poverty".

This research is important for planning and planners as it demonstrates the multiple conflicting interests that exist within what may seem like unified ethnic enclaves. All too often, planners accept narratives put forth about immigrant neighborhoods by those who claim to speak for the neighborhood and co-ethics This tends to obscure internal conflicts. This paper reminds planners of the importance of understanding ethnic enclaves as conflicted and internally diverse, rather than monolithic.

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Key Words: Ethnic Enclaves, Placemaking, Street Vending

MAPPING DISRESPECT: USING PARTICIPATORY GIS TO ILLUMINATE REGIONAL TRANSIT INEQUITIES
Abstract ID: 865
Individual Paper Submission

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Land use is riddled with spatial inequities, but identifying the overlapping socio-cultural, physical, and political barriers to redressing these inequities are preconditions to change. This study adopted a mixed method approach to addressing the following research questions: "How do interactions between spatial and transportation mismatches, often grounded in local and regional policy, limit accessibility for low income households?" and secondly, "How can policy and planning better address these challenges?" We also wanted to understand the opportunities and challenges that participatory mapping would play as a method for identification and analysis of those barriers.

Using a qualitative design combined with a participatory GIS mapping approach, we conducted seven focus groups with community members (N=79) and 10 interviews with transportation service providers to gather information about transportation practices, access, gaps and needs in the Charlottesville, Virginia region. Focus group and interview data were analyzed using NVIVO 12 and ArcGIS.

We found that for many low-income households, the experience of riding public transit was marked with feelings of being disrespected. Long waittimes and inaccessible systems fostered a sense that public and quasi-public systems were not designed with their needs in mind. The availability of affordable housing only in auto-dependent suburban and rural parts of the region undermines reliable access to jobs, healthcare, and other necessities. Like many mid-sized regions, transportation providers and policy makers in Charlottesville struggle to plan for access across urban, suburban, and rural settings that are increasingly interdependent, particularly as jobs and services centralize while affordable housing locates

further from existing transit services.

This paper focuses on the lessons learned from utilizing participatory mapping as a medium to identify barriers to transit equity. Media for mapping exercises, the ethics of such practices, as well as their challenges and opportunities for action-oriented research on transit inequities will be discussed.

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Key Words: Participatory Mapping, Spatial Mismatch, Redressing Inequities

THE DARK SIDE OF LOCAL INTEGRATION POLICIES: THE CASE OF DAY LABORERS IN THE UNITED STATES
Abstract ID: 924
Individual Paper Submission

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Central Themes:

This paper examines local integration policies through the case of immigrant day laborers.

The paper suggests that from the 1990s onwards day laborers presented local officials with a "wicked problem" (Rittel and Weber 1973). Most of the laborers were poor and recently arrived immigrants. They often searched for day work in visible locations like busy street corners and parking lots in predominately white suburbs (Valenzuela 2003; Theodore et. al. 2015). As pockets of day laborers flourished, local officials struggled to develop policies to govern the population. This paper examines the principal policies and their consequences.

Methodology

The paper analyzes local battles and policies concerning immigrant day laborers across the country and then focuses in on the Los Angeles suburb of Pasadena. To address local battles across the country, I gathered newspaper articles through LexisNexis searches with the keyword "day laborer". The resulting database consists of 1,503 newspaper articles, from which 12,652 claims were extracted. The database includes 75 newspapers from different localities. I then coded claims for municipality, stakeholders, types of arguments for and against immigrants, and types of policies.

The paper performs 17 with activists, advocacy organizations, and city officials with direct experience working on day laborer policies in Pasadena. The paper draws on historical archives from four immigrant advocacy organizations in Pasadena and minutes from 14 Pasadena City Council meetings for the period 2000-2010.

Findings

In the 1990s and 2000s, local elected officials across the country adopted various strategies to address immigrant day laborers in their jurisdictions. Two prominent strategies emerged. A punitive strategy sought to govern immigrants through force. Local officials employed established ordinances (loitering, traffic, housing regulations) and created new ones (bans on the public solicitation of work) to criminalize immigrant laborers and make their lives impossible. These efforts aimed to govern this "abnormal" population by banishing it (Foucault 1976). Additionally, a disciplinary strategy sought to govern immigrants by integrating and normalizing them with "worker centers". Through these centers, immigrants were provided a proper place to look for work and services to assimilate them into the local culture. The case of Pasadena demonstrates the limits of disciplined integration. Many day laborers resisted to seek out labor within worker centers. Their continued presence on the streets resulted in the rollout of increasingly punitive practices to compel "deviant" laborers to conform. The paper therefore conceives both strategies as aiming to achieve a common goal: the governance of a stigmatized and illegalized population.

Relevance

Immigration has become one of the defining features of urban change. While sociology and geography have addressed the issue with great sophistication (Varsanyi 2014), urban planning, with several notable exceptions (Gonzalez 2017), has been slow to examine the effects of immigrants on planning and policy. In a period when immigration is at the forefront of national politics, urban planners must address the issue more than ever.

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Key Words: immigration, integration, local policy, day laborer

SPACES THAT WORK FOR ME: A PHOTOVOICE STUDY
Abstract ID: 1013
Individual Paper Submission

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According to the World Health Organization (WHO, 2001 in Krahn, Walker, & Correa-De-Araujo, 2015), many individuals with physical, sensory, and cognitive challenges experience disability due to the external barriers they face in their communities. These individuals often suffer from feelings of isolation and inactive lifestyles as a result (Krahn, Walker, & Correa-De-Araujo, 2015). This puts onus on those who construct and regulate the built environment to make it barrier-free for persons with these diverse challenges. However, existing accessibility standards are producing spaces that are inadequate for the needs of many populations. There is a significant gap in knowledge about what kinds of spaces are accessible for different types of users, and what inclusive spaces look like. This project aims to fill this gap by engaging with persons with disabilities as experts on their experience of barriers in the built

environment.

Our study employs Photovoice, which is "a creative form of community-based participatory research" (Schleien et al., 2013, 213). The Photovoice method has been used by many studies engaging with underrepresented and equity-seeking groups to empower those who are often excluded or neglected by existing systems (Liebenberg, 2018; Nykiforuk et al., 2011). Photovoice can communicate and draw together participants' perceptions and experiences of barriers as well as design solutions in public space by asking participants to share their expertise using photography as a medium of communication. The pilot project was launched in March 2020 working with a group of individuals with intellectual disabilities in Halifax and Antigonish, Nova Scotia. We chose this group as target participants because they are especially underrepresented in community development processes (Schleien et al., 2013).

Participants were high-functioning adults living in residences serviced under the provincial government's supported apartment and group home programs. They could independently participate in the Photovoice activities and communicate their perspectives verbally to the research team. Most of the participants also had some mobility and vision challenges. We asked the participants to identify what spaces in their daily lives are exemplary for accessibility or show where they encounter barriers.

The photos and narratives provided by participants revealed concerns for personal safety and ease of mobility to and through building entrances as priority needs for (re)designing spaces they use regularly. Bus stops, churches, coffee shops, and sidewalks are elements in the built environment most of the participants identified as important. Their photos highlighted small obstructive objects, cracks in pavement, and narrow widths of curb cuts as design elements that determine sense of safety, though able-bodied populations may navigate through them without difficulties. The pilot activities also offered valuable considerations for engagement practices, particularly for communication materials and methods, time and cost provisions, and ethical considerations when working with vulnerable populations with different types and levels of abilities (Coons & Watson, 2013). For example, more direct, plain language with visuals was beneficial, and researchers could derive much more in-depth insights from each participant through one-on-one photo-taking exercises.

Our Photovoice project will be extended to include other underrepresented populations with accessibility needs, including wheelchair users, ageing populations, and persons who are blind or partially sighted. Notwithstanding, working with participants with intellectual disabilities provided an important and unique opportunity to examine engagement practices and develop strategies that are inclusive of this population, as well as to empower persons who are often overlooked by community development. Our intention is for the project to yield an anthology of images to inform standards for inclusive design. In addition, the practices used to conduct this study can inform recommendations for strategies to help planning researchers and professionals effectively engage with persons with many types and levels of disability on planning topics.

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SONIC ORDER AS A MEANS TO POLICE BLACKNESS IN GENTRIFYING WASHINGTON D.C.

Abstract ID: 1119
Individual Paper Submission

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When Washington D.C. was declared the nation's capital in 1791, African Americans already comprised a quarter of the city's population. Later, during Reconstruction, Washington D.C. became a popular destination for African Americans leaving the American South (McQuirter 2003). With each passing decade, the African American population contributed to both the structural development and population growth of the city. As a result, African Americans and the results of their cultural production became an integral part of the District's urban fabric (Hyra 2015, 2017; Hopkinson 2012; Prince 2014).

One such example of African American cultural production, Go-Go music emerged in Washington D.C. heavily influenced by 1960s and 1970s Funk music. At that time, African Americans represented the population majority in the District, comprising 75% of the city's population by 1975. Washington D.C. residents had elected their first Black and home-rule mayor one year earlier and social justice activism flourished in the District including The Black Arts, Black Power, Women's, and Statehood movements (McQuirter 2003). Go-Go music materialized as an embodiment of Black cultural optimism, empowerment, and justice-centered activism, quickly becoming a pillar of African American cultural place-making via its public performances. The music would enrich the daily street traffic and the cultural character of the District's African American neighborhoods for the next 40 years (Hopkinson 2012).

Recently, income inequality and changing development patterns have fueled gentrification in Washington D.C. and resulted in the mass displacement of African Americans (Chronopoulos 2016; Hopkinson 2012; Hyra 2017; Prince 2014). Redevelopment is also resulting in the widespread loss of cultural spaces, specifically, Go-Go venues. Unfortunately, most gentrification literature focuses on residents' displacement experiences, leaving few works devoted to cultural venues and performances and the implications of their erasure from the urban landscape. This study explores the case of Central Communications, a privately owned telecommunications business located in a historically African American community on Chuck Brown Way, a thoroughfare named after a renowned Go-Go pioneer. Over the last 25 years, Donald Campbell, the owner of Central Communications has played Go-Go music from the speakers located at the shop's front entrance without incident. As the surrounding neighborhood has gentrified, noise complaints and threats of litigation from new, white residents have become frequent.

Gentrification creates a socially sanitized urban landscape that not only caters to the aesthetic tastes and preferred amenities of the elite/upper middle class but also is socially comfortable for whites (Hyra 2015, 2017). The authors detail the social impacts of gentrification in the District and demonstrate how Go-Go music is quickly becoming a casualty of urban redevelopment. Combining critical race theory and spatial injustice as conceptual frameworks, the authors pose Go-Go music as a Black cultural phenomenon whose endangered status reflects the displacement experienced by its predominantly Black constituents (Bell 1995; Crenshaw, Gotanda, Peller, & Thomas 1995; Delgado & Stefancic 2000; Delgado & Stefancic 2017; Fainstein 2009; Fincher & Iveson 2012; Marcus 2009; Taylor 1998). The authors also analyze the state of noise ordinances in gentrifying District neighborhoods, asserting that sonic order has been weaponized as a means to stigmatize and police Blackness. The arbitrary definition and selective enforcement of sonic order is a means to regulate the racialized context of a place, under the guise of colorblind urban policy. Employing ethnographic interviews with residents and Go-Go enthusiasts, the authors reveal the ways in which public and private interests work in tandem to erase Go-Go music, its cultural legacy, and the Black bodies that accompany it from the streets of Washington D.C.

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Key Words: gentrification, African-Americans, place-making, music, sonic

PRESERVATION JUSTICE: A FRAMEWORK ON JUSTICE, EQUITY, DIVERSITY, AND JUSTICE
Abstract ID: 1153
Individual Paper Submission

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This paper explores a framework centering the importance of justice, equity, diversity, and inclusion in historic preservation in underrepresented communities. In the field of historic preservation, standards and criteria are deemed critical in assessing the eligibility of a historic site or cultural resource for landmark designation. On the National Register of Historic Places, less than 8% of its listings are associated with communities of color, women, or LGBTQ communities. Issues of systematic disenfranchisement, discrimination, and displacement have (and continue) to shape these underrepresented communities and are often the barriers to participation of and by these groups in historic preservation efforts. This paper develops a theoretical framework to define and explore how issues of justice, equity, diversity, and inclusion drive community-driven preservation efforts in communities of color, women, or LGBTQ communities. What does preservation justice look like in underrepresented communities in terms of landmark nominations, community engagement, and preservation practice? What are the distinctions between justice, equity, preservation, and inclusion? How are these defined in preservation? Who gets to decide? This paper is developed as part of a research symposium slated for September 2020 where 20 preservation scholars and practitioners share their research and work in these underrepresented communities. This framework not only aims to understand the underpinnings to the disparities on the National Register but in preservation scholarship and planning in terms of telling the stories of diverse American people, events, and places.

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WHAT'S GENDER, DIVERSITY AND DIFFERENCE GOT TO DO WITH IT? THE NEED FOR DIVERSITY MAINSTREAMING IN PUBLIC TRANSPORT POLICY: THE TWIN CASE OF WINDHOEK, NAMIBIA AND DELHI, INDIA
Abstract ID: 1184
Individual Paper Submission

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This paper argues that transport systems need to be more inclusive and efficient by addressing diverse needs of the population they serves. Transport planning has largely been informed by gender-binary roles and patriarchal structures in society. The lack of inclusive and efficient transportation can have significant mobility impacts that can marginalise, unrecognise and/or misrecognise, ignore, invisibilise and endanger. Freedom of mobility is essential for an inclusive and safe society. Scholars have therefore issued continued calls for a focus on the mobility of people over vehicles to create more inclusive transport systems. Yet, mobility for women, gender-diverse and non–conforming sexualities remains limited at best and dangerous at worst. This is arguably more so in the Global South, which is characterised by lower levels of gender equality and other forms of human rights violations. Efforts to mainstream gender have yielded limited success due to the lack of consensus over what it means in transport planning. Specifically, the well-rehearsed argument that women have different mobility needs to men has failed due to the lack of recognition of the heterogeneity that exists within the category 'women', the fluidity of gender, and intersectional identities that emerge within a given socio-cultural context. The failure to consider diverse needs leaves transport systems ill-equipped to serve the needs of modern-day society, particularly within a globalising context and the emergence of new forms of citizenship. Framing mobility as a human right, this paper argues for the need to recognise that the freedom of equitable, safe, and easy movement can only be truly achieved when diverse mobility needs beyond binary and patriarchal conceptions are acknowledged and addressed.

This paper presents a review of the relevant transport policies in the cities of Windhoek, Namibia and Delhi, India to identify how they succeed or fail in addressing the diverse needs of women and non–binary individuals through an intersectional lens. Focusing on the lack of safety as a common denominator across the two cities, this paper examines how safety affects mobility for various groups of women and non-binary people and reinforce other forms of inequities. The findings reveal a failure to account for different experiences, needs, and expectations of and for transport among diverse women while rendering non–binary people invisible. The paper concludes with an argument for diversity mainstreaming in these cities as an approach for achieving inclusive and efficient transport systems. Thinking differently about the mobility for diverse groups must be rooted in the heterogeneity of unmet needs of diverse women and non–binary people – a leap forward for transport planning praxis.

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NAMING OUR PLACE: BELONGING AND SPATIAL JUSTICE IN THE AMERICAN CITY
Abstract ID: 1195
Individual Paper Submission

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This paper presents theoretical and empirical research about the naming and re-naming of places, using the example of the history of the Los Angeles region from the native Tongva to the present situation in which 93 languages are spoken by students in the public school system. It brings to focus the important role that words play in placemaking, connecting peoples, cultures, and space, as well as conversely the key role that their obliteration and erasure has been to conquest and dominating peoples and lands. Still, through the LA region's violent layers of histories of displacement and segregation, as well as the complexities of immigration and urbanization, some names have been able to persistently linger through informal, everyday practice and inscription into the built environment, and more recently the utterances of social media.

Contemporary cities and planners have a role to play in how we acknowledge and live with this history and in how we communicate who belongs today through placemaking related initiatives to democratize heritage, support legacy businesses, and map cultural assets.

This presentation critically reviews the ways planners have conceived of spatializing race/ethnicity including segregation maps, redlining maps, and cultural and heritage districts and interplays them with more recent data about informal naming practices.

It concludes with a prototype of web platform to be used in public schools that provides an alternative frameworks for how we might visually narrate and teach the story of multiple claims to the land over time, the myriad of places of belonging in the urban region, and the connections between them in order to promote a regional, civic viewpoint.

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Key Words: mapping, race and ethnicity, cultural heritage

PLACE-BASED RACIAL HEALING AND JUSTICE IN RICHMOND, VIRGINIA: CONTESTED MEMORIES AND RADICAL FUTURES
Abstract ID: 1228
Individual Paper Submission

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How do cities change when their residents decide to take on the monumental projects of place-based racial healing and justice? This paper examines the connections between planning, placemaking, and racial healing in Richmond, Virginia, a city with four centuries worth of dynamic social and political history, and a place that evolved into both the second largest domestic slave market in the United States and the capital of the Confederacy during the American Civil War. For more than three decades, elected and grassroots community leaders have deliberately engaged in the work of historical reckoning with these sinister histories— efforts that have taken a variety of spatial and place-based forms. This paper draws from extensive interviews with planners, elected officials, museum officials, artists, activists, archaeologists, and clergy who have engaged with these questions in Richmond over the past thirty years. In particular, I highlight two ongoing efforts: 1) the memorialization and redevelopment of the Lumpkins Jail site and Shockoe Bottom district, and their connection to the city's Trail of Enslaved Africans, and 2) efforts to disrupt and countervail the "Lost Cause" narrative of Confederate redemption inscribed throughout the city's public spaces, including and especially along its famed Monument Avenue corridor. Through these case studies, I demonstrate how a progressive Southern city with forty years of majority-African American elected leadership, has found common ground across difference to remake and reframe itself in light of this collective reckoning.

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Key Words: placemaking, monuments, economic justice, heritage planning, slavery

INCORPORATING SOCIAL PRACTICES IN PLANNING: A NEW APPROACH FOR EXPLORING HEALTHY BUILT ENVIRONMENTS FOR WOMEN
Abstract ID: 1272
Individual Paper Submission

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The disciplines of planning and public health emerged in the 1850s to address the spread of infectious diseases in rapidly urbanizing areas. More recently, the collaboration between these professions re-emerged to address the rising prevalence of chronic diseases, and the important role of the physical environment as a determinant of key health behaviours (e.g., physical activity and nutritious eating). The collaborative relationship between public health and planning continues to be supported through the World Health Organization's Healthy Cities initiative and allied programs supporting healthy built environments and urban health equity.

Accordingly, spatial scholars inside and outside of planning have contributed to an extensive body of knowledge on the mechanisms through which physical and built environments shape human health. However, this growing body of knowledge has been criticized as a form of neo-environmental determinism, unilaterally treating built environments as producers of human health outcomes (Maller, 2018). Moreover, the extant literature on healthy built environments rarely addresses issues of equity for sub-populations, including women. The predominant conceptualizations used in healthy built environments literature ignores calls for more relational understandings of place within the discipline of planning that would further understandings of the dynamic relationship between humans and their (material) environments (Graham & Healey, 1999). This paper interrogates the theoretical paradigm

predominant in healthy built environments literature and draws on two other bodies of planning literature to offer a new approach to developing healthier places to live for women.

The first body of literature prioritises relational experiences and interpretations of planned communities, which is evident in the more recent focus on social practice theory (Maller, 2018). Social practices refer to actions that are regularly performed and are made up of materials, meanings, and competences within a given place (Shove, Pantzar, & Watson, 2012) rather than directly determined by the immediate built environment. Public health and planning scholar Cecily Maller (2018) argues that too little attention has been paid to the combined impact of non-human 'things' on health and the link between various social practices.

The second body of literature used in this paper is critical planning scholarship focused on issues of equity and gender in planning. Specifically, Greed and Reeves (2005) note that the social practices of men and women are heavily dictated by institutionalized norms. These norms may be reinforced by materials; in the planning discipline, for example, gender roles are often used to help determine the spatial needs of men and women (Huning, 2019). While there have been calls to increase understanding of gender in planning, less attention has been given to planning for women's health, specifically.

Overall, this paper proposes new directions for healthy built environments research and practice that is rooted in theories of relationality and social practice. In combination with the critical literature on equity and gender in planning, this work offers a new approach to explore the performance of gender and health practices in place as crucial elements of a more equitable and inclusive theoretical orientation of healthy built environments. Further, this novel approach to conceptualizing healthy built environments can illuminate opportunities for planning practitioners to create healthier places for women. The paper concludes with a discussion of how future research directions can explore how the social practices of women are reinforced through engagements with material elements in local environments, while also increasing our understanding of how women as agents adapt materials to suit their needs.

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Key Words: Social practices, Relationality, Gender, Healthy built environments, Healthy cities

FROM THE CONCENTRIC ZONES TO CHI-RAQ: URBAN THEORY, CITY FILMS, AND THE PROBLEMATICS OF RACIAL SEGREGATION IN TODAY'S CHICAGO
Abstract ID: 1282
Individual Paper Submission

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Among the most persistent issues in many American cities is the racial segregation of residents. Despite declines in racial segregation across most US metropolitan areas in recent years, racial segregation may exist de facto through social norms, even when there is no strong individual preference for it, and causes several problems in cities, including discrimination, crime, and even dysfunction on urban services.

While Chicago's overall population is fairly evenly divided – approximately 32 percent white, 30 percent black, and 29 percent Hispanic – a closer look at non-quantitative representations of the city shows how Chicago suffers from this type of spatial disconnection. The disconnect is why Andrew Diamond, the author of Chicago on the Make, has called Chicago "a combination of Manhattan smashed against Detroit." City-films are examples of narrative, non-quantitative forms of urban representation that, despite the fact that the city is constructed as much by images and visual representations as by the physical environment, are neglected by urban planners. Having the ideas developed by the sociologists of Chicago school a hundred years ago as a theoretical basis, this research interprets the problematics of racial segregation in today's Chicago through two recent city-films set in Chicago: Canal Street (2018) and Chi-Raq (2015).

The narrative nature of cinema provides a unique imaginative context for interpreting both physical and nonphysical dimensions associated with urban segregation. There are three main reasons why this paper uses cinema as the lens of investigation. First, theoretically, movies constitute one very important form of urban action. Cinema indeed is the urban art of the 20th and 21st centuries. Movie is part of the life experience of people since the 20th century, and This is why Jackson (1973) believes that it would seem wasteful if not foolish to ignore that experience in researches. Second, methodologically, movies constitute a major source of evidence for grounding claims about urban structures, relations, and processes. Third, historically, movies are sensitive barometers of urban processes and movement. Cinematic analysis can provide particularly good indicators of urban changes.

Canal Street tells the story of a community that is torn apart and separated when the lives of two high school boys (one Black and one white) collide and force those around them to question the "lens" through which they see and relate to others. Chi-Raq is a modern-day adaptation of the ancient Greek play Lysistrata by Aristophanes. After the shooting death of a child hit by a stray bullet, a group of women organizes against the on-going violence in Chicago's Southside creating a movement that challenges the nature of race, sex and violence in America and around the world.

From a critical interpretive position, this research uses semiotics to identify and interpret "image-signs" in these two city-films in order to show how the cinematic representation of Chicago provides urban planners with a context for the study of the hidden side of racial segregation and its environmental roots.

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Key Words: racial segregation, Chicago, city film, critical interpretation, crime

REFUGEE WOMEN'S INVISIBLE AGENCY: AN INTERSECTIONAL INVESTIGATION INTO ROHINGYA WOMEN'S EVERYDAY SPACE IN THE CAMPS OF BANGLADESH
Abstract ID: 1350
Individual Paper Submission

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In refugee camps, especially in the global south context, the women in spite of their individual and gendered vulnerability take on everyday responsibilities towards families and therefore contribute to the everyday sustenance of the camps as a whole. However, the "protection" framework guides humanitarian interventions predominantly around the assumption of refugee women's victimhood and voicelessness. By virtue of seeing women as victims, these programs often fail to ensure meaningful participation by women and hence re-inscribe women's subordination. This paper, by shifting the vantage point to women's everyday spaces in the camps, reveals micro politics of everyday life and forms of women's agency that are otherwise unnoticed within the traditional definition of agency.

While feminist scholarship have contributed to re-framing the universal narratives of victimhood by portraying refugee women's different forms of agency (Oo & Kusakabe 2010; Utas 2005), these conversations mostly revolve around women's different tactical response in the form of utilizing male companionship, conforming to abusive relations and even trading sex for their benefit that seldom identify women outside the gendered power relations. The scholarship that has emerged by looking more closely at grassroots practices has however uncover women's everyday negotiations that challenge notion of voicelessness. Such scholarship (Shalhoub-Kevorkian, 2010; Thomson, 2013;) frames women's actions beyond just seeking protection and also defies the traditional forms of agency and establishes women as individual actors subjected to multiple identities.

In this paper, drawing on my extensive volunteer and research work in a Rohingyan refugee camp in Bangladesh, I aspire to contribute to an agency turn in the literature and governance of camps. A turn that moves away from the passive narratives of women's victimhood by seeking the strategies women adopt to accommodate their daily needs within the camp space. My research demonstrates two concomitant processes: While women's voices are not sought after in the camp planning, huge gender based programs are undertaken on behalf of women to 'educate' them about issues like health and family planning. Women refugees, as my ethnographic observation and focus group discussions indicate, however engage in multiple forms of actions that contribute to the everyday living in the restricted space of the camps. Never a part of camp's planning process, to expand their spatial mobility even for the use of toilets or collecting water, women make huge spatial and temporal negotiations. They make their movements invisible as this allows them certain movement beyond the curious eyes of men. While this invisibility when seen from the above can be taken as voicelessness and victimhood, if observed from the ground this sense of invisibility can be found in one hand as a 'domain' that guides women's sense of place and on the other an 'outcome' of women's agency at individual levels. I argue that the absence in the public sphere cannot thus justify them as powerless, because change making in the form of appropriation of existing spaces is happening on the ground every day. Therefore, women's agency needs to be defined not only in the 'formation of new' spaces but also in the 'revision' of existing spaces. This observation in conclusion is of significant value to a gender sensitive planning of refugee settlements by enabling a perspective of seeing women as actors of everyday space and advocating for the incorporation of women's voices in the camp planning process. It provides evidence that women make spatial negotiations that are unheard and therefore women's voices if included can bring significant changes in the planning decisions (Farrington 2019) that will not only benefit women in everyday space use but also in the long term is likely to establish women as agents.

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Key Words: Rohingya Women, Agency, everyday space, invisibility, Refugee Camp

IDENTIFYING JURISDICTIONAL OVERLAPS ON NATIVE AMERICAN RESERVATIONS AND OTHER TRIBAL LANDS

Abstract ID: 1353
Individual Paper Submission

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In the United States, planners working with tribal governments have noted that governance is often hampered by multiple jurisdictional boundaries that carve up Native American lands. These boundaries divide reservations into separate states, counties, school districts, and congressional districts, among others. The divisions then can lead to decreased sovereignty as tribal communities must broker agreements between multiple jurisdictions at different levels of governance. This can lead to challenges in coordinating services and can potentially create of uneven levels of services within the same tribal community. Lastly, the collective voting power of a tribal community may be split across jurisdictions thus reducing native representation at all levels of nontribal government.

This project attempts to quantify the degree to which federally recognized American Indian reservations and tribal lands are divided across states, counties, school districts and congressional districts using Geographic Information Systems (GIS). Esri's ArcMap Overlay Toolset was used to analyze instances of jurisdictional overlaps with 397 census-identified reservations and tribal areas in the continental United States. All data came from publicly available U.S. Census Bureau GIS layers.

Due to mismatches in scale between layers, the overlay process produced slivers of land. For example, rivers serving as borders were often drawn with a high level of detail in one layer and with abstracted straight lines in another. When two layers like this are juxtaposed, the overlapping area forms a sliver. Maps of each reservation split between two or more jurisdictions were visually inspected by two researchers to determine if the splits were artifacts of mismatched scales, or if they represented legitimate divisions.

Before visual inspection we found that 85.9% of reservations and tribal areas were inside only one state, 54.2% were inside one county, 39.5% were inside one school district, and 68.3% were inside only one 2010 U.S. Congressional District. Findings such as these are a necessary first step in documenting and validating the unique challenges facing planners and public officials working on and with tribal lands.

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UNEVEN MOBILITY: EXAMINING SOCIO-MATERIAL ASSEMBLAGES OF NEWCOMER ADOLESCENTS' NON-SCHOOL TRAVEL IN MISSISSAUGA, CANADA.
Abstract ID: 1375
Individual Paper Submission

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With school travel by car on the rise and associated declining levels of active school travel (AST) especially in North American cities, the majority of studies on childhood mobility stem directly from concerns around decreased independent mobility and the decline in physical activity for younger children in their school journeys, citing the importance of developing healthier habits and lifelong patterns of sustainable travel. Albeit informative, the findings of these studies cannot be extended to non-school travel especially for older children because although their everyday routine is embedded within a culture of automobility, adolescents demonstrate a more nuanced, complex, and relatively independent travel patterns than their younger peers (Bates & Stone, 2015). This, coupled with their participation in extracurricular activities and/or employment opportunities means that as they age, they start transitioning into independent decision makers with mode choices that sometimes differ from their parents (Mitra & Buliung, 2015). This paper responds to this gap and examines adolescents' travel patterns with an expanded framework that draws heavily from theories of the new mobility paradigm (Sheller & Urry, 2006). In doing so, we focus on embodied mobilities and examine daily travel as a socially- embedded, relational process contributing to (re)organizing, (re)producing, and (re)structuring the socio-spatial logics of our cities (2006).

Drawing from a study that explores non-school travel of newcomers aged 13 – 19 in the city of Mississauga, Canada, this paper takes adolescents' travel patterns as an entry point to examine unique assemblages of mobilitie(s) in a suburban setting. We highlight an ethnographic methodological inquiry that enables an exploration at the everyday scale of the socio-material dimension of interdependent mobilities; and active meaning-making by the participating youth (Christensen & James, 2008). By employing a critical GIS approach (Cope & Elwood, 2009) that includes triangulated data collected through GPS mapping; semi-structured interviews; photovoice and videos, we present four visual narratives displaying uneven travel patterns that are mediated by the participants' gendered/racialized/aged bodies and socio-material affordances including their access to different travel modes and mobile technologies; their social network; and their familiarity with the built environment and logics of the transit system.

Examining an understudied population and underexplored embodied mobilities, allow us to extend the questions asked in childhood transportation studies to include an expanded inquiry on the silences of our own construction of childhood (Prout, 2004) and their associated mobility experiences. Moreover, our findings inform policies around children's independent active travel in light of Mississauga's new strategic vision that is supported by five strategic pillars of change (including developing a transit oriented city as a preferred, affordable, and accessible choice; a commitment to cultural diversity by ensuring thriving livelihoods for youth and new immigrants; and developing sustainable, safe, and connected neighbourhoods) (City of Mississauga, 2009).

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Key Words: Adolescents, Travel Patterns, Qualitative GIS

TRACK 5 - POSTERS

PUBLIC PARTICIPATION OF ADULTS WITH AUTISM: KEY FINDINGS AND IMPLICATIONS FOR THE PLANNING PROCESS
Abstract ID: 25
Poster

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This poster presents the results of the survey that measured the characteristics of inclusive participation for adults with autism. The implications of this research helps answer the question if the process of planning and designing communities is inclusive for adults with autism and if not, what possible changes can be made in order to make it inclusive. In general it helps understand the preferences for public participation for neurodiverse population, discover gaps in inclusive participation that omits people with autism, and what particular needs are for accommodation. This study gives planning professionals a better understanding of people with autism needs and preferences for public participation and help adults with autism advocate for their needs for the inclusive decision-making process.

Using the Six Feelings Framework, which was developed previously (OSU IRB - Study 2017B0464 "Planning and Design with Autistic Adults"), this study focuses on the adults with autism public participation in the decision-making process related to the planning and design of public realm.

This work contributes to the theories developed on the topic of public participation in planning and autism research and disability discourse. The ultimate goal of this research is to influence the decision-making process towards accommodation of existing public environment with people with autism in mind.

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Key Words: Autism, Inclusive Participation, Planning Process, Public participation, Neurodiversity

REVITALIZATION IN LOWELL MA: HISTORIC PRESERVATION AS POWER CONSOLIDATION

Abstract ID: 763
Poster

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The changing nature of social and cultural values makes the assessment of historic designation projects difficult. It is particularly challenging to integrate cultural values with economic values, which is often outside the traditional purview of conservation professionals (Mason, 2002). In this paper focusing on Lowell's historical redevelopment, I first examine how the emphasis placed on specific values for the evaluation of Lowell's historic fabrics were strategically evolved and shaped, and how the designation of Lowell National Historical Park (LNHP) in 1978 predominantly served the purpose of economic revitalization. Since 1978, the redevelopment created many low-skill manufacturing jobs in the computer business and attracted a significant wave of immigration (Forrant & Strobel, 2011).

Then by collecting and mapping historical census data in GIS, I revealed how 1978's historic designation resulted in the demographic change of different ethnic groups in the Downtown area. Today, the city is composed of 20.9% Asian American residents, 49.1% White residents, 20.3% Latino residents, and 6.69% African American residents. However, a huge difference in population trends among ethnic groups is observed in the designated Lowell National Historical Park (LNHP) during the past 40 years. The White population decreases largely in the overall city but increases significantly within the area of LNHP since the designation. While the designation of LNHP saved the city from declining, it may have failed in benefiting all residents equally in cultural, social, and economic aspects. From the local historical newspaper back to the 1970s and 1980s, I found how the preservation and redevelopment process priced out minorities' small businesses, especially Asian groups.

Therefore I argue that redevelopment through historical designation serves as a form of resource distribution for the city of Lowell. While the establishment of industrial heritage created economic opportunities, its failure in recognizing the value of ethnic and cultural diversity created a privileged position for the city's earlier immigrants, primarily the European White population. Beneficiaries of the new industry of the city are largely not those who were displaced in the designation area. Because places are always constructed within the articulation of certain social relations, those persisting power and forces would determine to whom new benefits would flow. The neglected values of racial diversity and the lack of interventions in preserving the minority community in the designation incubated the inequality by forming a homogeneity in downtown's post-industrial economy.

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Key Words: ethnic diversity, revitalization, displacement, historic designation, power and place

FROM SOCIAL URBANISM TO *RECONCILIATION URBANISM:* DISSEMINATING KNOWLEDGE FROM MEDELLÍN, COLOMBIA TO TORONTO, CANADA

MALONEY, Keisha [University of Sheffield] maloney.keisha123@gmail.com, presenting author

Urban inequality often determines the marginalized lack representation in cities. This is often the case for the Indigenous population in Toronto, Canada, who struggle to see themselves reflected in the urban environment. This is largely the result of historical racism permeating current planning systems and policies rendering Indigenous input, experience, and representation often unnecessary (Woolford 2009). This research aims to promote the 'right to the city' (Lefebvre 1968) for marginalized groups by challenging planning processes. This research promotes the incorporation of Indigenous views into planning practices in an effort to reconcile the historical exclusion faced by Indigenous Canadians, defined as reconciliation urbanism. A framework for doing so is disseminated from the Medellín, Colombia 'Miracle' wherein social urbanism challenged the historical practice of prioritizing elite interests in urban planning projects. Social urbanism seeks to prioritize the excluded through urban planning, primarily by implementing participatory planning processes. What, and how, can planning processes in Toronto learn from Medellín regarding inclusive processes with excluded groups? How can we reconcile political and social conflicts through changing urban form? How can marginalized and oppressed groups obtain their 'right to the city' through changing current planning processes?

Implementing a case study review and conducting primary research in Medellín in the informal communities (comunas), the research develops an inclusive planning process extracted from Medellín. Site visits were made to numerous social urbanism interventions, including the community garden constructed on a former landfill, UVAs which serve as green community spaces, owned by the public utility company (EPM) and house water basins, the Escalaras Electricas and Metrocable system which transport informal dwellers to the core of Medellin. In an effort to contribute to the reversal of the origins of knowledge, typically coming from the global North, this research prioritized examples from Medellín as the blueprint for Torontonian inclusive planning interventions.

Comparing these two cases, the contextual background differs greatly. The dissemination of knowledge necessitates a filtering process that extracts and adapts knowledge suitable for the local planning culture, permitting comparisons between two contextually different cases (Khirfan 2011). What is relevant to extract is the process that occurred in Medellín leading to the development of inclusive and regenerative urban interventions. Examples from Medellín demonstrate when public spaces are created with and for excluded populations, investment serves material and symbolic purposes, improving the inclusion within the city and affirmation of identity. This initiates interaction between material recognition and symbolic recognition that culminates in supporting the right to the city for the excluded. This process, referred to as the Inclusive Planning Process, is detailed below:

It is not within the scope of the research to presume potential interventions, and it would not be applicable to replicate the examples found in Medellín in Toronto. This would undermine the importance of community participation and would lead to contextually irrelevant interventions. It is, however, possible to disseminate this process into the Torontonian context to improve inclusivity and work towards reconciliation urbanism over time. The key distinction is incorporation of reconciliation urbanism as an end goal.

The Inclusive Planning Process developed from the dissemination process has suggested process targets which can reconcile political and social conflicts, reduce urban inequality through creating change in the urban form, subsequently supporting the 'right to the city'. While the process for ensuring inclusive planning practices disseminated from Medellín is optimistic, its viability in practice must be assessed through implementation in various contexts, including in Toronto. By empowering the needs and perspectives of the excluded through infrastructures of inclusion, urban planning can play a significant role in the reduction of urban inequality, and therefore reconcile political and social processes.

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Key Words: urban inequality, reconciliation, right to the city, participation, Indigeno

TRACK 6 – HOUSING

TRACK 6 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS FOR THE SESSIONS

ZONING AND HOUSING JUSTICE
Pre-Organized Session 34 - Summary
Session Includes 114, 115, 971

KRAMER, Anna [McGill University] anna.kramer@mcgill.ca, organizer

In a time of intensified urban development and rising housing costs, zoning reform has emerged as a supply-side fix to the housing crisis and a strategic site of negotiation between real estate capital and public goods. We discuss research that engages with planning practices of upzoning and inclusionary zoning, asking how these zoning reforms interact with issues of spatial segregation, housing inequality, displacement and tenant movements, with an eye to the agency and positionality of planners and the potential for housing justice.

Objectives:

- land use inequality

UPZONING TOUCHES DOWN: A SPATIAL ANALYSIS OF ZONING REFORM POLICY
Abstract ID: 114
Abstract within Pre-Organized Session 34

KRAMER, Anna [McGill University] anna.kramer@mcgill.ca, presenting author
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Over the past decade, as the housing crisis in large cities has intensified, zoning reform has become a common and controversial planning policy proposed to address housing affordability[1–3]. More specifically, some version of systematic 'as-of-right' pre-development up-zoning in existing urban areas (sometimes combined with inclusionary zoning) has been proposed or adopted in Seattle, Portland, Vancouver, Los Angeles, San Francisco, and Minneapolis and is being considered elsewhere.

There are three main arguments put forward to support up-zoning: affordability, equity, and sustainability. The presumed logic of up-zoning is that adding housing supply through residential redevelopment by allowing intensification will ease housing prices in high demand housing markets[4]. By allowing multi-unit buildings in residential areas dominated by single family homes, upzoning is cited as a way to address and undo patterns of residential class- and race-based segregation that are enforced through existing exclusionary and hierarchical zoning[5,6]. The increased density expected through up-zoning is cited as a way to shift transportation mode away from cars towards more sustainable, less fossil-fuel intensive modes such as walking, cycling and public transit.

This research is a spatial policy analysis that tests how these proposed zoning reforms are likely to address the claims of affordability, equity and sustainability by the way they touch down on the ground. Starting with the policy geographies in each of the cities, we identify how much the reforms propose to change the urban form, and use census data to see where and who they impact. In each city, we identify the policy areas and degree of intensification or redevelopment they entail. Using a representative streetscape from each policy area, we visualize the existing urban form and compare it to the changes

envisioned by the zoning reform. Next we document the types of housing by tenure and built form as well as the characteristics of the current residents (by racialization, immigration status, income) and the degree to which they would be affected by the zoning reform, with attention to existing affordable rental housing and the possibility of displacement through redevelopment. We compare this to the demographics and housing stock characteristics of the parts of the city that are least affected by this zoning reform. Finally, we look at the current mobilities and densities of the commute for each of the impacted and non-impacted areas to estimate possible mode shift, accounting for the interaction of socioeconomics with transit modes.

We conclude with a consideration of the policy discourse and governance source of the zoning reforms in each city, and a look at the political coalitions and social movements that have aligned in support or opposition. By comparing the political economy of each city's zoning reform policy with the way it touches down on the ground in terms of expected impacts on affordability, equity and sustainability, we can identify connections between the ideology, contestations and power relationships of policy formation and the spatial logics of implementation.

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Key Words: zoning, housing, affordability, equity, sustainability

ZONING FOR THE HOUSING CRISIS – A DISCOURSE ANALYSIS
Abstract ID: 115
Abstract within Pre-Organized Session 34

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Across the U.S. and Canada, housing is increasingly acknowledged as unaffordable. Proposals to fix this affordability crisis through zoning reforms are ubiquitous. The 'zoning solution' to the affordable housing crisis has been advocated at all levels of government, from a 2016 White House paper recommending zoning liberalization (White House, 2016), to statewide bills in California, Oregon and Washington, to municipalities such as Minneapolis upzoning much of their single-family home residential land. Based largely on neoclassical economic ideas of supply and demand, the basic premise is that restrictive land use and zoning regulations are increasing the cost of construction (Glaeser & Gyourko, 2003) and artificially hinder the supply of housing, therefore raising the cost of housing for consumers. Despite the continuing empirical and theoretical debates within housing scholarship surrounding the link between land use laws and housing cost (Rodríguez-Pose & Storper, 2020; Been et al., 2019; Imbroscio, 2019; Glaeser & Gyourko, 2003) politicians and policymakers across the two countries have implemented, are debating or have proposed new legislation to reduce restrictive zoning regulations to increasing housing supply and in turn, reduce housing cost. The discursive target is often land zoned for the single-family home common across many Canadian and American cities.

By no means universally accepted, upzoning, or the 'zoning solution' has still achieved a level of prominence in the debate around housing affordability seemingly disproportionate to the evidence of

reductions in housing costs. How did zoning come to achieve this prominence as an accepted solution to the crisis of housing affordability? How did this idea spread among North American cities? What alternatives were precluded in the discussion? What are the reasons and logics given for upzoning as a response to the housing crisis? And finally, who does the discourse surrounding the zoning solution focus on and who does it exclude? To this end, this paper proposes to fill a gap in this literature by tracing the origins of the link between zoning and affordability across public discourse.

Through investigating federal, state, and municipal policy documents and media discourse surrounding proposed or actual changes to zoning regimes in Minneapolis, Los Angeles, and Seattle this paper will illustrate the genealogical links of the zoning solution to fix the affordable housing crisis. These proposed and actual zoning changes include Minneapolis's 2040 Plan, California's failed State Bill 50 and Proposition JJJ in the Los Angeles context and HALA and Washington State's proposed Accessory Dwelling Bills in the Seattle context. Each document will be coded for the arguments as to why housing is unaffordable, what the benefits of the 'upzoning' solution are (both related to and beyond housing affordability), who is expected to benefit and the actual proposed form of zoning solution among other key variables. Preliminary results suggest that the 'zoning solution' is not new, the call for upzoning and less municipal land controls broadly mirrors the rise of calls to reduce regulation during the 'neoliberal turn', instead the discourse has mutated to capture a changing problem as the need for affordable housing has become more acute. Persistent framing of the crisis as primarily a supply issue likely hinders other possible policy interventions such as direct public provision of housing, demand-side solutions, and improved tenant protections.

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Key Words: affordable housing, upzoning, discourse analysis, housing policy, zoning

HOW DO UPZONINGS IMPACT NEIGHBORHOOD SOCIOECONOMIC CHANGE? EXAMINING GENTRIFICATION AND UPZONING ACTIVITY IN NEW YORK CITY
Abstract ID: 971
Abstract within Pre-Organized Session 34

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As cities across the country contend with rising rents and property values, recent scholarship has placed renewed attention on examining how various interventions in the built environment exacerbate gentrification pressures, from investments in public transit to green amenities. Although gentrification has long been conceptualized as a result of public sector, private market, and individual actions, recent scholarship has paid less attention to how public sector interventions and investments shape neighborhood change (Zuk, Bierbaum, Chapple, Gorska & Loukaitou-Sideris, 2018). This elision in the literature matters given that state interventions in the built environment could play an outsize role in determining how cities distribute costs and benefits across the urban fabric and which communities experience

subsequent risks and rewards. In particular, minimal research has examined how public sector-led upzonings, which permit higher allowable densities, shape subsequent neighborhood socioeconomic change.

Previous research to date has sought to identify the determinants of upzonings. For example, Gabbe (2019) investigates which parcel- and neighborhood-level characteristics influenced the likelihood that areas in select Silicon Valley cities (San Jose, Sunnyvale, and Santa Clara) were upzoned or downzoned in the early 2000s. In a related study, Been, Madar, and McDonnell (2014) examine the extent to which two different theories of urban growth–"growth machine" politics or "homevoter" theories–influenced the probability of parcels being upzoned or downzoned in New York City in the early 2000s. Examining a series of upzonings in Chicago between 2013 and 2015, Freemark (2019) investigates how upzonings affect changes in residential transaction values and short-term housing production levels. Yet, minimal research to date has examined how increasing the allowable density of a neighborhood affects subsequent demographic change.

This research paper will address this gap in the literature by investigating how a series of rezonings in New York City in the early 2000s impacted subsequent neighborhood socioeconomic change. Using a difference-in-differences approach, this paper will attempt to estimate the effect of upzonings on neighborhoods that experienced a high concentration of upzoning activity compared to similar neighborhoods that were not upzoned. This research is timely, as planners and policymakers have increasingly eyed upzonings as a solution to address the affordable housing crisis, but have been met with skepticism from several interest groups, from homeowners concerned about how upzoning will increase property values to community groups concerned that upzonings will increase gentrification pressures and disproportionality displace communities of color. As upzonings gain more traction among planners and policymakers, this research aims to illuminate the potential costs and benefits of upzonings.

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Key Words: upzoning, density, land use, gentrification, neighborhood change

PLANNING FOR 'INFORMALITY' IN LOW COST RENTAL HOUSING MARKETS – FROM SECONDARY DWELLINGS TO TINY HOMES AND ILLEGAL UNITS IN THE US, EUROPE AND AUSTRALIA
Pre-Organized Session 67 - Summary
Session Includes 273, 274, 275

GURRAN, Nicole [University of Sydney] nicole.gurran@sydney.edu.au, organizer

With affordability pressures afflicting cities throughout the world, there is rising interest in the potential for diverse and lower cost housing types to increase rental supply. A growing number of jurisdictions have reformed local planning codes to enable and even incentivise flexible housing types, from secondary dwellings to 'tiny homes', manufactured housing estates, micro apartments and room rental or capsule accommodation. The outcomes of these deregulatory initiatives to legitimise often longstanding sources of lower cost accommodation of uncertain legality remain unclear. This session brings together a range of research efforts from the US, Europe, and Australia, to examine emerging evidence on: • deregulatory

planning system initiatives designed to increase informal, diverse, or low cost rental housing • the prevalence and role of lower cost rental housing that remains non-compliant with existing planning regulation • implications for enforcement practices which must balance health and safety risks to occupants of unpermitted units against further exacerbating their housing vulnerability; and • comparative methodological approaches to researching the informal housing sector in the US, Europe and Australia.

Objectives:

- To understand and compare the role of 'informal' and diverse housing in low cost rental sub-markets across Europe, the US, and Australia.
- To appreciate tensions associated with illegally produced housing units and their regulation
- To consider the opportunities and risks associated with planning strategies to deregulate or encourage informal housing types as a response to affordability pressures.

IS 'INFORMAL' HOUSING AN AFFORDABILITY SOLUTION FOR EXPENSIVE CITIES? EVIDENCE FROM SYDNEY, AUSTRALIA
Abstract ID: 273
Abstract within Pre-Organized Session 67

GURRAN, Nicole [University of Sydney] nicole.gurran@sydney.edu.au, presenting author

With housing affordability pressures mounting in the world's wealthiest cities, low income earners are increasingly dependent on informal and sometimes substandard rental accommodation ranging from secondary units through to room rentals and subdivided apartments (Harris, 2018). Indeed, planning reform to enable secondary and micro rental units within established residential areas is increasingly promoted to allow households greater flexibility in meeting their changing housing needs while also encouraging lower cost rental housing provision through the private market (Anacker & Niedt, 2019; Wegmann & Chapple, 2014). But this informal rental market remains largely hidden from view, while the outcomes of reform efforts to enable more diverse and informal housing production remain under-researched.

This paper addresses these themes, examining the 'informal' housing sector and its contribution to low cost rental supply in Sydney, Australia. One of the world's most expensive cities, Sydney has witnessed a decade of planning reforms to deregulate 'informal' and low cost rental production alongside wider measures to boost housing supply. The paper examines these initiatives and their implications for understanding the role of informality within high cost housing markets, examining housing supply and affordability data over the period, reviewing a unique dataset of online rental listings, and drawing on interviews with local government personnel. Written descriptions and photographic images for a total of 285 lower cost rental listings advertised on the nation's largest property platform 'Realestate.com.au' were examined and classified according to dwelling type and rental value, building a unique window into informality and non-compliance across Sydney's low cost rental sector.

The findings show that informal secondary units and room rentals dominate Sydney's lower cost market, but rents remain high relative to incomes even for substandard accommodation. Further, and despite reforms to encourage new secondary dwellings and low cost rental supply, squalid and non-compliant housing persists, exposing tenants to serious risks. The findings suggest that in high cost cities such as Sydney, the informal sector occupies an important and largely unrecognised role in housing low income renters, but that more systemic reforms beyond the planning system are needed to improve housing outcomes for disadvantaged groups.

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BUILDING A NATIONAL COMMUNITY TYPOLOGY OF REGULATIONS FOR ACCESSORY DWELLING UNITS (ADUS), MOBILE, RV, AND TINY HOMES IN THE UNITED STATES
Abstract ID: 274
Abstract within Pre-Organized Session 67

ANACKER, Katrin [George Mason University] kanacker@gmu.edu, presenting author

Over the past several years, most communities and many residents in the United States (U.S.) have been affected by a housing affordability crisis (Anacker, 2019). Most planners and policymakers have difficulties addressing the demand for housing as there is freedom of movement. Over the past several decades, housing policymakers have directly addressed housing supply through public housing for renters and the Section 8 New Construction and Substantial Rehabilitation for builders. Housing finance policymakers have indirectly addressed housing supply through Low Income Housing Tax Credits (LIHTCs), Community Development Block Grants (CDBGs), the HOME Investment Partnership program, federal, state, and local housing trust funds, and grants to Community Development Corporations (CDCs). Recent discussions of affordable housing supply have focused on Accessory Dwelling Units (ADUs; Anacker and Niedt, forthcoming) and converted garages (Brown et al., 2020). Interestingly, not much work has been undertaken on mobile, RV, and tiny homes in connection with the housing affordability crisis (Kahn, 2012; Peterson, 2018; Salamon & MacTavish, 2017; Sullivan, 2018). This study fills this gap.

I utilize the National Longitudinal Land Use Survey (NLLUS), conducted by Pendall in 1994, by Pendall, Wegman, and Martin in 2003, and by the Urban Institute and Pendall in 2019 (Urban Institute, n.d.). The NLLUS 1994 Land Use Dataset includes data on jurisdictions in the 25 most populous metropolitan statistical areas (MSAs) or Combined Metropolitan Statistical Areas (CMSAs) as of 1990 (n = 1,168). The NLLUS 2003 Land Use Dataset contains data on jurisdictions with populations over 10,000 in the 50 most populous MSAs and CMAs as of 2000 and 50 additional jurisdictions with fewer than 10,000 residents in metropolitan areas where jurisdictions with more than 10,000 people covered less than 60 percent of the total MSA land area (n = 1,845). The NLLUS 2019 Land Use Dataset includes data on jurisdictions with populations over 10,000 with the top 50 Core Based Statistical Areas (CBSA) and a sample of land use planning empowered jurisdictions with populations under 10,000 in select CBSAs (n = 1,703). For the combined three data sets there are 446 repeat respondents. I also utilize data from the decennial 1990, 2000, and 2010 Censuses and the American Community Survey (ACS; 2000s and 2010s).

I analyze demographic, socioeconomic, and housing characteristics in connection with regulations for Accessory Dwelling Units (ADUs), mobile, RV, and tiny homes through descriptive statistics and t-tests to build typologies for each of the 1994, 2003, 2019 data sets, and then for the longitudinal data set. Preliminary results indicate that more communities regulate mobile homes compared to tiny homes, RVs, and ADUs and that there are statistically significant differences in terms of demographic, socioeconomic, and housing characteristics. Finally, I also discuss federal, state, and local policy implications based on these results.

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Key Words: Housing affordability, Accessory Dwelling Units (ADUs), mobile homes, tiny homes, RVs

THE AFFORDABILITY ROLE OF ILLEGAL ACCESSORY HOUSING: A CHALLENGE TO STATIC PLANNING REGULATIONS AND ENFORCEMENT PRACTICES
Abstract ID: 275
Abstract within Pre-Organized Session 67

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In many cities across the world, accessory housing units and subdivided apartments violate planning regulations. Yet they are often an important component of affordable rental housing, thus posing difficult challenges to the static nature of planning regulations and to enforcement practices. The reported research focuses on accessory (illegal) housing units in neighborhoods with generally adequate housing standard. There, ADUs are a stock of rental housing that is more affordable than equivalent legal units because ADUs are usually retrofitted as part of an existing house or apartment and rely on pre-existing public infrastructure, without requiring significant public expenditures. Although illegality can hide substandard housing, ADUs in many, where the ADUs do not violate housing codes, they have many positives. They contribute towards gradual densification, have a low environmental footprint, and are socially and demographically diversifying. The paper reports on socio-legal research conducted in Israel - an especially intensive "laboratory" due to this country's fast-growing population and high housing prices. Illegal ADUs probably contribute an important part of the rental housing stock. New legislation (a second attempt) intended to enable the creation of legal ADUs or legalization of existing ones is likely to fail due to legal intransigence. The empirical research analyses the current and projected impacts of recently fortified enforcement in several case-study towns selected to represent a range of housing types, locations and prices. The findings indicate that instead of increasing affordable housing, as the legislation's objectives declare, the new rules might have the contrary effect. The conclusions point to the need for deep rethinking about the role of planning regulations, enforcement, and their capacity to meet dynamically changing housing needs.

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PLANNING FOR AND RESPONDING TO STUDENT-DRIVEN HOUSING DEVELOPMENT IN UNIVERSITY NEIGHBORHOODS
Pre-Organized Session 70 - Summary
Session Includes 671, 672, 673, 674

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Rising college and university enrollments—and lagging dormitory construction—have fueled demand for student housing in recent years. Private developers have stepped in, building large multifamily housing complexes in campus-adjacent neighborhoods. This session interrogates the implications of these real estate trends for planning, with in-depth analyses of the development process that assess the consequences for students and higher education institutions, as well as for residents of surrounding neighborhoods. The papers include: an analysis of housing construction near university campuses across the US; a case study of university-led gentrification in Harlem, New York after World War II; an examination of zoning deregulation and student housing development in Champaign, Illinois; and a paper which delineates class and age conflicts around student housing in Waterloo, Ontario. Together, these papers consider planning responses to promote equitable and inclusive housing opportunities.

Objectives:

- Attendees will become familiar with past and current trends in student housing development.
- Attendees will understand how large-scale student housing development impacts campus-adjacent neighborhoods.
- Attendees will learn about a range of planning approaches and community responses to student housing development

THE RISE OF LARGE-SCALE STUDENT HOUSING DEVELOPMENTS IN UNIVERSITY NEIGHBORHOODS
Abstract ID: 671
Abstract within Pre-Organized Session 70

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Over the last two decades, higher education institutions (HEIs) and their neighborhoods have experienced significant change. At HEIs across the US, college and graduate student populations expanded rapidly from 2000 to 2016, with the generational swell of Millennials reaching young adulthood and higher-than-ever enrollment rates. Dormitory construction did not keep up, so students increasingly turned to off-campus housing alternatives (Arbury 2012). Concurrently, the US housing market went through major swings—from the housing boom of the early 2000s, to the 2008 foreclosure crisis and subsequent recession, to the rising rental affordability crisis. The confluence of these two changes stimulated new interest in campus-adjacent living in urban neighborhoods across the US. Private developers have increasingly pursued new multi-family residential projects near HEI campuses, constructing superblock buildings with floor plans and amenities that appeal to students (e.g., Gallun 2016). In many cases, these developments have been financed by real estate investment trusts (REITs), which have been eager to

capitalize on a new market fueled by off-campus student housing demands (Revington and August 2019; Revington et al. 2018). Collectively, these real estate trends hold substantial implications for HEIs, students, and adjacent neighborhoods—now and in the future.

In this paper, we investigate how new development has impacted the housing landscape in HEI neighborhoods. We assess housing development trends in HEI-adjacent neighborhoods across the US, focusing on the relatively recent phenomenon of large-scale rental projects marketed towards students. Quantitatively, we use The Integrated Postsecondary Education Data System data on HEIs combined with Census and ACS housing stock data to measure changes in the composition of rental housing units in census tracts within ¾ mile of four-year, degree-granting public and private non-profit institutions throughout the US from 2000 through 2018. We analyze changes in the stock of rental units in large multifamily structures as compared with smaller multifamily and single-family rentals, controlling for changes in full-time enrollment and dormitory construction. We contextualize this data with qualitative assessments of development in these neighborhoods, including interviews with multi-family residential developers and other real estate actors near HEIs.

Our research examines the degree of change in campus-adjacent neighborhoods and begins to quantify the reach of student-centered luxury apartment trends in urban HEI neighborhoods. Further, it calls into question the lasting legacies of these development trends for students, campus-adjacent neighborhoods, and small-scale rental units (e.g., Smith, Sage, and Balsdon 2014; Revington et al. 2018). We contend that increased student housing demand alongside the development of superblock-style apartment complexes has altered the fabric of many HEI-adjacent neighborhoods, changing the built environment for decades to come. Their presence introduces competition for small-scale landlords in these communities, as well as questions for the future of residential demand with projected enrollment declines. Further, the emergent "luxury" apartment trend creates new challenges for planners concerned with housing affordability for students and long-term neighborhood residents alike.

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Key Words: student housing, real estate development, higher educational institutions, housing affordability, neighborhood change

BUILDING THE GENTRIFICATION MODEL: COLUMBIA UNIVERSITY AND HARLEM, 1945 TO 1968
Abstract ID: 672
Abstract within Pre-Organized Session 70

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Gentrification and displacement are viewed as problems that emerged in cities during the 1990s and beyond. This paper argues that the gentrification danger emerged much earlier in New York City. In the aftermath of World War II, as big science and Cold War dynamics drove the expansion of Columbia, the university with the assistance of the University of Chicago, began to formulate a unique "gentrification" model for developing Harlem, a neighboring black community. With the assistance of Wilbur C. Munnecke, Vice-president of the University of Chicago, proposed a market-centered strategy that would attract "desirable" blacks to Harlem, while using a slum clearance strategy to uproot and displace "undesirable" blacks. The intent was to build a community based on "interracial" living for the middle-classes. Black residents fought back, and the student rebellions of the late 1960s put the strategy on hold.

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Key Words: gentrification, neighborhoods, racism, university, displacement

A NEW SKYLINE FOR CHAMPAIGN: DID REZONING DRIVE STUDENTIFICATION?
Abstract ID: 673
Abstract within Pre-Organized Session 70

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The current housing affordability crisis has resulted in vocal challenges to local land-use regulations, especially in high-cost markets (Manville, Monkkonen, and Lens 2020, Wegmann 2020). In high-density neighborhoods, reducing or eliminating minimum parking requirements has been proposed as a way to unlock apartment construction (Chester, Fraser, Matute, Flower, & Pendyala, 2015; Gabbe & Pierce, 2017; Shoup, 2005). Amid all the protests and proposals, however, long-standing questions still persist: How much does land-use regulation really matter (Fischel 1989, Landis 1992, Pendall 1999)? More specifically, to what extent is zoning a reflection of what builders want to build more than a constraint— that is, is zoning endogenous (Pogodzinski and Sass 1994)? And even if zoning matters, what additional constraints to development might obstruct development of high-density housing that must be addressed before private-sector actors decide to build student apartments, or indeed any new apartments (Ehlenz 2018)?

We focus on a single case study of student housing in Champaign, Illinois to understand the relationship

between (de)regulation, housing demand, university imperatives, and local infrastructure policies. The analysis traces two recent regulatory reforms: eliminating parking requirements and modifying required open space ratios. We track the transformation of housing in the extended University of Illinois at Urbana-Champaign Campustown area and situate it within the complex adaptive system of local land-use change by relying on archival analysis and interviews with municipal planners, developers, university agents, and consultants with planning and/or development expertise in and around the study area.

We find that early place-making actions of a local entrepreneurial public university combined with changing student housing demand preferences to create an environment attractive to outside real estate development investment. The local municipality's by-right development approvals process recently amplified new development incentives when they eliminated all parking requirements. But we find that contrary to local claims that this change produced the increase in densification through multifamily student housing development in and around the core campus area, planned unit developments and exceptions to the zoning code created a de facto zoning change which dates back to earlier pioneering growth coalition place-making efforts.

Our results raise questions about policy prescriptions that call for rezoning as a panacea resolving high housing costs. As has often been shown, regulatory reforms work with support from plans, investments, and capital flows. Rezoning was only one action among many that have enabled the addition of 10- to 25-story buildings to Campustown's previous stock of 2- to 3-story apartments. At least as important were major infrastructure investments by the City and the university and the flow of capital into student housing following the single-family mortgage crisis. As well, the rezoning largely "legalized reality," rather than removing a constraint, since the City readily granted exceptions and variances well before changing the zoning.

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Key Words: zoning, parking, student housing, real estate development

STUDENT HOUSING AS INTERGENERATIONAL PLANNING PROBLEM: IMPLICATIONS FOR PRACTICE AND PRAXIS
Abstract ID: 674
Abstract within Pre-Organized Session 70

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Scholars have coined the term "studentification" to refer to processes by which students become concentrated in particular urban neighbourhoods. This process may involve the conversion of existing housing stock, including so-called "single-family" homes, into student rentals, or – as is increasingly common – the development of private purpose-built student accommodations (PBSA) (Smith & Hubbard,

2014). In either case, studentification is associated with investments in the built environment catering to, and reliant on, the definition of a particular student life course stage. Problems such as noise and other behavioural issues, property maintenance shortcomings, and housing affordability concerns are common, precipitating planning responses. Yet, how issues are conceptualized shapes how planning practice responds. Many of the problems associated with student housing are symptomatic of class and age differences underlying studentification (Sage et al., 2012), requiring direct engagement with its inherent age-related conflicts in addition to market dynamics. Typical planning approaches to student housing have not engaged in this way, but rather have attempted to treat symptoms rather than root causes. The result has been a tendency to segregate students by keeping them out of certain areas through rental housing restrictions or directing them to other areas by encouraging PBSA development.

In this paper, I begin by outlining the class and age dimensions of conflicts relating to student housing, and planning attempts to resolve them. To conceptualize and address studentification as an intergenerational planning problem, I then advance a theoretical framework, mobilizing elements of urban political economy (Harvey, 1985) alongside the emerging concept of "intergenerationality," based on a relational life course perspective (Vanderbeck, 2019). This framework points to a radical reconfiguration of the politics of the "town and gown" relationship, and with it, alternative planning possibilities. Finally, I reflect on the practical implications of this shift for formal municipal planning, post-secondary education institutions, and housing advocates, respectively. The analysis is grounded in empirical evidence from more than four years of research in Waterloo, Ontario, including planning documents, real estate industry filings and grey literature, and semi-structured interviews with 44 key stakeholders and 27 students. Waterloo represents an ideal case for this research, home to two major universities and nearly half of Canada's private PBSA (Revington & August, 2019). As a dynamic site of studentification processes – both anticipated and responded to by planning – it therefore offers valuable lessons for other university cities. Findings point to concrete planning measures that can be taken to build an equitable and inclusive "post-studentification" city and provide a theoretical framework that can be adapted to other age-related planning conflicts.

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Key Words: studentification, planning theory, intergenerationality, life course, housing

EVOLVING SINGLE FAMILY NEIGHBORHOODS, PART 1: SINGLE FAMILY RENTALS & ACCESS TO OPPORTUNITY
Pre-Organized Session 85 - Summary
Session Includes 30, 390, 931

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U.S. single family home neighborhoods are evolving. These changes are occurring in response to shocks, like the recent Great Recession and foreclosure crisis, changing perceptions, such as growing interest in climate change and living in more walkable, diverse, and connected communities, and new policies allowing for multifamily development in historically single-family zoned neighborhoods. Questions

abound about how these changes manifest in particular kinds of places and are affecting diverse outcomes, from regional social equity in access to housing to social connectedness and capital among neighbors. This session will explore the nuances, trajectories, and outcomes of evolving single-family home neighborhoods and offer emerging lessons, projections, and ideas for planning practice.

Objectives:

- Evaluate how growth in single-family rentals relates to access to housing for diverse groups

EXPANDING THE GEOGRAPHY OF OPPORTUNITY? INSTITUTIONAL INVESTMENT IN SINGLE-FAMILY RENTAL HOUSING (SFR) IN THE ATLANTA METROPOLITAN AREA
Abstract ID: 30
Abstract within Pre-Organized Session 85

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In the wake of the 2008 housing crisis in the United States, publicly traded institutional real estate investment firms—real estate investment trusts (REITs)—bought up foreclosed single-family houses in-bulk and converted them to single-family rental housing (SFR). Enabled by federal policies put in place to ameliorate effects of the crisis, SFR was initially located in neighborhoods with high rates of foreclosures and low house values (Immergluck, 2018). But in the 10 years since the crisis, REITs' investment portfolios have evolved to conform to their refined business strategies—to focus on SFR in neighborhoods with above average household incomes and well-regarded schools.

The increasing financialization of SFR, and the business practices of REITs in particular, contribute to housing insecurity and unaffordability; but, SFR may also serve as a means by which households gain access to desirable neighborhoods once only accessible to households with the wealth and the desire to purchase a house (Ihlanfeldt & Mayock, 2019; Pfeiffer & Lucio, 2015a, 2015b). Access to housing affects one's access to "opportunity structures," which Galster and Killen (1995, p. 7) define as the "social systems, markets, and institutions that aid in upward mobility." Advantaged neighborhoods foster intergenerational social mobility for children from low-income households through their high-quality schools, local social networks, and access to employment (Chetty et al., 2014). It follows, then, that SFR in advantaged neighborhoods may provide access to the spatially constituted opportunity structures therein.

The emergence of SFR REITs in suburban housing markets has altered how households access single-family housing. Yet, few studies examine the potential for REIT-owned SFR to counter housing exclusion and enhance access to the opportunity structures that some suburban neighborhoods offer. Using property-level data for all single-family houses in the 20-county Atlanta metropolitan area, this paper examines whether increases in REIT-owned SFR have enabled low-income households greater access to neighborhoods that offer greater opportunities for children–those within the attendance zones of high performing elementary schools—or if it has instead maintained and/or reinforced residential segregation in the region. Findings have implications for municipalities presently considering regulating SFR within their jurisdictions.

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THE RISE OF SINGLE-FAMILY RENTALS IN SUBURBAN NEIGHBORHOODS: A QUESTION OF OPPORTUNITY FOR THE CHILDREN OF LOW-INCOME FAMILY RENTERS
Abstract ID: 390
Abstract within Pre-Organized Session 85

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There are advantages to living the suburbs. In general, suburban residents enjoy higher incomes, less poverty, more wealth, improved health, and better access to high quality schools than residents of cities (Squires and Kubrin, 2005; Logan, 2002; Logan, Minca, and Adar, 2012). Yet, the suburbs are changing. One area of transformation is the rise in suburban single-family rentals (Immergluck, 2018; Charles, 2020). This is, in part, because of the conversion of single-family homes from owner-occupied to rented following the foreclosure crisis (Eggers and Moumen, 2011). Investors purchased foreclosed homes to rent, taking advantage of the availability of vacated properties at a steep discount (Fields, Kohli and Schafran, 2016). Recent research notes the role of Real Estate Investment Trusts (REIT) in this process as large institutional investment firms bought portfolios of heavily discounted single-family homes to rent (Charles, 2019). The number of single-family rentals (SFR) increased by more than 2.5 million between 2009 and 2016 (Charles, 2019).

While large increases in SFR might negatively impact the social fabric of local communities, this rise might also expand single-family neighborhoods to renters who were previously excluded (Immergluck, 2018). This paper examines the potential benefits of the increase in SFRs in single-family neighborhoods for low-income renters. More specifically, we examine whether, because of rising SFRs, low-income renter families with children gained access to single-family neighborhoods of opportunity. Recent research notes the benefits specifically for children when they move to better neighborhoods (Chetty, Hendren and Katz, 2016). Moving from high-poverty to low-poverty neighborhoods may improve schooling outcomes (Johnson et al, 2002). Living in well-resourced and safe neighborhoods has a positive outcome on child health (Acevedo-Garcia, Noelke, McArdle, 2020). In this paper, we measure children's opportunity using the Child Opportunity Index, focusing on indicators related to education and health.

Using multinomial logistic regression, we identify the probability that low-income renter families with children live in neighborhoods where SFRs rose in the past decade. Preliminary findings suggest that despite rising SFRs, low-income renter families are more likely to live in low- and moderate- than high-opportunity neighborhoods. This research suggests there may be fewer benefits to low-income renter families of the rise in SFRs in single-family neighborhoods, and notes that not all single-family neighborhood have similar opportunities for children.

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"OUR CUSTOMER IS AMERICA": HOUSING INSECURITY AND EVICTION IN LAS VEGAS'S POST-CRISIS RENTAL MARKETS
Abstract ID: 931
Abstract within Pre-Organized Session 85

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In this paper, we examine "post-crisis" housing insecurity through an analysis of single-family rentals and residential motels and the evictions carried out on these properties in Las Vegas, Nevada. These are two important segments of the rental housing market from a policy perspective. Single-family rentals provide services typically associated with homeownership, but without the ownership benefits of housing security and wealth building. While renting is preferable to owning under certain conditions, it is important to investigate what happens when tenure choice is limited and landlords have increasingly become out-of-state corporate actors. In the wake of the foreclosure crisis, investors purchased hundreds of thousands of single-family homes in select markets and converted them to rentals. Activists and scholars have documented investor practices of fee gouging, raising rents, and automating evictions to maximize profits and safeguard investors' returns. Increased demand for rental housing since the crisis has constrained the options of low- and moderate-income households, tilting power toward investor-landlords and raising the odds of abuse. A similar, though less-remarked-upon dynamic plays out in residential motels, which often serve as housing of last resort. Households with impaired credit, irregular income, eviction records, and other barriers to mainstream rental housing often turn to motel operators charging relatively high rents for low-quality units.

Leveraging ten years of property ownership records, court-ordered evictions, and code enforcement violations, this paper examines post-crisis trends in ownership and evictions related to single-family rentals (SFR) and residential motels. We use logistic regression to test the association between eviction and ownership by large corporate landlords net of property and neighborhood characteristics. We find that local specialists, including one large entity who is also a major local motel operator, have both the highest adjusted and unadjusted eviction rates among large single-family landlords. Several large corporate landlords, like Blackstone (aka Invitation Homes), also exhibit higher odds of eviction relative to small landlords (< 15 SFR). Through descriptive analysis of motel ownership and evictions, we find large residential motels have both high absolute eviction numbers and high relative eviction rates. In the context of information obtained through interviews with tenants and legal aid attorneys, these results give additional shape to this segment of the rental market, where owners of residential motels leverage strong demand for housing with low barriers to entry while utilizing the confluence of short lease terms and rapid evictions to ensure returns. These results suggest the squeezing of renter households that would historically have been able to access and build wealth through homeownership, as well as the exploitation of the most precarious households consigned to the private market without assistance.

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Key Words: eviction, single-family rentals, motels, Las Vegas

EVOLVING SINGLE FAMILY NEIGHBORHOODS, PART 2: ADAPTIVE PRACTICES & EVICTIONS
Pre-Organized Session 87 - Summary
Session Includes 301, 393, 395

CHARLES, Suzanne [Cornell University] scharles@cornell.edu, organizer

U.S. single family home neighborhoods are evolving. These changes are occurring in response to shocks, like the recent Great Recession and foreclosure crisis, changing perceptions, such as growing interest in climate change and living in more walkable, diverse, and connected communities, and new policies allowing for multifamily development in historically single-family zoned neighborhoods. Questions abound about how these changes manifest in particular kinds of places and are affecting diverse outcomes, from regional social equity in access to housing to social connectedness and capital among neighbors. This session will explore the nuances, trajectories, and outcomes of evolving single-family home neighborhoods and offer emerging lessons, projections, and ideas for planning practice.

Objectives:

- To assess how residents of single family home neighborhoods are adapting their homes to meet their needs.
- To describe why some landlords in single family neighborhoods choose to evict their tenants and others choose not to evict.

THE SUPPLY-SIDE OF EVICTION: THE MANY WAYS THAT LANDLORDS DEAL WITH BACK RENT
Abstract ID: 301
Abstract within Pre-Organized Session 87

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In recent years scholarship has shown that evictions are very common across the US and cause severe, lingering disruptions in tenants' lives. Much of the scholarship on evictions (both formal and informal) has focused on who gets evicted, and the consequences of evictions on tenants (Desmond, 2016). Low-income women, particularly those with children, are disproportionately the target of evictions. Evictions hurt tenants in many ways. Studies show that moves caused by either formal eviction or the real threat of eviction are associated with worse mental and physical health outcomes, material hardship, and relocations to worse neighborhoods.

Evictions are usually discussed as the result of structural changes in the US economy, but the specific

reasons why landlords choose to evict tenants may also be important. For many years rents have increased faster than incomes and public subsidies have not risen to cover this gap. One result is more precarious housing situations, particularly at the low end of the market. However landlords are not a monolithic group, and there are signs that landlords consider eviction in very different ways. Garboden & Rosen (2019) find that, for some landlords, the threat of eviction is a routine method of rent-collection. Raymond et al. (2016) find that professional or corporate landlords evict tenants at higher rates than smaller scale "mom and pop" landlords. Why do some landlords immediately start the eviction process when rent is late, while others wait weeks or months?

This paper examines what the owners of small rental properties (1-4-unit properties) do when they have problems with their tenants, particularly regarding rent non-payment, and whether there are generalizable differences in how owners consider eviction. To answer these questions I designed and conducted a large survey of small rental property owners. The survey asked owners and managers how they dealt with tenant problems and the subject was probed in more detail in follow-up interviews. The survey was conducted on a stratified random sample of 53,000 owners in the top 150 metro areas in the US. Additionally, I conducted 161 interviews with an average duration of an hour.

Understanding the reasons why some landlords routinely use eviction to deal with tenant problems, while others use it as an option of last resort, could help governments craft effective and equitable policies meant to reduce eviction levels. States and municipalities have a broad range of interventions at their disposal such as right-to-counsel laws, just-cause statutes, and emergency rent subsidies. Understanding the behavior of landlords, in addition to the plight of tenants, will help ensure that public officials implement policies that limit the damage that eviction can cause in a fair and responsible way.

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Key Words: Single-family rentals, eviction, landlords

MUNICIPAL RESPONSES TO INFORMAL MULTIFAMILY HOUSING IN DIVERSE SUBURBS: THE CASE OF RAMAPO, NEW YORK
Abstract ID: 393
Abstract within Pre-Organized Session 87

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Immigrants and ethnic minorities are at the front lines of challenging single family zoning in the suburbs. Yet the changes enacted by these communities tend to be ad-hoc and informal—and have thus far avoided serious academic attention. This is particularly true of single family home conversions, in which a house is subdivided, or otherwise altered, to accommodate additional residents. Conversions are glanced at in most accounts of so-called "ethnoburbs," but that literature tends to focus more on the aesthetics of immigrant-owned single family homes (Li, 2009, Cheng 2013, Lung Amman, 2017). Similarly, scholars and policymakers interested in overturning single family zoning tend to avoid the messy types of dense housing found in suburban ethnic enclaves (Manville et al, 2019). Yet, if we want to understand a post-single family future, we must engage seriously with the actual, existing densification experiments being undertaken in diverse suburbs. In particular, we must better understand how municipal authorities and

planners engage with "incoming" communities that pursue single family home conversions, how informal or quasi-legal housing practices are incorporated into formal law, and what happens after single family zoning is overturned.

This paper looks to investigate two questions. First, how do municipal authorities respond to demands for single family home conversions, especially when the demand comes from an ethnic or linguistic minority group? Second, what happens to the built environment, and local politics, after single family zoning is loosened to allow said conversions? These questions are explored through an investigation of one extreme case study: Ramapo, New York. In 1986, single family home conversions were legalized in Ramapo following at least a decade of aggressive censure from the municipality. The path to legalization proceeded in conjunction with the growing political power of the ultra-Orthodox Jewish community there, and culminated with the creation of an innovative zoning district that allows families to convert their homes into up to three units. Ramapo is a unique case where conversions "migrated" over time across a spectrum of legality and scale. As such, it can help clarify the variability of municipal responses to conversion. It also provides a rare window into what happens when flexible zoning is introduced into a heretofore uniformly single family suburban context.

This paper begins with an introduction to Ramapo and the unique housing pressures of ultra-Orthodox Jews. Archival records are then analyzed from the period between 1970 to 1986, to show how growing ultra-Orthodox political power forced municipal action to legalize single family home conversions. In the second section, archival records, semi structured interviews, municipal property records, and American Community Survey (ACS) data is used to determine whether the conversion law met its (openly stated) goal of absorbing, and containing, ultra-Orthodox housing demand. Preliminary findings indicate the answer is contradictory: the conversion district unlocked hundreds of new units, but it did not end informal housing practices in the ultra-Orthodox community—nor temper the municipal controversy around those practices. Finally, the paper concludes with a short discussion of what the Ramapo conversion district tells us about the possibilities and pitfalls of legalizing conversions and eliminating single family zoning. By analyzing Ramapo in relation to neighboring towns, the paper argues that issues of power and citizenship are crucial in determining how municipalities react to single family home conversions and that the relationship between single family zoning, affordability, and exclusion is more complex than commonly presented.

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Key Words: land use, suburbs, single family zoning, municipal politics

GARAGES AREN'T JUST FOR CARS: HOW SINGLE-FAMILY HOME RESIDENTS ARE REPURPOSING THEIR GARAGES TO PROSPER, PREACH, AND PLAY
Abstract ID: 395
Abstract within Pre-Organized Session 87

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A common feature of the U.S. suburban landscape is the garage home, a kind of home where the garage and driveway take up a large portion of the front of the home. Garage homes use land efficiently, which offers profitability for developers and affordability to households; yet, they are blamed for various

neighborhood ills, including a lack of physical activity and socialization among neighbors (e.g., Hayden 2004; Bello & Adler 2004). Despite their popularity and concerns about their social impacts, there have been few attempts to explore the uses, prevalence, and geography of garage homes. This research helps to fill this gap by using a mixed-methods approach in Phoenix, Arizona, a quintessential suburban region.

First, I develop a taxonomy of garage home designs and uses through participant observation, an exploratory analysis of data from a windshield survey of Phoenix area single-family homes, and a systematic review of Instagram posts, traditional media, and the scholarly literature. Preliminary results show diverse kinds of adaptations, from gyms to churches to homes. Then, I use 2017 data from the U.S. Census and Phoenix Area Social Survey, which is a sample of twelve socially and ecologically distinct communities in the region, to quantify the prevalence of these designs and uses and explore their place-based correlates. I expect to find that these uses are correlated to distinct neighborhood dynamics.

Overall, this research will help to identify 1) to what extent garage homes define the U.S. suburban landscape, 2) how people adapt garage homes to meet their needs, as evident by their outward physical features, and 3) where different kinds of garage homes are most likely to occur. The findings will help local practitioners and advocates develop targeted strategies to harness the opportunities and remedy the potential harms of garage homes for residents.

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Key Words: suburbs, housing

NEW OR NOT? INCREMENTAL HOUSING NOW
Pre-Organized Session 90 - Summary
Session Includes 485, 486, 487, 489, 492

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Informal housing production is widely seen in the Global South as the incremental and adaptive response to conditions of housing inequality. Parallel processes in the United States are less understood, yet are the focus of emerging research about how planning might most appropriately meet the needs of economically disadvantaged communities. Indeed, the idea and practice of self-help housing, incremental housing and land subdivision, and housing regeneration underlie urban transformation in both the Global North and the South. We explore whether engagement with incremental housing processes – formal and informal – is radically new, or if this familiar form of city-making is being expressed in substantially new directions, forms, and geographies. This panel will present recent research that problematizes contemporary incremental housing through three comparative themes: 1) densification and renting; 2) housing subdivision; and 3) big and small data for mapping, monitoring, and measuring incremental housing. South – north knowledge networks provide a critical source for renewed attention to global housing inequalities.

Objectives:

- Exposure to recent work in the area of incremental housing, from a global comparative perspective.
- Enhanced understanding of informality and planning responses in the United States.
- Awareness of the potential for south – north knowledge networks to improve affordable housing globally.

THE MULTI-GENERATIONAL VERNACULAR: A STUDY OF INCREMENTAL SELF-BUILT HOUSING PROCESSES IN PAKISTAN
Abstract ID: 485
Abstract within Pre-Organized Session 90

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Self-built multi-generational housing is an essential part of neighborhood practices in much of Pakistan even today. This is due the sense of agency and autonomy many Pakistani families and communities thrive for in home-building processes (Tariq, 2012). An owned house, much like in many parts of the both developing and developed world, is associated with security and stability for communities in the region and plays a role in socio economic perceptions of each other (Malik et al., 2018). Although attempts have been made by the private sector to create more uniform housing communities in major cities of the country including Lahore, Islamabad and Karachi, self-building is still a major component of the housing market in Pakistan (Tariq, 2012). In addition, the multi-generational elements of housing stem from cultural and religious practices that promote integrated living between parents, their sons, and the sons' families. While neoliberal economies have inspired tendencies of nuclear family systems, specifically in urban communities, multi-generational family systems are still very much a prevalent component of household practices in middle and low-income neighborhoods. The combination of self-building and multi-generational needs, therefore, spark an incremental approach to the building process where basic ground level construction of housing on empty lots is ultimately converted to multiple stories of sections that are used by different members of the family usually categorized as aging grandparents, parents, and sons and their wives and children, over the course of multiple decades (Tariq, 2012).

Although much research has been done on microfinancing processes to facilitate incremental housing practices in low-income, informal communities and post-disaster relief (Tariq, 2011; 2012), there is not much detailed evidential research on multi-generational implications on incremental housing in Pakistan. Therefore, this paper aims to study incremental house-building practices specifically in the cities of Karachi and Islamabad through field research, that are aligned with creating more space for second and third generations. In addition to the spatial, material and economic components (Hanson, 1975), this study aims to explore the more social and gender-driven agencies in the self-building vernacular, and how this is framed in the larger policy agenda of local and national governments in terms of the promotion for urbanization and homeownership (Subhan and Ahmed, 2012).

Data will be collected through qualitative ethnographic field research in Summer 2020 in the cities of Karachi and Islamabad, particularly in neighborhoods that have predominantly low-income and middle-income households, across formal and informal neighborhoods. Neighborhoods will be identified through familial connections and relationships the author have in the two cities. This process will include interviews with families living in multigenerational households who have engaged in incremental self-building practices, and site visits, observations and photo journaling of the social and spatial elements of such practices. The aim is to highlight the intersectionality between class, legality and gender roles in the different households and delineate distinctions and patterns across these intersections in neighborhood characteristics and self-building processes. This will be tied to the larger constructs of urban governance and community agency in the country. The study will facilitate more South Asian perspectives of incremental housing alluded to cultural and traditional practices, and how this can impact perceptions on policy thinking and approaches to such self-built housing in the region, specifically in urban areas of Pakistan.

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Key Words: Multi-generational, Self-Building, Pakistan, Vernacular, Urban

A BIG DATA APPROACH FOR THE IDENTIFICATION OF INFORMAL SUBDIVISIONS IN THE UNITED STATES

Abstract ID: 486
Abstract within Pre-Organized Session 90

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Informal and unplanned residential development is accompanied by myriad negative consequences. In the United States, two relatively widespread but little studied types of neighborhood – mobile home communities and informal subdivisions – disproportionately expose residents to health, safety, and financial risks due to environmental, economic, and social vulnerability (Sullivan, 2018; Ward, 1999; Ward and Peters, 2007). The time-intensive nature of locating these communities limits their systematic study by scholars. This paper uses big data to develop a series of metrics capable of identifying and distinguishing between these communities. We use a data set of building footprints developed by Microsoft and released publicly in 2018 to measure the size, type, orientation, placement, and uniformity of housing in neighborhoods Hidalgo County, Texas, where more than 1,000 informal subdivisions have been documented by prior research (Durst, 2016). We use support vector machines and cross-validation to test the ability of these metrics to distinguish between three neighborhood types: informal subdivisions, mobile home parks, and formal subdivisions. Our models are capable of correctly classifying neighborhoods more than 95% of the time. We conclude by describing the methodological steps necessary to identify and systematically study these neighborhoods across the country.

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Key Words: Housing, Informality, Big data, Machine learning

FROM DWELLING ENVIRONMENTS TO DWELLING ECOLOGIES: RETHINKING GRASSROOTS DWELLING PRACTICE IN INCREMENTALLY SETTLED MARSHLANDS IN GUAYAQUIL, ECUADOR

Abstract ID: 487
Abstract within Pre-Organized Session 90

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The Latin American region once was a cradle for groundbreaking research on incremental urban development (Turner, 1963; Caminos, Turner & Steffian, 1969). While self-help and incremental housing approaches focusing on the housing agency have consolidated over time (Turner and Wakely, 2015), the deeper connection between housing, people's daily practices and the particular environmental condition of a place have got lost. Connecting grassroots dwelling practices with broader environmental questions and sustainability issues is, however, crucial as it often remains unclear how places are shaped through inhabitants' struggles and what true impacts ecological transformation can have on urban livelihoods built up over various decades (Hordijk, 1999; Hardoy et al., 2013).

This paper focuses on the consolidated informal settlements in Guayaquil, Ecuador: a former mangrove marshland that incrementally transformed into the most densely populated urban district. After sixty years of grassroots incremental transformation, the consolidated informal settlements have reached a tipping point and are facing growing challenges in relation to the many years of densification and inhabitation as well as the ecologically fragile conditions of the estuarine environment where the livelihoods are settled.

Drawing upon intensive and extensive field research in four low-income communities in Guayaquil, this paper will deploy an in-depth yet multi-scalar view on incrementalism and self-building in consolidated informal settlements. It will focus on the strategies that low-income households in consolidated informal settlements develop to improve their dwellings and neighborhoods, and the extent to which these strategies of self-organization and collective action allow households to cope with higher-level demands that have emerged after forty to sixty years of densification, intensive use of the dwelling environment, and radical ecological shifts. We found that while incremental trajectories for dwelling and neighborhood improvement have shown highly flexible and adaptable when it comes to interacting with changes in both social and ecological cycles, these grassroots developments primarily focused on improving people's direct living environments. Tackling longue-durée and higher-level demands that play at the environmental scales turn out to be extremely challenging for the older and currently unattended consolidated settlements that are in dire need of structural support.

We discuss how ´new´ methods of collaborative mapping can help (1) to better describe and visualize processes of incremental change and emergent demand for housing and ecological rehabilitation in older settlements and self-built environments, as well as (2) to pro-actively step into this complex setting and establishing a constructive dialogue between governing relationships and socio-morphological realities that play across multiple social-spatial scales in the city. The empirical studies from Guayaquil will provide evidence of how decision-making and design when combined effectively can steer future urban upgrading trajectories towards more equitable housing and ecological transformations.

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COMPARING THE MICROECONOMICS OF INCREMENTAL HOUSING UPGRADING STRATEGIES FOR OWNER-OCCUPANT HOUSEHOLDS IN SÃO PAULO
Abstract ID: 489
Abstract within Pre-Organized Session 90

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In recent decades, slowing rates of urbanization in Latin America have led scholars of the built environment to shift more of their attention toward already built-up, "consolidated" urban settlements, as opposed to the strong focus on newly urbanized informal settlements in previous decades. In many cases, yesterday's settlement on the metropolitan periphery is today's "innerburb"—a now established urban community facing the pressures of an established neighborhood, including aging infrastructure, regularized ownership titles reverting to an informal state, and the strains of absorbing further population inflows (Ward, 2015).

Innerburb scholarship to date has focused on varying aspects of life in consolidated settlements, including aggregate effects on urban politics (Bayat, 2000) as well as perspectives on important on-the-ground realities such as the relationship between inter-generational property transfer and public policy (Jiménez Huerta and Cruz Solís, 2015), and unit sub-division for rental (Leung and Yiu, 2019). One important missing perspective has been that of household microeconomics: What are the financial considerations that households use to select among several possible options for intensifying the use of their property through incremental, self-help expansion and redevelopment? Our study aims to fill this gap.

Drawing on years of on-the-ground qualitative research in São Paulo conducted by one of the authors, our study identifies several common recurring patterns of the in-situ intensification of use of small properties carried out by residents of Heliópolis, a neighborhood located in the industrial Sacomã district, 11 kilometers from São Paulo's city center, and 13 kilometers from its easternmost margins. Using a variety of sources, we construct prototypical pro forma analyses, or economic projections, for each of the common intensification options, from the point of view of the owner-occupant household, for residential rental and commercial uses. These include the conversion and/or subdivision of existing spaces, the construction of new spaces, and the replacement of existing buildings with new ones. These pro forma analyses provide insight into the reasons that households in varying circumstances pursue certain physical and use options but not others. They also illustrate the unintended consequences of public policies, such as a locally-run household relocation voucher program instituted by the City of São Paulo, beginning in 2004. Although the impact of redeveloping or otherwise intensifying the use of a single property is limited, recurring patterns replicated hundreds or thousands of times add up to a profound, bottom-up transformation of a whole urban district.

By focusing on the budgets of individual household smallholders of property and taking seriously the real estate economics concept of real options (Titman, 1985)—in essence, the households' individual agency refracted through an economics lens—our study is intended to provide insights into processes of additive urban transformation. It also allows us to critically assess the effects, intended and otherwise, of policies such as the housing voucher, and others that a municipal government might consider pursuing to alter the trajectory of urban transformation.

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Key Words: Innerburbs, Consolidated settlements, Incremental housing upgrades, Pro forma analysis, Real options theory

ENVISIONING THE SUSTAINABLE HOUSING UPGRADING OF INFORMAL COMMUNITIES IN MEXICO CITY

Abstract ID: 492
Abstract within Pre-Organized Session 90

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After six decades of rapid urbanization, informal communities account for the largest proportion of urban areas in Latin American cities (Ward et al 2015). Given this reality, housing scholars and policymakers concur that participatory approaches to incremental housing may help revitalize the aging community infrastructure and housing stock in informal communities (Amoako et al., 2017; Caballero Moreno, 2019; Mullins, 2018). By fostering partnerships between residents and community-based organizations and local governments, non-governmental organizations, and the private sector, participatory slum upgrading projects may facilitate innovative and effective solutions to housing upgrading in low-income settlements. However, participatory slum upgrading projects require careful, empirical attention to building design, structural quality, and materials used for self-help housing improvement in informal communities (Amoako et al., 2017; Caballero Moreno, 2019; Sullivan and Ward, 2012).

Previous fieldwork conducted by the author in 2017 served to document the material characteristics and deficiencies of self-help housing in the colonia popular of Isidro Fabela, Mexico City. Previous research revealed that most self-built structures here are structurally sound made of concrete and durable materials, but have design severe shortcomings, such as faulty sewers, asbestos roofs, and unsafe staircases. My research revealed the broad spectrum of building quality in Isidro Fabela and suggests that self-built dwelling units are highly heterogeneous and thus have different needs for housing upgrading. Because of the complexity of building quality, residents require careful technical and financing assistance that may help families envision sustainable projects of housing upgrading in their homes. This article examines the opportunities provided by participatory approaches to sustainable housing upgrading in Isidro Fabela. The author will conduct fieldwork in Isidro Fabela, which includes architectural observations, construction surveys, and in-depth interviews that document the benefits of sustainable construction systems, such as insulating concrete roofs, and technological innovations, such as solar water heaters and rainwater harvesting systems, to improve building quality. The author will also investigate the approximate costs of sustainable upgrading solutions in order to envision potential sources of funding provided by local governments, private sector, NGOs, among others. In doing so, this investigation seeks to inform sustainable housing policies that help revitalize the housing stock of informal communities in Mexico, which may serve as a reference for other cities in Latin America.

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Key Words: Participatory housing upgrading, informal communities, technological innovations, building quality, Mexico City

PLANNING SOLUTIONS TO THE HOUSING CRISIS
Pre-Organized Session 156 - Summary
Session Includes 871, 872, 873, 1137

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This sessions brings together scholars examining housing affordability, planning, and governance issues in the UK and Canada. The session first identifies key problems in rental housing policy and production, and in how land use planning and land markets have interacted with landlord-tenant laws to enable rising rents and displacement of tenants. It then moves to examine three case studies of how planning can facilitate more sustainable and equitable rental housing futures within three distinct policy arenas, including financial inclusion policies, cooperative housing programs, and community land trusts.

Objectives:

- To understand how different policies interact with planning to produce different housing outcomes, including displacement but also placement
- to understand how planning can facilitate inclusion, cooperative forms of housing, and community decision-making
- to understand and compare alternatives to the private rental market for delivering housing solutions

PLANNING FOR RENTAL HOUSING & THE LANDLORD-TENANT RELATION IN TORONTO
Abstract ID: 871
Abstract within Pre-Organized Session 156

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While low- and middle- income rental housing has gained nascent traction in scholarly debates, the Canadian experience with private rental housing geographies remains undertheorized in the academic literature. In 2018, the suspension of rent-control on newly occupied units in Ontario emerged within a heated debate on the heightened unaffordability of the private rental market, particularly in Toronto, and the increased instances of evictions in what has become one of the tightest housing markets in the country. To that end, this research is concerned with how evictions, in their various manifestations, are framed in legal vocabulary, thus reproducing displacement and the landlord-tenant relation in a technical

and apolitical manner. In that vein, it examines the urban planning politics governing the private rental market in Toronto to unsettle the ideological role of the state therein. Building on insights from Marxian political economy and the content analysis of key policy documents, it raises the following questions: How may we historically and theoretically understand the role of the Canadian state in forging and mediating the landlord-tenant relation through legal geographies? How has this resulted in rental-based displacement? This investigation advances empirical insights to reveal how the displaced fall across certain class, racial, and gendered dimensions. It also argues that private rental housing markets in Toronto reproduce the neoliberal project of the state in disciplining working class tenants in favour of helping landlords overcome barriers to accumulation, through displacement. This theorization insists on unsettling the class alliances underwritten in the policy environment and legitimated through the legal framework governing landlord-tenant relations. It also adds nuance to the implications of displacement on the lives of working-class tenants in the city.

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Key Words: Rental Housing, Neoliberalism, Displacement, Toronto, Discipline

FINANCIAL CONSUMER PROTECTION, LITERACY, AND INCLUSION: IMPLICATIONS FOR CANADIAN URBAN PLANNING AND POLICY
Abstract ID: 872
Abstract within Pre-Organized Session 156

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Despite being only a decade from the global financial crisis, predictions and warnings of the next crisis have already begun to sound. In Canada, household debt levels have continued to increase, and property bubbles in its major cities – notably Toronto and Vancouver – are now ranked among the five largest worldwide. Like many nations, Canadian policy post-crisis focused on enacting programs of financial literacy in an effort to redistribute financial risk from the state and industry onto individuals and households. Unlike many nations, however, Canadian banks, regulators, and agencies have unilaterally espoused the myth that Canadian banks did not require a bailout in the crisis, and that Canadian banks are the envy of the world for their fiscal prudence, transparency, and stability.

Canada's largest banks are indeed among the world leaders prudentially managing liquidity and capital adequacy risks through the Basel standards. Yet, our banks have lagged behind their international peers in terms of market conduct risks – those relating to compliance with consumer protection legislation. Canada legislated a Federal Financial Consumer Protection Framework (FCPF), as part of Bill C-86 in December 2018, ten years post-financial crisis. This FCPF was justified as an urgent need in light of investigative findings by Canada's consumer watchdog, the Financial Consumer Agency of Canada (FCAC) in their March 2018 Domestic Bank Retail Sales Practice Review. Finding that retail bank culture was heavily anchored in sales, this report spurred the legislative process to pass the FCPF, concluding a decade-long series of attempts to do so.

Canadian financial regulation is highly fragmented. The Canadian Constitution ascribes exclusive

jurisdiction over banking to the federal government; however, it equally ascribes exclusive jurisdiction for consumer protection to the provincial and territorial governments. This fragmentation extends further: legal rights and responsibilities of banking consumers (federal domain) versus investors (provincial domain); forms of recourse and protection through external complaint bodies whether in banking (two organizations: one not-for-profit and one for-profit) or capital markets and securities (a single, mandated, neutral arbiter). As the complexity of financial products continue to evolve, and as the demarcations between retail banking and investment products dissolve, a financial system driven by fee-based profits and fine-based punishments generates structural incentives to sell the highest-margin products in the regulatory realm of lowest consumer protection.

These structural incentives manifest in the crucial, yet often misunderstood, role financial advisors play in garnering access to mortgages for homeownership. In Canada, Financial Advisor – spelled 'or' – is an unregulated title which anyone can use, regardless of training, education, or employment; Financial Adviser – spelled 'er' – is a regulated title under securities laws with a fiduciary duty to act in the client's best interest. Over 96 percent of all 'Advisors' in Canada – be it wealth, investment, mutual fund, retirement, etc. – are unregulated. Standard industry practice incentivizes 'hat switching,' whereby professional 'Advisers' (regulated by a securities agency) who additionally hold unregulated titles, can serve clients as 'Advisors' – without fiduciary duty.

In this paper, I analyze the Canadian Financial Capability Survey (Statistics Canada, 2009-2014-2019) to ascertain the statistical correlates of financial advisor use by Canadian households. I ask two sets of empirical questions: (1) How do trust in/use of financial advisors relate to levels of household wealth and indebtedness?; and, (2) How does the prevalence of advisor use vary by product types (mortgages, HELOCs, etc.) and socio-demographic groups (seniors, millennials, recent immigrants, etc.)? I conclude by demonstrating the pragmatic and performative roles urban planners can play in disrupting the unholy trinity undergirding Canadian housing policy: financial inclusion, financial literacy, and financial consumer protection.

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Key Words: financial inclusion, financial literacy, consumer protection, household debt, homeownership

PLANNING FOR SUSTAINABLE CO-OPERATIVE HOUSING IN CANADA
Abstract ID: 873
Abstract within Pre-Organized Session 156

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In 1991 Asgard Green Cooperative Homes was built in Kitchener Waterloo, providing affordable, co-operatively managed rental homes for 70 families. As of 2019, with gentrification pressures encircling the site, the co-op faces crisis: with millions owing on outstanding mortgages, and mounting problems of housing deterioration. Through an analysis of Asgard Green's fortunes, this paper explores co-operative housing as an institution, crafted in Canada during the high-water mark of progressive housing policy, and often viewed with hope as radical alternative to market-based forms of housing provision. This

research asks what benefits the co-op has for members, and how its history sheds light on present-day struggles, with a goal to co-creating a plan for the co-op's ongoing sustainability. The method is community-engaged research (initiated by co-op members), using interviews with tenants and key informants (n=20), and reviews of co-op documents for two decades. The research found that the co-op was structurally set up to fail. Some of the reasons are specific: It was built on swampland by a shady contractor; it was built on the cusp of federal withdrawal from social housing; and it suffered from mismanagement and board dysfunction. More importantly, however, this paper argues that co-operative housing policy was what truly set up this co-op (and others) to fail, foreclosing on its promise to become an alternative to market housing. We reframe co-operative housing as a state strategy to reduce management costs (downloading these to tenants), to maximally enrich private lenders, and to discipline low- and moderate-income members (embodying the role of both tenant and landlord) to adhere strictly to market dictates or face bankruptcy, community dissolution, and displacement. The paper discusses how tenants in Asgard Green are fighting to save their community, and explores how co-op housing can achieve its radical potential.
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Key Words: Housing, Cooperative Housing, Social Policy, State-Owned Enterprises, Community Development

COUNTERING DISPLACEMENT THROUGH COLLECTIVE OWNERSHIP: COMMUNITY LAND TRUST PLANNING AND ACTIVISM IN LONDON, UK AND TORONTO, CANADA
Abstract ID: 1137
Abstract within Pre-Organized Session 156

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London, UK and Toronto, Canada are two global cities that face similar affordable housing pressures and, as such, are contexts for the pursuit of alternative and innovative solutions to the pressures of affordable housing constraints and gentrification and for a deeper consideration of community-based affordable housing needs. Community Land Trusts (CLTs) in London and Toronto have formed in response to similar challenges in both cities such as the encroachment of gentrification into traditionally affordable neighbourhoods and the difficulties of securing and retaining affordable housing in cities with increasingly expensive rental housing and homeownership costs. As a model that combines community-based planning and activist practices with collective land ownership, non-profit and non-governmental CLTs have been successful in forming at the neighbourhood level in both cities (Bunce, 2018; Moore & McKee, 2016) . CLTs have an active role in countering indirect and direct forms of displacement caused by gentrification (Davidson and Lees; Madden and Marcuse, 2016) through collective land ownership practices that aim to hold land in trust over the long-term. In this paper, I examine the processes of neighbourhood displacement caused by gentrification and concepts of indirect and direct displacement, as well the mechanisms of CLTs in countering displacement. The paper examines CLT mechanisms such as ground lease agreements between CLT organizations and residents, and land acquisition practices between CLT organizations and local governments, as ways to retain and encourage collective land ownership. Further, the paper explores municipal planning policies and regulations that provide a framework for CLT practices and the role of activist networks and practices in supporting CLT aspirations to counter displacement. This is demonstrated in examples such as local government and community activist support for the CLT initiatives in the Parkdale neighbourhood of Toronto and the activities of London Citizens in neighbourhoods of London's eastern and southern boroughs. The paper also examines some of the challenges faced by CLT organizations in both cities in relation to securing planning and funding support for land acquisition and affordable housing provision. This paper posits that

London and Toronto are informative and timely urban contexts for the study of community land trust planning and activism due to the explicit focus of neighbourhood-based CLTs in both cities on community mobilization and building a response to the impacts of gentrification and displacement.

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Key Words: Community Land Trusts, Gentrification, Displacement, Community Planning, Community Activism

HOUSING JUSTICE
Pre-Organized Session 166 - Summary
Session Includes 1000, 1001, 1002, 1003, 1004

GREENLEE, Andrew [University of Illinois at Urbana-Champaign] agreen4@illinois.edu, organizer

To the extent it engages with theory, housing policy is largely centered on traditional planning theory. Often overlooked is a potentially fruitful engagement with political philosophy, which provides tools for addressing some of the fundamental questions facing housing policy today: who should be responsible for building affordable housing? What are the responsibilities of the state to provide shelter? Can inequalities in neighborhoods be justified – and what policy tools can ethically address them? Bringing together scholars in housing policy and political theory, this panel engages with these core philosophical questions in ways with direct policy relevance for housing policy. In doing so, it argues for a new research agenda addressing normative topics of ethics and justice as they relate to pressing housing policy issues facing planners today.

Objectives:

- To bring together housing policy and political theory in a fruitful manner.
- To begin to create new normative frameworks to help guide future housing policy.
- To create a community of scholars working in this area for future research and teaching.

REALIZING HOUSING JUSTICE THROUGH COMPREHENSIVE FEDERAL HOUSING POLICY REFORM
Abstract ID: 1000
Abstract within Pre-Organized Session 166

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The rising cost of housing has spurred a global conversation about the appropriate means and ends of housing policy. For those in the emergent housing justice movement, the failure of advanced industrialized nations to deliver adequate housing to the global poor is a moral failing and a human rights violation, as recently acknowledged by United Nations Special Rapporteur on Adequate Housing, Leilani Farha, who argued in a report to the United Nations General Assembly that "violations of the right to housing are as much failures in the administration of justice as they are failures of housing programmes"

(Farha, 2019, p. 3). From advocacy organizations such as the Right to the City Alliance to activist scholars affiliated with UCLA's Housing Justice in Unequal Cities Network, the idea of housing justice embodies a call to action on behalf of those with unmet housing needs (Madden and Marcuse, 2016; Roy and Malson, 2019).

Despite this rise in globally connected, locally centered housing advocacy work, the housing justice movement has yet to influence federal housing policy in the U.S., where advocates face three significant challenges. First, the U.S. has never ratified the International Covenant on Economic, Social, and Cultural Rights (ICESCR), the primary legal instrument implementing the global human right to housing outlined in the Universal Declaration of Human Rights (UDHR). The U.S. Supreme Court has upheld various constitutional protections for the rights of property owners while simultaneously denying any constitutional basis for U.S. citizens' positive right to housing. Second, the federal resources spent supporting homeownership, in the form of tax expenditures forgone to the mortgage interest deduction, far exceed the public subsidies supporting low-income renters and the homeless. Third, federal housing policies in the U.S. have historically been adopted in a piecemeal fashion and justified on the basis of pragmatic objectives – alleviating homelessness, reducing housing cost burdens, promoting affordable homeownership, supporting the home mortgage and home building industries – without appealing to fundamental moral principles. Each new policy and program faces opposition from a constituency committed to the protection of the previous generation's big idea. If housing justice is to become more than merely an empty slogan, more work is needed to flesh out a conception of housing justice that is grounded in basic moral principles that support practical solutions to a variety of housing problems.

This paper aims to close the gap between principle and practice with a proposal for comprehensive federal housing policy reform that is grounded in a conception of housing justice that appeals to fundamental moral principles. I argue that civic equality, an ideal where every citizen is treated as an equal in accordance with a shared understanding of what citizens owe to one another and what the government owes its citizens, provides a justification for national housing policy reforms that guarantee secure housing tenure to all citizens while reducing housing inequalities in a manner that is tenure neutral. My proposed "negative housing tax" is designed to achieve these aims and can be implemented in a nation such as the U.S. by altering the income tax treatment of homeownership to fund a guaranteed housing allowance. This paper describes the ideal of civic equality, explores its distributive implications, and outlines the elements of the negative housing tax proposal.

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Key Words: housing justice, mortgage interest deduction, housing affordability, federal housing policy

NUDGING TOWARDS JUSTICE? THE ETHICS OF EXPANDING NEIGHBORHOOD CHOICE
Abstract ID: 1001
Abstract within Pre-Organized Session 166

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This paper explores whether it is just to nudge low-income families to move to high opportunity areas. It focuses in particular on the ethics of digital tools indented to nudge individuals towards those neighborhoods. Bringing together literature in housing policy on segregation, and work in political

philosophy on the ethics of integration and nudging, it argues for a framework of judging the moral acceptability of such policies. It argues that such policies can be just if implemented correctly because the interaction of pure freedom of choice and structural injustices have created a self-perpetuating cycle segregation and inequality. However, it argues for complete transparency in order to respect for the dignity of families. It also addresses criticisms of integration as a normatively desirable goal as well as criticisms that such programs are paternalistic. It applies this framework to a range of housing mobility policy tools currently being developed in the United States.

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Key Words: Justice, Housing, Nudges, Digital tools

CIVIL RIGHTS, HOUSING, AND POLITICAL CONFLICT
Abstract ID: 1002
Abstract within Pre-Organized Session 166

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Civil rights and fair housing policies with regard to housing and neighborhoods have been an unprecedented focus of federal attention and of political conflict over the past decade (O'Regan 2019). Pushed by civil rights advocates, the Department of Housing and Urban Development (HUD) during the Obama Administration advanced multiple major rulemakings at the intersection of civil rights and housing policy to address place-based inequalities in resources and access to opportunity, including the Disparate Effects Rule, the Small Area Fair Market Rent Rule, and the Affirmatively Furthering Fair Housing Rule (Johnson, 2014; Reina, Acolin, and Bostic 2019; O'Regan and Zimmerman, 2019). HUD also issued new guidance on civil rights and housing, such as the application of the Fair Housing Act to the use of criminal records by housing providers and liability for housing providers for hostile environment harassment or discriminatory housing practices. These efforts to give more certainty to federal civil rights laws were met with substantial resistance from conservative lawmakers, from some business associations, and sometimes from cities, states, and public housing authorities as well.

After the 2016 election, the new administration moved quickly to roll back the Obama-era policies that had been created over the prior decade (Steil and Kelly, 2019). These civil rights rollbacks have had mixed success thus far, but have gained momentum in 2019 and 2020. This paper analyzes the changes to the three major civil rights rules above that HUD has proposed since 2016 and identifies common justifications for and approaches to the recent rule changes, including the focus on encouraging deregulation and local control. The paper also analyzes opposition to these proposed rule change, through public advocacy, public comment, and litigation, and examines the successes and failures of that opposition.

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Key Words: civil rights, housing, fair housing, disparate impact, political conflict

THE GEOGRAPHY OF (ACTUALLY EXISTING) OPPORTUNITY: HOUSING CHOICE AS CAPITAL?
Abstract ID: 1003
Abstract within Pre-Organized Session 166

GREENLEE, Andrew [University of Illinois at Urbana-Champaign] agreen4@illinois.edu, presenting author

Galster and Killen (1995) in their initial framing of a geography of opportunity conceptualize a series of spatially differentiated social and institutional relationships. Scholarship, advocacy, and policy drawing upon this framework has proliferated, and has institutionalized calls for the removal of barriers to equality of spatial access to opportunity. Underlying this conceptual framework are a series of normative assumptions which Casey Dawkins (2016) parses out. The framework is grounded in a liberal egalitarian approach to justice under which all citizens should have a baseline of access to certain resources – which are reflected within access to housing and the bundle of associated goods. Liberal egalitarian approaches to justice imply not only an equality of spatial access to opportunity – an area which research and policy have set out to address; but also equality of individual choice – an area that is arguably clear in theory but harder to implement in practice.

Given the incorporation of principles regarding equitable access to spatially mediated opportunity in HUD's recent directive on fair housing (2015), HUD's Sustainable Communities Initiative, and proposed small area fair market rent standards, can spatial access to opportunity be better supported by revisiting the assumptions behind equity in terms of housing choice? Building off of Dawkins' analysis of the Geography of Opportunity framework, I parse out the assumptions underlying just housing choice. Operationalizing just housing choice in terms of policy requires a series of implicit judgements regarding the moral worthiness of individual choices in relationship to efforts to promote spatial equity. I suggest that while the normative assumptions regarding choice and opportunity are compatible, that implicit judgements regarding actual housing choices have the potential to run counter to the pursuit of spatial justice.

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Key Words: Housing, Justice, Theory, Opportunity

THE END OF SINGLE-FAMILY ZONING IN MINNEAPOLIS: A YIMBY VICTORY OR A CASE OF RESTORATIVE PLANNING?
Abstract ID: 1004

Abstract within Pre-Organized Session 166

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In 2019 Minneapolis became the first major city to completely eliminate single-family zoning districts. The City's move was quickly replicated by other governments including the State of Oregon. The

Minneapolis initiative came at a time when affordable housing advocates across the country are in a debate about whether upzoning and higher-density residential development could be an important part of the solution to the nation's affordable housing crisis. As such, the Minneapolis policy decision on single-family zoning is frequently interpreted as at least an implicit endorsement of the YIMBY (Yes In My Back Yard) movement's position that relaxing construction restrictions will help produce more affordable housing.

In this paper I examine the factors behind the City's policy decision and explain how, in fact, it was not part of a larger argument about affordability or the likely market reactions to new construction. Instead, City officials conceived of the idea in racial equity terms and saw it as a necessary corrective to the racially exclusionary origins of single-family zoning in Minneapolis and elsewhere.

Interviews with City officials involved in the formation of the policy reveal that the most influential actors were motivated not by a belief that the policy would produce more affordable housing, but by a desire to correct historic wrongs related to systems of racial exclusion.

Citations

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Key Words: upzoning, affordable housing, racial equity

TRACK 6 – ROUNDTABLE ABSTRACTS

A 'DOUBLE AGING' PLANNING RESEARCH AGENDA: CHALLENGES AND SOLUTIONS FOR AGING HIGH-RISE NEIGHBORHOODS
Abstract ID: 168
Roundtable

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WEBB, Brian [Cardiff University] webbb1@cardiff.ac.uk, participant
HARTT, Maxwell [Cardiff University] harttm1@cardiff.ac.uk, participant
FUJII, Sayaka [University of Tsukuba] fujii@sk.tsukuba.ac.jp, participant

The aging of urban populations is poised to become one of the most significant urban resiliency and housing design challenges of the 21st century, with far reaching implications for nearly every sector of society. Older adults are more likely than other age groups to spend extended periods of time in their immediate neighborhoods and, as a result, are more sensitive to the design of the built environment than

other age groups (Kerr et al., 2012). In addition, research on activity and life spaces indicates that, as we age, so too do our life spaces—they effectively shrink. This makes it important to understand the impact of the built environment on the wellbeing of individuals (Rosso et al., 2011). Explorations of aging do not typically distinguish between the age of housing, i.e. when it was built, and the age of the residents living in it. The aim of the roundtable discussion is to address this gap by developing a theoretical conceptualization of aging that links demographic aging with the physical aging of housing in the built environment. The roundtable participants call this concept 'double-aging'.

The lifespan of high-rise buildings and neighborhoods presents a particular 'double-aging' challenge and are therefore the primary focus of this roundtable discussion. Over the last twenty years, private property-led regeneration in major global cities has resulted in thousands of new high-rise developments (Pow, 2011). This trend has been characterized by policies that support urban intensification over suburban expansion and a strong international real estate market for inner city condominiums (Rogers et al., 2015).Yet, critical questions remain about the long-term stability of new high-rise buildings and neighborhoods and how adaptable this form of housing is, especially when viewed through the lifecycle of these developments and in light of demographic aging (Easthope, et al. 2014).

The roundtable discussion emerged out of a new international network that was established by the participants in 2019 and funded by the UK Research Councils. The participants have diverse research interests that span housing, demography, shrinking cities, high-rise buildings, vertical urbanization, and urban planning and design. The network has supported a series of research development workshops and field visits in the UK and Japan and brings together scholars from both of these countries, as well as Canada. This roundtable discussion will offer a series of perspectives on 'double aging' in high-rise neighborhoods drawn from emerging empirical research.

Japan, the UK and Canada will be the spatial focus of this discussion. Four specific examples of 'double-aging' will be briefly introduced as the basis for a wider conceptual discussion: (1) Dementia planning in the high-rise neighbourhood of Takashimadaira in Tokyo, Japan (2) A unit adaptation programme undertaken in a block of social housing apartments in Glasgow, Scotland; (3) The exponential growth of high-rise condominium neighborhoods in Toronto, Canada; and, (4) The over-occupancy of aging adults at the Motomachi social housing complex in Hiroshima, Japan. The roundtable will conclude by identifying a future research agenda on double-aging focused on the ways in which planning, public health, and housing market demands interact with cultural and individual concepts of care, community and the future planning and urban design of vertical high-rise housing.

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Key Words: Ageing, High-Rise, Housing, Design, Resiliency

TRACK 6 – INDIVIDUAL ABSTRACTS

IT TAKES A TINY HOUSE VILLAGE: A MIXED METHODS ASSESSMENT OF BARRIERS,

STRATEGIES, AND STAKEHOLDER PREFERENCES FOR TINY HOUSE VILLAGES FOR THE HOMELESS IN MISSOURI
Abstract ID: 12
Individual Paper Submission

EVANS, Krista [Missouri State University] KristaEvans@missouristate.edu, presenting author

There is increased interest in using tiny house villages to confront the growing issue of homelessness in the United States (U.S.) (Heben 2014; Segel 2015; Jackson et. al 2020). A recent inventory found that there are at least 115 tiny house villages for the homeless in the U.S. that are currently in operation, slated to open in the future, where efforts have been abandoned, or where the operational status of the villages is unknown (Evans, 2020). Although interest in addressing homelessness with tiny house villages continues to grow, these villages face numerous barriers, from restrictive land use laws to resident concerns about homeless populations. This research examines such barriers, strategies for urban integration, and stakeholder perceptions of various visual, physical, and social elements pertaining to these developments.

This mixed methods research involves a comparative case study of two tiny house villages for the homeless recently constructed and opened in Missouri: Eden Village, located in Springfield, and Veterans Community Project (VCP), in Kansas City. The comparative case study research was performed to answer the following questions: What are the challenges to integrating tiny house villages for the homeless and how have/are such challenges being addressed? What are strategies for the successful integration of these villages into communities? The comparative case study explores barriers and challenges faced by each tiny house village, in addition to strategies that allowed for the successful integration of the villages into urban communities. The study also involved a survey (including an embedded visual preference survey) of stakeholders in each community in order to understand if various visual, physical, and social elements related to tiny houses for the homeless influence community perceptions of these developments. Understanding community perceptions and preferences is important, as stakeholders are key actors in the development of land use policy. It is hypothesized that integrating stakeholder preferences for tiny house villages for the homeless may result in greater community support.

The study finds that NIMBYism (Not-in-my-backyard) is the greatest deterrent to villages. This is in compliance with the literature that finds NIMBYism to be a significant deterrent to both the integration of affordable housing and facilities to serve the homeless (Scally and Tighe 2015). However, the survey also finds that stakeholders have distinct preferences for several visual elements related to tiny house villages for the homeless, as well as for specific physical and social factors. For example, survey results indicate that stakeholders have a distinct and higher preference for tiny homes built in a traditional (vernacular) architectural style, over non-traditional (modern) architecture. The survey also finds that stakeholders perceptions of tiny house villages for the homeless are positively impacted by physical and social elements such as indoor plumbing, heating/air-conditioning, and the provision of mental health services, though many villages do not offer such amenities. Integrating stakeholder perceptions and preferences into plans and designs for tiny house villages for the homeless may result in less NIMBYism and greater community acceptance.

The research has resulted in a better understanding of the barriers to, and stakeholder preferences for, tiny house villages for the homeless. It is hoped that this research will aid those aiming to address homelessness through the integration of tiny house villages. The study contributes to a greater understanding of how tiny house villages for the homeless might be not only accommodated, but in a way that is perceived positively among communities.

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Key Words: tiny house villages, homelessness, NIMBYism, mixed methods research

SHIPS IN THE NIGHT? EXAMINING THE NEIGHBORHOOD DIVERSITY-SOCIAL INTERACTION MECHANISM USING MOBILE APPLICATION DATA

Abstract ID: 39
Individual Paper Submission

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The notion that exposure to neighborhood diversity has the potential to improve socioeconomic outcomes is central to the current theory on neighborhood development and housing policy. It is seen as a response to socioeconomic and racial segregation at the neighborhood level, which can mediate social processes and amplify the concentration of poverty (Wilson, 1987). The promotion of neighborhood diversity through mixed-income neighborhoods currently drives affordable housing policy, though it has also been argued that it is spurs neighborhood gentrification. Despite its prevalence in housing policy, our current theoretical understanding of the mechanism linking neighborhood diversity, to exposure, to diverse social contact lacks sufficient empirical grounding (Galster and Friedrichs, 2015).

This research explores the possibility of using high density mobile phone application GPS data to improve our understanding of the diversity-social interaction mechanism by measuring the exposure to racial and ethnic diversity through experienced daily activities as well as potential social contact during these daily activities. In particular, it asks the question: What is the relationship between residential exposure to racial and ethnic diversity, as measured using census demographic data, experienced daily activity exposure to racial and ethnic diversity, and the exposure to racial and ethnic diversity in experienced social interaction clusters? The findings show: 1) there is a positive relationship between daily activity exposure to diversity and residential exposure to diversity; however, the exposure probability is much higher in daily activities. 2) Social interaction clusters also have higher exposure probability than residential exposures, but tend to be more spatially heterogeneous, revealing hyperlocal retail and commercial semi-public spaces of high exposure probabilities. Thus, the use of residential exposure measures may "average away" dynamic variability of exposure throughout the day.

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IT'S NOT ALWAYS SUNNY IN SAN DIEGO FOR HOUSING CHOICE VOUCHER (HCV) HOLDERS: THE REPRODUCTION OF RACIAL AND SOCIOECONOMIC SEGREGATION UNDER THE CHOICE COMMUNITIES INITIATIVE
Abstract ID: 45
Individual Paper Submission

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This paper examines residential mobility patterns of housing choice voucher (HCV) holders in San Diego county. It focuses on whether HCV holders moved to higher opportunity ZIP codes following the adoption of the Choice Communities Initiative by the San Diego Housing Commission (SDHC) in 2018, which was designed to incentivize moves to opportunity neighborhoods via tiered payment standards at the ZIP code level. San Diego county was selected as a critical case for two reasons. First, prior research has identified it as a place with one of the lowest HCV subsidy levels relative to SAFMRs in the United States (Patterson & Silverman, 2019). Despite the goals of the Choice Communities Initiative, the SDHC has established a pattern of setting payment standards below SAFMRs in a manner that has been documented to impede moves to opportunity areas. Second, San Diego county is a critical case study because it typifies emerging demographic patterns in the United States. It is among the more racially and ethnically diverse populations in the country. For the 109 ZIP codes where data were available across the multiple data sets examined in our analysis, the 2017 ACS 5yr estimates reported that San Diego county was: 53% non-Hispanic white and 47% minority. In contrast, San Diego county's HCV recipients identified in our data were 22% non-Hispanic white and 78% minority in 2018. These HCV recipients clustered in 36 (33%) of the ZIP codes in the county, while the remaining 73 (67%) ZIP codes had no HCV recipients. Despite its large minority population, HCV holders in San Diego county, who are predominantly minority, remain segregated.

The analysis is based on a unique dataset that combines three data sources. One includes multi-year data obtained from the SDHC measuring the race, ethnicity, gender, household characteristics, housing unit characteristics, rent and public subsidy levels, ZIP codes, and residential mobility for over 14,000 individual HCV recipients in San Diego county. Another dataset includes population and housing characteristics at the ZIP code level from the American Community Survey (ACS). The third dataset includes small area fair market rents (SAFMRs) for ZIP codes and fair market rents (FMRs) for San Diego county. Data were analyzed using spatial statistics and GIS. These data were used to examine moves of HCV holders against the backdrop of local policy implementation aimed at promoting residential relocation to opportunity areas.

The results from our analysis focus on how the preexisting patterns of racial and socioeconomic segregation have been reinforced in San Diego County, despite the adoption of local policies with articulated goals to reverse them. It is observed that most moves happened within the lowest rent ZIP codes, regardless of races. Also, the number of HCV holders in the lowest rent ZIP codes increased in 2018 following the adoption of the Choice Communities Initiative. These findings build on prior research examining how patterns of inequality are reproduced despite efforts to promote the geographic mobility of HCV holders (Basolo, 2013; DeLuca et al., 2013; Patterson & Yoo, 2012; Wang & Walter, 2018). The findings from our analysis are used to identify areas where policies like the Choice Communities Initiative can be strengthened in order to achieve the goal of promoting opportunity moves.

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Key Words: Housing Choice Vouchers, Residential Mobility, Opportunity Moves

DETROIT'S TAX FORECLOSURE CRISIS: SYMPTOM OR CAUSE OF DISINVESTMENT, LOSS OF HOMEOWNERSHIP, INCREASED HOUSING INSTABILITY?

Abstract ID: 89
Individual Paper Submission

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In 1999, the State of Michigan amended its property tax foreclosure law. The new law shortened the period of tax delinquency before foreclosure and sought to guarantee clear title at the end of the process. The goal was to facilitate the preservation and reuse of property that owners were abandoning. The new law was cited as a best practice for other states. Legislators did not foresee that tens of thousands of households would fail to pay property taxes and lose their homes and that many landlords also would not pay their taxes. From 2002 (the first year that properties were foreclosed under the new law) through 2019, more than 135,500 properties were foreclosed, more than 35 percent of all properties in the city. More than 25,400 of these properties had gone through foreclosure more than once. The scale of tax foreclosures has contributed to transforming Detroit from a majority-homeowner city to a majority renter city, facilitated investors' extraction of the last value from disinvested properties, and undermined neighborhood stability. Numerous articles and reports, both academic and journalistic, have looked at aspects of the problem, but no research has assessed the problem as a whole.

This paper will analyze why tax foreclosures increased so much and why they remain a major problem despite some recovery in property values since the severe recession. The causes to consider are numerous and diverse: for instance, increases in poverty and unemployment so that owners who could pay taxes in the past no longer could do so; loss of more than 80% of property value but no reassessment so that tax bills could approach property value; city government's lack of provision of public services—including fire and police—leading to owners' unwillingness to pay taxes; the extreme difficulty of selling a house in many neighborhoods leaving tax foreclosure as the only way to get out of ownership; investors' gaming of the system to continue milking properties; city failure to implement tax foreclosure prevention measures; incentives for county and city governments to continue high levels of foreclosure in order to raise funds to solve their budget problems. The paper will analyze how well reforms are likely to work in reducing tax foreclosures. The paper will use foreclosures data obtained from a nonprofit data warehouse and will use assessor and other data available on the city's open data portal. The paper will draw on the many reports and articles that have examined aspects of the problem. The synthesis of the data and others' findings will provide an overview that can aid understanding of the causes and effects of tax foreclosure and the impact of possible reforms in weak-market cities.

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Key Words: property tax, foreclosure, eviction, low income homeownership, fiscal austerity

IMPLEMENTING SOCIAL MIX THROUGH AN AUSTERITY CRISIS: CONTESTED APPROACHES IN A NEW YORK CITY PUBLIC HOUSING REDEVELOPMENT
Abstract ID: 123
Individual Paper Submission

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The New York City Housing Authority (NYCHA) is currently in a state of crisis. With crumbling infrastructure, a series of high-profile heat, hot water, and lead paint scandals, and a nearly $40 billion capital budget backlog, NYCHA has proposed a suite of austerity measures to help fill its burgeoning funding gap. This includes allowing for the development of mixed-income 'infill' housing through leasing 'underutilized' public housing land to private developers.

At the national level, despite decidedly mixed outcomes for existing residents, mixed-income housing has become a de facto housing policy approach in many US cities. While the effects of mixed-income communities are often chronicled after-the-fact in planning and housing literature, fewer studies consider the implementation of such projects or account for sustained resistance among existing residents (Goetz, 2016). Through chronicling the trajectory of a pilot infill site in New York City, this paper asks, how do key stakeholders divergently approach the implementation of a mixed-income housing development?

The paper employs a qualitative case study that includes data collection from over a year-and-a- half of participant observation at public meetings and protests, a comprehensive review of media and policy documents, advocacy-based research, and interviews with key tenant-activists, non-profit stakeholders, NYCHA policymakers, elected officials, and private developers. The research departs from a framework of pragmatism, which as Susan Saegert (2018) has noted, is a particularly useful theoretical approach for studies concerned with housing theory and policy, "allow[ing] for competing desires, interpretation of situations and policies and analyses of ends-means relationships within a framework of contentious politics" (p. 240). This is salient as housing policy often navigates the distinct goals of policymakers concerned with metrics like costs, units, and affordability rates versus the needs of residents who hold intimate, everyday experience in their homes and communities.

The results show that different actors mobilize the housing authority's state of crisis to competing ends. Public housing tenants and their allies are using the period of change as an opportunity to coalesce around progressive housing movements at the state and federal level, with the goals of resisting privatization through complete government-funded preservation of existing public housing. Meanwhile, NYCHA officials and selected developers are mobilizing the state of crisis to promote public-private partnerships as the singular way to improve troubled local housing authorities, maintaining that privatization measures are currently the only tool at their disposal from the federal government. Despite dramatically competing visions for implementation, both sides maintain that their ultimate goal is to repair existing public housing. The results also focus on how policymakers and tenants interact around the past, present, and future of public housing, an entity that has been deemed as a policy failure through histories of racist discourse while also being denied the federal, state, and local resources needed to thrive.

The results contribute to planning scholarship in 3 key ways. First, after long holding the title of the "public housing that worked" in the US (Bloom, 2008), this study provides one of the first in-depth accounts of NYCHA's recent period of crisis and change. Second, it contributes to a growing body of literature that considers the importance of chronicling the implementation and tenant resistance to mixed-income public housing redevelopment (Vale, 2019). Finally, through its pragmatic approach, it highlights the problem of what Vanessa Watson (2003) has termed "conflicting rationalities" in urban redevelopment, where striving for absolute consensus to planning problems can ultimately be an unrealistic and counterproductive way to approach implementation. The study also contributes to advocacy-based planning practice, as I have periodically conducted research for non-profit groups and NYCHA tenants, including through developing fact sheets, mapmaking, and drafting reports.

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Key Words: public housing, mixed-income housing, urban redevelopment, implementation, pragmatism

A MULTISCALAR APPROACH FOR MEASURING NEIGHBORHOOD POVERTY AND ITS IMPLICATIONS FOR AFFORDABLE HOUSING STUDY: THE CASE OF OHIO
Abstract ID: 182
Individual Paper Submission

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Affordable housing's location can be key in the quality of the neighborhood in which residents find themselves, with neighborhood context influencing children's life opportunities and life outcomes. Extant studies have thus far measured neighborhood quality by defining dysfunctional neighborhoods, measuring the neighborhood quality with continuous indicators, measuring the geographic opportunities of neighborhoods, and measuring economic segregation (Ellis, Wright, Holloway, & Fiorio, 2018; Kasarda, 1993; Knaap, 2017; Massey & Denton, 1988; McClure & Johnson, 2015; Newman & Schnare, 1997; Pendall, 2000; Ricketts & Sawhill, 1988; S. Fowler, 2015; Walter & Wang, 2016). Many studies measuring neighborhood quality rely on fixed-geographic areas such as census tracts, blocks, and block groups. However, measuring neighborhood quality with fixed-geographic areas falls into the modifiable areal unit problem (MAUP). MAUP consists of the scale problem and the aggregation problem. First, the scale problem means that neighborhood measurement results will be sensitive to the scales of the unit of analysis. For instance, neighborhood measurement results with the census tract will differ from neighborhood measurement results using the census block. Second, the aggregation problem indicates that the boundaries that are drawn to divide geographic subareas can change neighborhood measurement results. In other words, even if we divide the study area into the same number of subareas, the way to draw the boundaries can change the neighborhood measurement. More recent work on segregation and neighborhood classification has developed a multiscalar approach to rectify MAUP (Fowler, 2016; Hennerdal & Nielsen, 2017; Lee et al., 2008; Östh, Clark, & Malmberg, 2015; Reardon et al., 2008).

In particular, the study of segregation indicates that segregation is a multiscalar phenomenon. Segregation as a multiscalar phenomenon is built upon the idea of an egocentric neighborhood –an individual's local environment. That is, individuals' local environments within the same census tract are not necessarily identical. For example, one's local environment at the center of a census tract may differ from another's

local environment at the edge of the census tract. Under the multiscalar approach, geographic scale becomes important in measuring neighborhood quality or any phenomena at the neighborhood level. Therefore, this study will employ a multiscalar approach by Clark et al. (2015) beginning with very small geographies—block groups with more than 12 neighboring block groups—and identifies increasingly large patterns of similarity or difference with k-nearest neighbors—up to groups of census block groups with more than 51,200 neighboring block groups—to measure neighborhood quality as a continuum of adjacent geographic relationships and suggests its implications for affordable housing research. Building upon the previous studies quality (Clark, Anderson, Östh, & Malmberg, 2015; Kasarda, 1993; Krysan & Crowder, 2017; Macallister et al., 2001; Pendall, 2000; Sampson, Morenoff, & Gannon-Rowley, 2002), I assume that the economic composition of the population in bespoke neighborhoods–neighborhoods with k-nearest neighbors—represents the neighborhood. Considering diverse scales of bespoke neighborhoods as a variable, I will classify neighborhoods in Ohio by population composition using the poverty rate and compare to existing measures to assess the impact on the understanding of neighborhood quality and context.

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Key Words: Poverty Concentration, Segregation, Affordable Housing, Neighborhoods, Multiscalar Approach

GENTRIFICATION, DISPLACEMENT, AND SPATIAL MISMATCH
Abstract ID: 185
Individual Paper Submission

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The causes and consequences of gentrification have captured the attention of social scientists and been the subject of much recent research, both qualitative and quantitative. Building on findings from earlier research, recent studies often start with the hypothesis that gentrification causes or is at least associated with displacement of original residents, particularly lower-income and more vulnerable residents. Some studies of gentrification, especially those based on qualitative data, present evidence showing that gentrification has dire consequences for longtime residents of changing neighborhoods and for the character of the neighborhoods and cities in which they are located (Brown-Saracino 2017). Other research suggests that the negative consequences of gentrification for low income residents are far less dramatic and conclusive (Ding, Hwang, and Divringi 2016; Ellen and O'Regan 2011). In this paper, we investigate the association between gentrification and residential mobility in the time period following the

Great Recession.

We attempt to reconcile findings from prior work, both qualitative and quantitative, by using geocoded microdata from the 2011–2017 American Community Survey (ACS) in the top 100 metropolitan areas in the United States. We define neighborhoods at risk of gentrification in 2010, identify neighborhoods that did gentrify between 2010 and 2017, and compare individuals living in neighborhoods experiencing gentrification with similar individuals living in neighborhoods that are non-gentrifying. Our large national sample allows us to consider heterogeneity in the association between gentrification and residential mobility, investigating differential association by metropolitan population size. We also assess whether individual characteristics like race and ethnicity and education moderate the association between gentrification and residential mobility. In the analysis, we focus on how gentrification is associated with residential mobility and, for movers, destination neighborhood characteristics and individual employment outcomes.

Using linear probability models we find a modest positive significant association between gentrification and residential mobility, particularly in the top 50 most populous metropolitan areas. Non-Hispanic white and Hispanic residents of gentrifying neighborhoods have higher residential mobility rates compared with their counterparts in non-gentrifying neighborhoods; we find no significant association between gentrification and residential mobility among African Americans or Asian and Pacific Islanders. The positive association between gentrification and residential mobility appears to be limited to individuals with less than a college education. Among movers, those moving from a gentrifying neighborhood end up in neighborhoods with a lower poverty rate, on average, compared with movers from non-gentrifying neighborhoods. Movers from gentrifying neighborhoods are no less likely to be employed and their commutes are not significantly longer than movers from non-gentrifying neighborhoods.

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Key Words: gentrification, displacement, residential mobility, neighborhood change, spatial job mismatch

HOUSING PLAN AND LOCATIONAL OUTCOMES: THE RESILIENT APPROACH FOR COASTAL COMMUNITIES IN THE UNITED STATES.
Abstract ID: 191
Individual Paper Submission

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Housing plays a central role in connecting individual, family, and society in human life. Provide decent housing at an affordable price, in a suitable living environment is the ultimate goal of housing policy in the United States, as well as many other countries. The U.S. Department of Housing and Urban Development (HUD) creates a financial mechanism that requires the submission of a Consolidated Housing Plan to support affordable housing development and other housing-related activity in a city, as a condition of receiving funding through the formula block grants. These funds are used to support the proposed affordable housing development agenda of the local jurisdiction. The plan plays a crucial role in

increasing affordable housing choice and providing quality community development activities for local people, especially for low-income households. Yet little research undertakes an evaluation of plan quality for Consolidated Housing Plans. Only two studies that tackled the housing issue in plan evaluation literature were found in a thorough literature search, and the most recent one was published a decade ago. More importantly, the quality of housing plan of coastal communities has never been addressed. This gap raises the concern toward how local government distributes federal resources in the areas that facing the increasing risk of natural disasters like a hurricane, flooding, and sea-level rise.

This research adopts the plan evaluation protocol in which the author developed in his previous research then apply to the coastal communities in the Gulf Coast and Florida. 60 coastal communities (30 cities and 30 counties) were chosen. Using four major criteria including Decent Housing, Suitable Living Environment, Economic Opportunity, and Fair Housing. The paper assesses the quality of the Consolidated Housing Plan by using the content analysis methodology. Each plan will be evaluated based on five components: Factual basis, Goals, Policies, Implementation, and Participation. The total score represents the overall quality of the plan.

The study compares the performance between coastal cities and coastal community in planning preparation to reveal the differences between two governmental levels. After that, two communities will be randomly chosen to reflect the outcomes of housing plan on coastal communities. By overlay the spatial distribution of housing and community development activities with the water-related risk map, the study indicates how the housing plan can impact local communities by the matching of geographic locations with vulnerable areas. Using Local Indicator of Spatial Association (LISA) and cluster analysis, this research will highlight the hot spot of low-income population and the concentration of public funded activities. More importantly, the geographic relation between these hot spots and the disaster risk will raise the concern toward how the public fund has been spent to address the resilient development of the needed population.

Finally, the findings are expected to create guidelines not only for policymakers but also for local authorities and researchers in supporting the affordable housing and community development nationwide.

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Key Words: Plan evaluation, Consolidated Plan, affordable housing

SPACES OF AFFLUENCE: MIDDLE-CLASS NEIGHBORHOODS AND FORECLOSURES IN LOS ANGELES AND ATLANTA
Abstract ID: 240
Individual Paper Submission

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Residential segregation has been linked to higher foreclosure rates for racial minorities and immigrants in the United States. However, there are disparities by region. For instance, established immigrant gateways may reinforce these patterns because of its long-standing ethnic enclaves. Alternatively, newer immigrant gateways could provide opportunities for immigrants to live in integrated neighborhoods. Furthermore, housing markets have their own local and regional scale effects, where neighborhoods within a region

have more volatile prices than others.

In addition to regional factors, there are class disparities among minority and immigrant neighborhoods in part because federal policies favoring highly educated professionals contribute to concentrated affluence for some groups. These middle-class spaces offer housing and class-based resources (Lee, 2018), where socioeconomic advancement leads to coethnic concentration rather than dispersal (Chung & Brown, 2007; Logan et al., 2002). The impact of these middle-class areas also varies by region and type of immigrant gateway (Lee & Greenlee, 2020). This study fills a gap in literature by comparing individual foreclosure outcomes in different gateways and neighborhoods by class, nativity, and racial/ethnic group.

Here, I examined foreclosure outcomes for individual homeowners in Los Angeles, California and Atlanta, Georgia because they have different receiving communities, housing markets, and racial composition. While Los Angeles has had steady immigrant growth since World War II, Atlanta has experienced significant growth only from the 1990s (Singer, 2008). Using CoreLogic property records, I created a cohort of homeowners who purchased homes between 2000 and 2006 and assessed likelihood of foreclosure between 2008 and 2010. Homeowner neighborhoods were also categorized by class and nativity to focus on the impact of middle-class ethnic neighborhoods. Logistic regressions further tested if these effects persist, after accounting for homeowner characteristics.

I found that Los Angeles Latino and Asian neighborhoods differed in foreclosure patterns from Atlanta. In particular, Atlanta enclaves had higher foreclosure rates than their counterpart low-income neighborhoods with native-born residents; Los Angeles had opposite patterns. Because immigrants began moving in significant numbers from the 1990s, these homeowners may be the emerging second generation while Los Angeles has had time to develop immigrant and minority areas with varied class and nativity status. Los Angeles also had more pronounced class differences than Atlanta, while Atlanta had significant racial disparities between White and Black areas—these findings may reflect the former region's costly housing market.

The study elucidates how race, nativity, and class impact housing by a region's migration history and housing market. The findings not only help to understand differing reasons for racial segregation, but also how to create region-specific interventions. For instance, Los Angeles homeownership programs may need to focus on low-income areas across racial groups, while Atlanta resources could target enclaves and Black neighborhoods. Finally, the study challenges the hierarchy that situates White middle-class neighborhoods as the ideal for housing outcomes—depending on the region, coethnic resources and neighborhoods can also matter for socioeconomic mobility.

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Key Words: segregation, foreclosure, metropolitan regions, immigration, ethnic neighborhoods

SECONDARY COSTS: A METROPOLITAN-LEVEL EXPLORATION OF HOW RISING HOME PRICES AND RENTS ARE EXACERBATING ECONOMIC AND SOCIAL INEQUALITIES
Abstract ID: 286
Individual Paper Submission

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Between the end of the Great Recession in 2010 and December 2019, median home prices in the twenty U.S. housing markets tracked by the S&P Core Logic Case-Schiller Index increased by 46 percent. Over a shorter period—between 2013 and 2017, median rents in those same twenty markets increased by an average of 12 percent. With mortgage interest rates already at historically low levels and with household incomes going up much more slowly than housing costs, these price and rent increases translated into declining housing affordability, especially for low-income and moderate-income renters. The severity of this situation was not always evident from national statistics. Between 2010 and 2017, the overall share of U.S. renters paying more than 30 percent of their income for rent—the so-called excess burden rate—actually declined from 48% to 47%. The picture was very different for low and moderate-income renters making less than $35,000 per year. Adjusted for inflation, their excess rent burden rate rose from an already astronomical 80% in 2010 to an even higher 84% in 2017. (Over the same period, the share of low and moderate-income homeowners with excess burdens remained constant at 59%.)

Recent work at the Harvard Joint Center has provided a more accurate (and more concerning) picture of the rental affordability problem at the local level. Less well understood is how rising housing costs and declining affordability are slowly reshaping housing and economic outcomes at the community level. Using the American Community Survey and other federal data sources, this paper will explore the statistical correlation between rising home values and rents and multiple metropolitan-level housing and job market outcome measures, including: (i) changes in gross mover rates—the rates at which homeowners and renters move from one home to another; (ii) changes in in-migration and out-migration rates; (iii) changes in homelessness rates; (iv) changes in poverty rates; (v) changes in income inequality as measured by 90/10 ratios; (vi) changes in homeownership rates; (vii) changes in Black-White and Latino/non-Latino residential segregation levels; (viii) changes in the spatial concentration of poverty; (ix) changes in average commute times (on the assumption that people will "drive until they find affordable housing); and (x) changes in small business formation rates.

The general research hypothesis behind all these comparisons is that, depending on the place and income level, rising home values and rents are leaving fewer resources available to meet other needs or to pursue other opportunities, adding to household hardships and exacerbating social and economic inequalities.

The great advantage of this analysis will be its comprehensiveness. Rather than just looking at the 20 or 50 largest U.S. cities or metro areas—which is the case with most housing price and affordability studies—to the extent the data is available, this paper will consider all 384 U.S. metro areas. It will also explore the extent to which these different housing price-social and economic outcome relationships vary by region, rate of metropolitan job growth, racial composition, and population and household age structure. To the extent current housing price and affordability trends are undoing recent progress in reducing residential segregation and concentrated poverty, it may be necessary to rethink how federal housing programs are administered.

Citations

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Key Words: Housing, Affordability, Segregation, Poverty

RENTAL AFFORDABILITY IN THE WAKE OF NATURAL DISASTERS
Abstract ID: 305
Individual Paper Submission

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Natural disasters have been increasing in intensity while rental affordability has been declining in many cities. The intersection of these two trends presents an important challenge for policymakers and planners as well as an insightful test for theory. Natural hazards fundamentally disrupt housing markets by destroying destroy homes, displacing residents, and delaying transactions (Deryugina et al., 2018; Howell and Elliott, 2019). The long-run impact of any disaster depends critically on (1) how swiftly the housing market adjusts, (2) how costly and long the transition to a post-disaster equilibrium is, and (3) how equitably the costs are distributed across society. Planners play a key role in designing and carrying out adaptation strategies to minimize disaster damage, but also plan for emergency relief and longer-term recovery following a disaster (Berke et al., 2014).

In this paper, we use the multifamily rental market to measure these housing market dynamics. Most previous work on disaster recovery and housing markets has focused on homeowners, not renters. We fill this gap by asking how rents and vacancy rates evolve in the wake of hurricanes and tropical storms. We situate this question within the growing literature on natural disasters, documenting the decrease in asset prices, the lack of foresight by and subsequent out-migration of residents, and the many persistent, negative real economic outcomes that befall communities exposed to disaster damage despite post-disaster FEMA economic assistance (Bleemer and van der Klaauw, 2019). These findings underscore the importance of understanding how local markets fail to adjust rapidly or equitably. The rental market allows us to explore these frictions in a context where the power balance between buyer (tenant) and seller (landlord) is particularly asymmetric.

We compile a new database that matches disaster shocks to rental outcomes. The dataset contains property-level asking rents per unit and per square feet, vacancy rates, and a wide variety of building- and unit-level characteristics from CoStar, merged with ZIP code-level hurricane incidence, damage, and assistance from the Federal Emergency Management Agency (FEMA). We construct a panel difference-in-differences model that estimates the effect of the hurricanes from 2000Q1 to 2019Q3 on eight counties in Florida.

Results indicate that rents per unit and rents per square foot increase by almost 7% in the quarter following a hurricane but the effect diminishes over the next 2-4 years. Meanwhile, vacancy rates decrease slightly and then increase sharply and persistently, though their effect also moderates in the later years. The inverse relationship between rent levels and vacancy rates distinguish post-disaster rental markets from regular ones. We propose several possible theoretical explanations for these findings that change our understanding of how rental markets adjust and how some of the most vulnerable members of society are affected by market failures in times of distress. We discuss the potential for an expanded role for planners in mitigating these medium term shocks for renters, who are likely less able to deal with them compared to homeowners (Howell and Elliott, 2019).

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Key Words: disaster recovery, rental affordability, FEMA, hurricanes, hazard mitigation

"ONLY ONE BATHROOM!" ARE OUTMODED POSTWAR HOMES CONTRIBUTING TO NEIGHBORHOOD SORTING?
Abstract ID: 306
Individual Paper Submission

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Many postwar neighborhoods across the United States are exhibiting signs of decline previously only observed in older central cities. With the characteristics of postwar housing being arguably undesirable by current standards, extant literature claims this functional obsolescence is contributing to levels of distress and decline. What remains unclear is whether the effect observed is due to housing age — postwar housing is vulnerable to physical depreciation given its age — or if there is a true postwar vintage effect influencing neighborhood sorting beyond what age alone would predict. A pooled panel model spanning 1990 to 2010 is used to address this question; three main findings emerge. First, neighborhoods with more postwar housing have populations that are older, more racialized, lower educated, and exhibit higher rates of homeownership than would otherwise be predicted by housing age. Second, a significant relationship between household income and postwar housing does not exist when considering metropolitan areas in aggregate. Third, when stratifying metropolitan areas by housing supply growth and price, more postwar housing in a neighborhood is associated with lower levels of income in metropolitan areas with high levels of housing supply growth and lower prices. This finding indicates that households may be sorting over undesirable postwar housing characteristics when affordable outside options exist.

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Key Words: housing, housing depreciation, neighborhood status

WHO BENEFITS FROM SHARED LIVING AND WHO DOES NOT? SOCIAL DYNAMICS AND POTENTIAL EXCLUSION IN SHARED HOUSING
Abstract ID: 321
Individual Paper Submission

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Background: Shared living arrangement among young adults has been increasingly widespread way of life in the world, yet little is known about their social dynamics (Clark et al., 2018). Since those non-kin households are in a wide range of socioeconomic backgrounds, their personal relationship is the key to whether their shared living wanes or flourishes (Heath et al., 2017). The previous research bridges how the experience of shared living connects to various social outcomes like increased social capital or sense of community (Cho et al., 2019). Here, this study extends the bridge by figuring out which residents of the shared housing benefit from the social outcomes and which residents do not. Specifically, this study explores whether there is a potential exclusion of certain residents in shared housing due to their socioeconomic backgrounds rather than their personal traits or residential conditions.

Method: To confirm the positive impacts of shared living arrangement in terms of social dynamics and identify the potential exclusion among the residents of shared housing, we conducted a survey on 800 young single households who lived in Seoul, Korea. Among them, 300 residents lived in shared housing. The survey items include the personal traits, socioeconomic backgrounds, residential conditions, and social dynamics of the residents. We measured the social dynamics in various aspects such as acceptability with socioeconomically different people, social relationship, and social activity. With this data, to verify the positive social outcomes from shared living arrangement, we first examine the baseline differences in social dynamics between the residents of shared housing and other housing types. Then, to identify a potential exclusion among the residents of shared housing, we divide them into several groups based on their socioeconomic backgrounds (e.g. income level, gender, occupation, birthplace, etc.) and investigate how their social dynamics differ by each socioeconomic group.

Result: Our preliminary finding reveals that the residents of shared housing are more likely to have a 'healthy' life in terms of social dynamics than the residents living in other housing types. For example, they show higher satisfaction with their social relationship and participate in social activities more frequently. However, when we divide their socioeconomic group by monthly income level, the low-income group show less satisfaction with their social relationship and participate in social activities less frequently than the high-income group. It indicates the possibility that there can be a potential exclusion of certain socioeconomic group in shared housing. We will investigate a structural link for how their socioeconomic backgrounds connect to the potential exclusion of them.

Implication: While there is a growing interest in shared housing as one of the solutions for providing affordable living place to young single households in many global mega-cities (Woo et al., 2019), we detect a sign of potential exclusion of certain residents in shared housing. To mitigate the potential exclusion and make the shared housing to be both affordable and equitable housing option for young adults, we intend to suggest several guidelines on the management of shared housing.

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Key Words: Shared housing, Young single household, Social dynamics, Potential exclusion, Socioeconomic background

HOUSING DAMAGES AND AID FOLLOWING HURRICANE MARÍA: AN ANALYSIS OF FEMA INDIVIDUAL ASSISTANCE DATA

Abstract ID: 330
Individual Paper Submission

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In post disaster contexts, information exchange is critical to the task of preparing recovery assessments, drawing up reconstruction scenarios and ultimately preparing recovery plans and executing needed projects. In the case of Hurricane María's devastating toll on Puerto Rico, detailed figures and analyses regarding areas that were hardest hit and who has been served have been lacking. Previous US-focused studies that examine eligibility and disbursement of federal post disaster assistance demonstrate persistent patterns. Analyses centered on the political dynamics of aid disbursement indicate that federal support for post disaster relief is not necessarily contingent on the level of damages, and that politics play an important role (Kamel & Loukaitou-Sideris 2004). As a result, places that are politically important to the President and localities with representatives on key congressional committees tend to receive more aid (Reeves 2011). With regards to the disbursement of federal assistance to families and individuals, the evidence indicates that persons with lower socioeconomic status suffer greater damages due to their housing conditions, and have a harder time receiving aid after a disaster (Grube et.al. 2018, Fothergill & Peek 2004). Overall, groups who are marginalized from social and political life, including women, non-citizen migrants, the poor, minorities and older and young populations tend to be at a disadvantage with regards to post disaster recovery opportunities, register relatively higher losses and pay relatively more to recover (Kamel & Loukaitou-Sideris 2004, Girard and Peacock 1997). Our study contributes to an ongoing-debates regarding the allocation of post disaster assistance and provides an important point of departure for future studies focused on recovery prospects. Furthermore, the data provided by FEMA on housing registrants for the IA program, which provides applicant-level information, allows for a more precise analysis of the determinants of aid allocation. Also, the post Hurricane María experience in Puerto Rico is an interesting case that can provide further insights into a still budding literature. Our analysis provides detailed insights regarding housing and personal property damages, and receipt of FEMA assistance following Hurricane María. It also shows which municipalities were most affected and where there are the greatest pending housing needs. We also conduct regression analysis to uncover the factors that explain levels of residential property damage, eligibility, receipt of housing assistance and pending needs. Beyond providing some general assistance trends, we sought to determine if poor households were adversely discriminated and if residing in what are locally known as "Special Communities" place IA applicants at a disadvantage. Results demonstrate that, at the aggregate level, households were not systematically discriminated if they were poor or geographically vulnerable. Nonetheless, poor households are left with a greater burden in the form of pending needs.

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Key Words: Hurricane Maria, Puerto Rico, FEMA, Post-disaster reconstruction, Post-disaster planning

SEARCHING FOR SHELTER IN THE CONTEMPORARY HOUSING CRISIS: SPATIAL POLICY VIOLENCE AND HOMELESSNESS
Abstract ID: 337
Individual Paper Submission

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Lauded as having "solved homelessness," a closer look at Utah's approach to homelessness and the housing "crisis" reveal a darker side (Yiftachel and Yacobi, 2003). By placing emergency shelter at the center of an analysis of contemporary housing policy, I unpack the "crisis" and how it was constructed by spatial policy violence, while highlighting how this crisis is experienced by people without access to housing in Salt Lake City, Utah. I report on findings from 115 semi-structured qualitative interviews conducted in 2019 and 2020 during the recent shelter reform effort where the state, city and county closed the main emergency shelter and moved to a dispersed services model, dramatically downsizing their shelter capacity in the process. The three new shelters are geographically separate and segregated by gender, with the men's shelter located in another city adjacent to the County Jail. As part of this change, the state also planned and implemented a large police operation that resulted in over 5,000 arrests.

Through this case study, I identify sites and processes of violence and harm, while highlighting the possibility of more transformative housing policies and planning practices. This research questions and challenges planning processes that too often exacerbate profound inequities through regulations and tools that result in displacement, alienation, and socio-spatial stigmatization for people experiencing homelessness (Watson, 2006; Yiftachel, 2009; Herring 2019; Mitchell, 1997). In my analysis, I engage 'spatial policy violence' as a frame to discuss the culmination of punitive spatial tactics in the local shelter reform effort, and how they are amplified along lines of race, gender, age, disability status, and other categories of difference. Spatial policy violence provides a critical analytic for spatial justice that could be useful in planning theory for thinking across a variety of sites and processes related to homelessness and informality.

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Key Words: homelessness, emergency shelter, policy violence, spatial justice, housing

RESIDENT-OWNED RESILIENCE: CAN COOPERATIVE LAND OWNERSHIP ENABLE TRANSFORMATIVE CLIMATE ADAPTATION FOR MANUFACTURED HOUSING COMMUNITIES?
Abstract ID: 340
Individual Paper Submission

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This paper assesses how collective land ownership impacts the ability of low-income residents of manufactured housing communities (MHCs) to adapt to environmental stresses, especially those associated with climate change. Manufactured housing, commonly referred to as trailer or mobile homes, is the largest source of unsubsidized affordable housing in the United States, constituting nearly 10% of all new housing units constructed each year (Prosperity Now 2018). Many residents of MHCs face a dual burden of insecurity: they are disproportionately vulnerable to both environmental hazards like floods and tornadoes and displacement by eviction (Sullivan 2018; Rumbach, Sullivan, and Makarewicz 2020). To address the latter risk of displacement among MHC residents, Resident Owned Communities (ROC-USA) has helped residents in over 250 communities nationwide over the last decade to cooperatively buy the land on which their houses sit. There is little existing research on the relationship between collective land tenure and environmental vulnerability and resilience (Shi et al. 2018). Nevertheless, research on other settlement types has shown that increased housing tenure security can make low-income households more resilient to stresses, including natural hazards (Reale and Handmer 2011).

To fill this gap, we ask: how does cooperative land ownership enable or inhibit adaptation to environmental stresses among residents in U.S. manufactured housing communities? This mixed-methods research project draws on GIS analysis of all 250 ROC sites; analysis of documents and procedures from the co-op conversion process; interviews with ROC-USA staff and technical assistance providers who facilitate co-op conversions and community governance; and in-depth case studies of three ROC communities in the northeast U.S., the region with the greatest concentration of ROC communities.

Our findings suggest that the co-op ownership model can both enable and inhibit community resilience. Compared to similarly situated privately-owned MHC's, the resident cooperative ownership model appears to enable investments that support community resilience, from community storm shelters to upgraded drainage infrastructure. ROC communities were better able to address environmental hazards in cases where: co-op resident owners were especially aware of community threats and needs; co-op conversion and periodic refinancing processes included in-depth engineering studies and investments to address infrastructure deficits and capital improvement needs; and the ROC network enabled mutual learning as well as access to grants and low-cost capital for improvements. However, these benefits are not available to all MHC's, including smaller communities and those that are located in mapped 100-year floodplains, which are excluded by ROC-USA's policies. We find that, when communities do complete the co-op conversion process, co-op ownership can also inhibit adaptation to risks by: adding layers of costly and inflexible oversight of capital improvement processes; reducing access to conventional financing for infrastructure improvements; and slowing responses to threats due to new democratic governance procedures.

This research sheds light on the relationship between collective land tenure and resilience. Specifically, it helps inform policy and procedure changes for ROC-USA and other co-op advocates to encourage climate adaptation. It also points to state and federal policy reforms that could encourage more MHCs co-op conversions and support access to adaptation financing for co-ops. More broadly, the ROC model provides a concrete example of collective land ownership and governance that can advance "transformative adaptation" (Pelling 2010), centering the needs of low-income communities and addressing underlying causes of uneven vulnerability to climate-related hazards.

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Key Words: Manufactured Housing, hazards, cooperatives, climate change, tenure

BARRIERS TO EFFECTIVE LOCAL ADMINISTRATION OF POST-HURRICANE MATTHEW BUYOUTS IN NORTH CAROLINA
Abstract ID: 368
Individual Paper Submission

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Managed retreat – the strategic relocation of people and infrastructure from flood prone areas – is increasingly seen as a viable and necessary risk reduction strategy in response to the growing threat of widespread flooding (Siders 2019). In the U.S., managed retreat typically takes the form of government-facilitated buyout programs, the largest and oldest of which is the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP) (Mach et al. 2019). Though it is a federal program, HMGP relies on a complex allocation of responsibilities and resources between federal, state, and local entities (Greer and Binder 2017).

Little research to-date, however, has examined the experience of local HMGP administrators specifically, despite the critical role they play in the program as on-the-ground implementors (Greer and Bidner 2017). Instead, most of the existing literature focuses on the experience of affected residents and defines successful implementation based on the needs and values of participating homeowners (Binder et al. 2015; Mach et al. 2019). But as both the program initiators and closers, as well as the mediators between participants and higher levels of government, local administrators have a unique and nuanced perspective on the barriers to 'successful' program implementation.

To fill this gap, we gather interview data from 18 local HMGP administrators in North Carolina after Hurricane Matthew in 2016, and more than 300 newspaper articles related to post-Matthew buyouts, to understand program implementation from a local administrator perspective. Interviewees come from both city and county jurisdictions and work in various government departments including planning, emergency management, and construction. Newspaper articles come from North Carolina-based papers, from 2016 to the present, and were selected using a keyword search of Hurricane Matthew AND acquisition or buyout. Using both template and open thematic coding, we analyze the interviews and articles to understand the difficulties local administrators face in program implementation, the complexities of their relationship with affected residents and state officials, and the metrics by which they measure effective administration.

Preliminary findings illustrate that local administrators emphasize the same features identified in international case studies as critical to the success of buyouts, including rapid movement to maintain momentum, clear channels of communication, streamlined bureaucracy, flexibility, and public engagement (Vipe and Sella 2014). Our findings also suggest, though, that many these features are missing in HMGP administration in North Carolina. Limited staff capacity, turnovers, and program delays are seen as significant barriers to implementation. In most cases, administrators find themselves doing multiple jobs at the expense of their day-to-day responsibilities, which has become increasingly problematic as the program drags on. The relationship between local administrators and state officials is also clearly fraught as a lack of flexibility, clarity, and communication with the state has created

confusion and inefficiency at the local level. These results provide valuable insight on the unique challenges local administrators face as HMGP implementors, as well as the strategies they employ to overcome those challenges, which can inform policy efforts to improve the efficacy of HMGP.

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Key Words: hazard mitigation, buyout, disaster recovery, local government, administration

AGING, PROPERTY TAXES, AND HOUSING ADJUSTMENTS: LESSONS FROM THE HEALTH AND RETIREMENT STUDY
Abstract ID: 370
Individual Paper Submission

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The aging of the baby boomer cohort is poised to shape the U.S. housing market in dramatic ways. By 2015, seniors aged 65 or older will comprise one-fifth of the U.S. population and one-third of U.S. households (Joint Center of Housing Studies of Harvard University, 2014). The U.S. is seeing an unprecedented rise in the ratio of seniors to working-aged adults that is shifting the age composition of housing towards groups who are more likely to be sellers than buyers of housing, a shift that has dramatic consequences for U.S. housing supply and homeownership rates (Myers and Ryu, 2008).

This paper sheds light on the reasons why senior homeowners liquidate their housing wealth by ending homeownership or downsizing to less expensive homes. Using data from the 2004-2014 Health and Retirement Study (HRS), we estimate competing risks hazard regression models that examine the role of property taxes, property tax abatement programs, housing values, and other demographic determinants of housing demand on senior homeowner behavior under the presence and absence of mortgage debt. Simulations from our estimated models provide estimates of the degree to which property tax rates, housing values, and loan-to-value ratios influence the likelihood of dissaving housing wealth before, during, and after the Great Recession.

Our findings suggest that rising property taxes increase the probability that senior homeowners will become renters. High income seniors are less likely to consume their housing wealth through renting but are more likely to downsize to cheaper homes. Similarly, higher housing values decrease the likelihood of leaving homeownership but increase the probability of downsizing. Reliance on mortgage debt increases the likelihood that senior homeowners will consume their housing wealth through both renting and downsizing. Rising property taxes increase the probability of liquidating housing wealth through renting, but only when seniors own their homes outright without holding mortgage debt.

Models that examine the interaction between property taxes and tax abatement programs suggest that current policy approaches to increasing housing stability for seniors have proven largely unsuccessful. Seniors without mortgage debt are more likely to move to places that offer generous tax abatement programs. The main beneficiaries of property tax abatement programs have been wealthy populations less

likely to move. Seniors who live in high valued housing or who have higher incomes receive a modest transfer from abatement programs, while low-income seniors are more likely to transition from home-owning to renting even in places with generous property tax abatement programs.

The U.S. senior population will grow significantly over the next several decades. Policymakers need to consider effective policies and interventions to plan future housing environments in response to significant demand for affordable homeownership among seniors aged 65 and older. Our findings provide useful evidence that enables state and local government policymakers to tailor fiscal policies to enable senior populations to age in place.

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Key Words: homeownership, housing tenure, baby boomers, aging, property taxes

ENDING GATED COMMUNITIES: THE RATIONALES FOR RESISTANCE IN CHINA
Abstract ID: 397
Individual Paper Submission

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Since the 1980s, gated communities have spread globally, but their prevalence in China is often discussed as a unique case due to long tradition of gated living. In 2015, China announced a policy recommendation intending to end neighborhood enclosure. As of 2020, little transformation can be observed in Chinese cities, indicating resistance to the 2015 policy. To probe the resistance to the new policy, we conducted structured interviews with officials, design and development practitioners, and educators. They explain the new policy's failure in two ways: those who reject it completely justify gating as common sense and stress risks of ungating, whereas those who sympathize with the shift in administrative thinking express doubts about the policy's feasibility. The resistance indicates that top-down policy measures can experience both practical and ideological barriers in local implementation. Ungating in China will require resolution of both the entrenched ideological barriers and of the practical obstacles.

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Key Words: ending gated communities, housing policy reform, social resistance, middle classes, China

MIXED FEELINGS: THEORIZING SOCIAL MIX FROM THE PERSPECTIVES OF RACIALIZED RESIDENTS OF HAMBURG-WILHELMSBURG

Abstract ID: 415
Individual Paper Submission

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The notion of social mix has been a common sense in German urban planning for over a century, influencing housing policy and development at the level of neighbourhoods, blocks and buildings in many parts of the country. A recent example is the island neighbourhood of Wilhelmsburg, in the city of Hamburg. Since 2005, the city-state has implemented a subsidy for student housing, a social mix policy in public housing, and two major development event-projects, in an attempt to shift outside perceptions of the stigmatized, historically immigrant and working-class neighbourhood, and to attract new residents from the white, German middle class.

International scholarly debate about social mix planning is extensive and ongoing, and includes fundamental critiques of the evidence for claims about what social mix can do, as well as of the logics that underpin social mixing, particularly as they relate to the stigmatization of low-income and racialized people. Yet it is an extremely influential myth in the German context, according to some German housing and policy scholars, and an exception has been built into Germany's General Equality Law to enable social mix planning by allowing housing discrimination in the name of "neighbourhood balance." The meaning of 'balance' goes undefined, but critical race scholars in Germany have linked it to the nature of racism in the country, in which the imagination of self-segregating, un-German 'others' in urban spaces plays a vivid and central role. In this context, the common-sense status of social mix constitutes a serious challenge to planning for racial equity in German cities, as it starts from an assumption that racialized people and neighbourhoods are fundamentally problematic.

My doctoral research has investigated what this means for racialized neighbourhoods that are targeted for social mixing. In this paper, I explore social mix from the perspectives of racialized long-time residents of Hamburg-Wilhelmsburg, drawing primarily on ethnographic interviews that I conducted in 2017. I find that residents have mixed feelings about social mix: they link the 'mixing' of the island to both positive and negative developments in recent years, critique social mix as an 'illusion,' and also advocate for it as a solution to local problems. In the process, they re-articulate social mix in some counter-hegemonic ways, in particular arguing that social mix can challenge white Germans' racism and tendency to flee what they perceive as 'migrant' neighbourhoods.

This paper thus offers a critical discussion of the notion of social mix that centres the perspectives of people who are marginalized in the context of racialized inequality. It also explores what can be achieved through anti-racist research methodology, particularly regarding the negotiation of interpretive authority between researchers and participants. The paper thus offers food for thought for planners and planning researchers, while reporting unique findings from a context in which race-critical urban scholarship is quite scarce.

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Key Words: Social mix, Germany, Hamburg, racialization, racism

AFFORDABLE HOUSING PROGRAMS IN THE UAE: ARE THEY WORKING?
Abstract ID: 435
Individual Paper Submission

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Adequate and affordable housing is a basic human need, but in the United Arab Emirates (UAE), a federation composed of seven emirates, housing is treated as a right of every Emirati national. Using interviews with municipal and housing officials and a survey of the beneficiaries of the housing schemes, the study evaluates the efficacy of the two national housing programs in the Emirate of Ras Al Khaimah that provide subsidies for affordable homeownership—the Sheikh Zayed Housing Program (SZHP) and the President's Initiative (PI).

Despite spending considerable public funds, very few published studies of various government-run housing programs in the UAE are available. Generally, the main challenge to affordable housing is a lack of resources, which has been studied extensively. Understanding housing situations where no issue exists with lack of resources is useful, but this must include explorations of what issues do emerge in such situations. In the UAE, this combination of factors has received little attention. In light of this, this study aims to answer the following three questions:

1. What is the current approach to the provision of affordable housing in the UAE?
2. How effective have the national housing programs—Sheikh Zayed Housing Program and the President's Initiative—been in making housing affordable to Emiratis, using Ras Al Khaimah as a case study?
3. How satisfied are the beneficiaries of the programs with the approval process, housing design, and locations?

The study found that the UAE's recent approach to housing has reoriented back towards a provider approach i.e. the government takes full responsibility for producing housing. The beneficiaries of the two housing programs seemed satisfied with the design of their homes but raised concerns about their locations. The locations and growth spurred by the two programs, especially SZHP, have significantly shaped the current sprawling urban form of the Ras Al Khaimah municipality. The question of the long-term sustainability of the two programs looms large, funded as they are entirely by the government, with limited participation from the private, non-profit, or informal sectors. To make housing programs financially and environmentally sustainable, every stakeholder must play a role: the federal government, the Emirate of Ras Al Khaimah, the Ras Al Khaimah Municipality, and the individual beneficiaries of the programs.

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Key Words: affordable housing, Ras Al-Khaimah, the United Arab Emirates, Shekih Zayed Housing Program, Emirati

THE IMPACT OF RACIAL SEGREGATION ON FINTECH MORTGAGE LENDING PATTERNS
Abstract ID: 448
Individual Paper Submission

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At traditional mortgage lending institutions, an in-person loan consultation involves an applicant submitting a suite of industry-standard underwriting inputs such as verification of income, a FICO credit score report, and employment history. Well-established statistical underwriting tools are then used to analyze these inputs to determine an applicant's creditworthiness. However, a new class of mortgage lending institutions popularly known as fintech – short for financial technology – lenders have begun underwriting loans using all-online applications and proprietary machine learning underwriting algorithms that process unprecedented amounts of applicant data to predict default risk (Buchak, Matvos, Piskorski, & Seru, 2018). The impact of these new techniques on the spatial distribution of mortgage credit is not immediately clear. Some suggest the lack of face-to-face consultations and the use of alternative data sources by fintech lenders will increase objectivity in loan underwriting, opening up opportunities for historically under-served groups and neighborhoods. Others see the potential for the inclusion of racial proxies in the data analyzed by fintech lenders, resulting in the penalization of nonwhite borrowers and segregated neighborhoods. Accordingly, calls for assessments of the impact of big data and machine learning algorithms on the racially variegated landscape of mortgage lending have recently intensified (e.g. O'Neil, 2017). While assessments of racial (Munnell, Tootell, Browne, & McEneaney, 1996) and spatial (Faber, 2017) disparities on loan approvals and subprime lending in the wider mortgage market form well-established canons, the literature comparing traditional and fintech mortgage lenders is in its infancy. Only one existing study compares racial disparities in fintech mortgage lending to those in traditional mortgage lending (Bartlett, Morse, Stanton, & Wallace, 2019). No existing research assesses the impact of racial segregation on the distribution of credit by fintech lenders. This paper fills this gap by answering the research question: how do racial disparities in loan approvals and subprime terms among fintech lenders differ from those among traditional lenders depending on metropolitan-level racial segregation? To answer this question, I utilize data collected under the auspices of the Home Mortgage Disclosure Act (HMDA) between 2015 and 2017 and an originally collected dataset classifying mortgage lenders as either fintech or traditional. I specify a series of linear probability models to predict the rates at which loans from fintech and traditional lenders are approved and characterized by subprime terms depending on a metropolitan area's level of racial segregation. Results suggest fintech lending exacerbates historical spatial disparities in the mortgage credit market by penalizing equally qualified nonwhite borrowers relative to white borrowers in more segregated metropolitan areas. These findings shed light on the continuing role of redlining and other discriminatory historical practices in today's mortgage market and suggest emerging lending technology must be more strictly scrutinized by regulators.

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Key Words: Fintech, Mortgage, Segregation, Subprime

PRE-PLANNING FOR POST-DISASTER REHOUSING OF PUBLIC HOUSING RESIDENTS (CASE-STUDY: SALT LAKE COUNTY)
Abstract ID: 451
Individual Paper Submission

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For public housing residents, post-disaster recovery is a function of local disaster housing plans and policies. These policies decide where these residents may go in the event of a disaster, when they can return, and to where exactly. These plans and policies however, are in turn dependent upon governmental capacity to manage disasters in general. Governments with recent disaster experience are typically better prepared to manage the next recovery due to an institutional learning effect. But what about governments in high hazard risk areas that have not experienced a recent disaster? Are they also equally prepared to re-house their public housing residents, possibly for years, in the event of a disaster?

While research on post-disaster recovery policy has grown in recent years, less focus has been paid to pre-disaster planning in at-risk communities. Even less attention has been paid to pre-disaster planning for post-disaster public housing recovery. This is a critical gap in both, disaster planning knowledge and practice, given how much it can undermine post-disaster recovery of one of our most vulnerable social groups, our public housing residents. Our study addresses this research gap by considering the status of pre-disaster planning for post-disaster public housing recovery in Salt Lake County (SL Co). The Wasatch region, which includes SL Co currently has a 1 in 7 chance of being hit by a 7.0 magnitude earthquake within the next 50 years. According to latest Census reports, it is also one of the fastest growing regions in the country. A 2015 earthquake scenario report estimated that nearly 263,300 individuals in the Wasatch region will be displaced in the event of an earthquake, requiring a massive rehousing effort by various governmental agencies, including the Salt Lake Housing Authority which currently manages 2,576 active housing vouchers.

Using Salt Lake County as a case study of an at-risk but disaster-inexperienced community, our study examines two questions: (i) How well is it prepared to rehouse its public housing residents in the event of an earthquake?; and (ii) What are the challenges and opportunities to promote pre-disaster planning for post-disaster public housing recovery in the region? Data collection is done through a review of public housing, disaster mitigation, disaster preparedness, and disaster response plans adopted by SL Co and its 17 constituent cities, and through ten semi-structured, open-ended key informant interviews with local

emergency management, city planning and housing officials. Data is analyzed using Atlas.ti software to identify themes related to the motivations, challenges and opportunities of pre-disaster planning for post-disaster public housing recovery. Preliminary findings suggest that SL Co and its constituent cities are generally not prepared to provide housing to public housing residents after disasters which could result in the high number of public health families being displaced and staying displaced in the event of an earthquake. Our findings act as a call for action in at-risk communities to conduct pre-disaster planning for post-disaster public housing recovery.

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Key Words: Post-Disaster Housing Policies, Public Housing Residents, Disaster preparedness, Earthquake, Salt Lake County

HOUSING AND HOMELESSNESS IN INDIGENOUS COMMUNITIES IN CANADA
Abstract ID: 490
Individual Paper Submission

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The purpose of this study is to assess the scope of the current housing and homelessness situation in the Tlicho region in the Northwest Territories (NWT) and identify solutions to ameliorate these issues. The study has multi-fold objectives:

*To assess the scope of the current housing and homelessness problem in the Tłı̨chǫ region of the NWT

*To determine the root causes of housing and homelessness issues in the region

*To analyze the housing policies of the Northwest Territories Housing Corporation (NWTHC); and

*To identify best practices and recommend effective strategies or solutions to ameliorate these housing and homelessness issues.

The Tłı̨chǫ region with its own self-government is just north of Great Slave Lake with a population of 3,176 across a land mass of 39,000 sq km, but the population is concentrated in four disparate communities - Behchokǫ̀, Gamètì, Wekweètì, and Whatì.

The study used a mixed-method approach to collect relevant data. NWTHC provided policy and program

documents and detailed customized datsets. This was then complemented by interviews with close to 60 individuals across the region over a period of seven months. The individuals included the current and former grand chiefs, the current chiefs, the elders in the communities, and Senior Administrative Officers, housing managers and other staff in each community. Also interviewed were several homeless individuals.

The study makes it abundantly clear that the housing and homelessness in the region are in a critical state, especially in Behchokǫ̀, where it is a full-blown crisis. Homelessness is visible in Behchokǫ̀, which constitutes unsheltered homeless people, making up a portion of a larger at-risk population. Hidden homelessness seems more prevalent in the other three communities where the homeless are provisionally accommodated by their friends or families. The factors responsible are largely consistent with the existing literature. This study, however, uncovers a few more nuanced aspects of housing, for instance, seismic socio-cultural shifts occurring within Indigenous communities, the effects of neo-liberalism, and the unintended consequences of housing policies. The policy recommendations suggest a set of responsibilities to be shouldered by the two key stakeholders—NWTHC and the Tlicho Government (TG). Among several recommendations were a place-based policy approach by NWTHC along with a greater role for TG in the provision of housing.

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Key Words: Indigenous people, housing, Tlicho, Northwest Territories, Canada

NEGOTIATING SHELTER: UNDERSTANDING THE RATIONALE BEHIND ENGAGING IN INFORMAL RENTAL ARRANGEMENTS

Abstract ID: 494
Individual Paper Submission

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Although more people are renting, as renter share of households has increased in proportion from 31% in 2004 to 35% in 2012, the number of problems faced by renters remains high (Joint Center for Housing Studies of Harvard University 2013). The United States private housing market within the capitalist system is broken in that it fails to function for people of low-incomes. This has become evident in many cities across the United States as rents have been increasing and real wages have been decreasing, thus resulting in an exorbitant proportions of evictions occurring due to the non-payment of rent (Partnership for the Public Good 2020). In the City of Buffalo, a majority of evictions are due to the inability of tenants to pay rent (Partnership for the Public Good 2020). This high level of evictions leads to pervasive negative compounding effects including, but not limited to, issues with employment, education, health,

housing quality, homelessness, and overall neighborhood conditions.

Unfortunately, there is no solution for affordable housing within the capitalist market framework for people with low-incomes, specifically within the private, urban housing market. One of the ways in which people with limited incomes attempt to make the broken system work is to engage in informal rental arrangements. Informal rental arrangements may encompass a wide variety of agreements including, but not limited to, having no signed, written document between the two parties or bartering services in exchange for housing. A previous study conducted by the author, originally intended to uncover the ways in which maintenance responsibilities are shared between landlords and tenants, revealed that a large number of renters rent homes without negotiating or signing formal leases.

The high propensity of non-lease renting can influence a number of factors within the social, economic, and physical environments of neighborhoods. As such, this project focuses on understanding why and how lease-less renting occurs. The project investigates two set of related questions: What forms of rental arrangements exist between landlords and renters in low-income neighborhoods? And, why do people engage in these rental agreements? Through extensive in-depth interviews with micro-level participants (landlords and renters engaging in informal rental arrangements) and macro-level participants (people who work in the field of housing dealing with people who engage in informal rental arrangements) this project attempts to understand why and how lease-less renting occurs. Additionally, through a content analysis of the recent changes made to the New York State Landlord-Tenant Law in July of 2019, this study analyzes how non-lease participants (both landlords and tenants) might be impacted.

The findings from this study provide much needed information into the undocumented world of non-traditional or informal rental arrangements, thus filling a gap in existing literature. By understanding how this 'invisible' group operates, the challenges they face, and how they ended up in this group, policies that better address this group of people can be made. By having better policies in place for this group of renters and landlords, there is the potential for more responsibility, accountability, subsidies, etc. to be in place to prevent the negative outcomes (eviction or homelessness) prior to them occurring.

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Key Words: Rental Arrangements, Housing Law, Leases, Eviction, Habitability Issues

THE RENT EATS FIRST: RENTAL HOUSING UNAFFORDABILITY IN US METROS
Abstract ID: 525
Individual Paper Submission

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Rent is the largest expense for most households. While most other expenditures can be cut back or delayed, rent is relatively fixed and the consequences for nonpayment, ultimately eviction and homelessness, are severe. In an Enterprise Community Partners survey, 95 percent of lower-income renters reported prioritizing rent over all other bills. High housing costs also lead to difficult decisions for renters. The State of the Nation's Housing report notes that cost-burdened households in the bottom expenditure quartile spend less on healthcare and food than unburdened households. Similarly, the Urban Institute found that about a quarter of all renters lack the reserve to cover a $400 expense, nearly a third are food insecure, and a fifth have problems paying medical bills.

This paper examines the geography of housing unaffordability across the United States by using a residual income approach to measure the extent and variation in shelter poverty (Stone, 2006) in the nation's metro and non-metro areas, building on previous studies by Grady (2019), Herbert, Hermann, & McCue (2018), and Kutty (2005). We ask: If the rent eats first, how many households have enough income left over to pay for a basic but comfortable standard of living? Our research questions are as follows:

 How many households across the country cannot afford a basic standard of living after paying for housing? Where are these households concentrated? What are the characteristics of these households?
 How large is the average deficit for households? How does this differ for households who spend more than 30 percent of their income on housing, a more traditional measure of housing cost burdens? To answer these questions, we use budgets from the Economic Policy Institute that include food, childcare, transportation, health care, taxes, and other necessities. These estimates are specific to counties and a range of household types. After adjustments, these baseline expenditures are merged with data on monthly rents, income, and household composition from the 2018 American Community Survey PUMS. After subtracting housing costs from income, we consider households burdened by rent when they have insufficient leftover income to cover all other expenditures that allow for a basic standard of living. We use logistic regression to highlight the household and geographic characteristics that are associated with a higher likelihood of deficit income. We find that households with children and low-income households in high-cost areas are more likely to have income deficits and have the largest deficits.

Ultimately, this research provides local, reproducible estimates of shelter poverty that can be aggregated to the national level. The findings are relevant to researchers, planners, and policymakers as they build on, supplement, and add to a growing body of literature on the extent and consequences of housing affordability.

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Key Words: Housing, Housing affordability, Rental, Rental affordability, Rent burden

NO PLACE IN THE CITY: THE SEGREGATION OF AFFORDABLE MARKET-RATE RENTALS IN BEIJING
Abstract ID: 530
Individual Paper Submission

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Since the implementation of the housing commodification policy in the 1990s, residential segregation by income has become an emerging concern in Chinese cities. Existing literature on residential segregation has mostly focused on the informal rental market (Harten & Kim, 2018; Wang et al., 2009; Wong et al., 2018; Zheng et al., 2009), and little is known about the formal market-rate rentals. Nevertheless, with the continuing clearance of informal settlements (Huang & Yi, 2015), formal market-rate rentals are likely to play a more pivotal role in the provision of affordable housing in the upcoming years.

Using data collected from two real estate brokerages, this paper examines changes in the spatial distribution of affordable market-rate rentals in Beijing between 2015 and 2018. We define rents as affordable if they are lower than 30% of the average monthly disposable income of households who lie in the bottom 40% of the income distribution. On a subdistrict-level, we measure the segregation of affordable rentals by the extent to which they are concentrated and unevenly distributed. On a city-level, we compare the degree of uneven distribution of the affordable and non-affordable rentals. We also use the POI (Point of Interest) data in 2014 to compute the average distance to the nearest subway station and the average number of restaurants, elementary schools, and medical services within a 1 km radius (10-minute walking distance) for rentals of different price ranges.

Our analysis suggests that: (1) not only the availability of affordable market-rate rentals decreased notably in the central city area, the remaining affordable units had also become more isolated in the central-city subdistricts; (2) when compared across rentals of different price ranges, the affordable rentals were the most segregated in both 2015 and 2018, with a city-level index of dissimilarity of 0.71 and 0.75 respectively; (3) the affordable rentals were often located in places with poor access to public transit and insufficient provision of urban amenities.

The rapid change of the distribution of affordable market-rate rentals coincides with a series of urban redevelopment initiatives. The relocation of "non-capital functions" and the following redevelopment of the vacated lands tend to drive up local housing prices, making rentals less affordable for the low-to-moderate-income population. Shantytown redevelopment and other similar urban renewal projects are also found to drive up the housing price, making formal market rentals less affordable. By reducing the affordable housing stock, the urban redevelopment initiatives in Beijing are forcing low-to-moderate-income renters to move further away from the city center.

There is a clear need for policy to enhance housing affordability in central locations. Urban redevelopment projects should provide renters adequate compensation that allows them to rent a unit in nearby neighborhoods for a temporary transition. Meanwhile, a wider implementation of the market-rate rental subsidy program would enhance the ability of low-to-moderate-income renters to find a decent place to live in the central city area.

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FACTORS INFLUENCING HOUSING SATISFACTION OF INFORMAL HOUSING TENANTS: FOCUSING ON THE EFFECT OF SOCIAL CAPITAL BY HOUSING TYPE
Abstract ID: 565
Individual Paper Submission

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In many large cities where rapid urbanization continues, the majority of urban poor have been excluded from the housing market. Due to the lack of affordable housing and inadequate capability to cope with their housing needs, they are ultimately being pushed to informal housing. Not only is informal housing in poor living conditions, but its physical and spatial characteristics restrict the building of social capital among tenants. Many previous studies have indicated that social capital affects the housing satisfaction of both formal and informal housing households. There are, however, few studies that incorporates the effect of social capital by housing type specifically for the low-income tenants who live in informal housing. As there are variations in household and housing characteristics for different informal housing types, an elaborate study needs to be conducted for tenants living in informal housing specifically by housing type in regard to their quality of life.

This study aims to empirically analyze the factors that influence the housing satisfaction of tenants living in informal housing and specifically to examine their causal structure according to different housing types based on the 2017 Korea Informal Housing Survey data provided by the South Korean government. The number of households occupying informal housing - jjokbang (a small shabby cubicle), shanty/vinyl greenhouse, goshiwon (a tiny housing and studying unit at cheap prices) - in Korea has rapidly increased from 57,066 in 2005 to 393,792 in 2015. For this study, the multiple regression model and the path model are used.

The findings are as follows. First, the tenants of all types of informal housing show higher housing satisfaction as they live in better housing conditions. Second, except for the housing condition variable, social capital is the only factor that affects the housing satisfaction of tenants living in jjokbang, and these two variables have a positive relationship. It implies that since the majority of them are in middle-aged living alone, their social attachment within a community might be the only thing they can be satisfied with their housing. Third, the effect of social capital is not statistically significant for tenants of shanties and vinyl greenhouses have significant effects on their housing satisfaction. Due to the characteristics of their family-based housing unit, making social ties and networks with neighbors is relatively less important for them than earning a living for their family. Thus housing satisfaction of the tenants of this housing type depends more on income and cost of living. Finally, the tenants of goshiwon tend to be more sensitive to the housing size as well as the burden of housing costs. Although goshiwon is known to be a temporary residence for one-person household who prepare for employment while receiving a financial support from their family, the housing size and costs are the main factors that directly affect their housing satisfaction rather than social relations with neighbors.

These findings suggest that there should be various policy approaches depending on the housing types to improve housing satisfaction of informal housing tenants. Government support, such as a community capacity building program may be required to promote social ties and networks within communities specifically for the tenants living in jjokbang who are greatly affected by social capital. For the tenants of shanties and vinyl greenhouses, economic means including jobs are needed to support their family. Lastly, for the goshiwon tenants, policies that can upgrade their living conditions or reduce housing costs are effective.

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FROM AUTHENTICITY TO 'AUTHENTICITY': MEDIA REPRESENTATIONS OF THE GENTRIFICATION OF TORONTO'S KENSINGTON MARKET
Abstract ID: 570
Individual Paper Submission

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Gentrification has been described as one of the most politically loaded words in human geography (Davidson and Lees, 2005). The use of the term, particularly within the media, has increased dramatically over the past decade (Hochstenbach, 2017). However, despite this frequency of use, very few studies have examined the different narratives of gentrification that are portrayed in the media, how they change over time and to what extent they reflect, reinforce or contradict actual processes of change within urban space.

Many media representations of gentrification are rooted within specific neighbourhoods that are undergoing dramatic, and high-profile processes of change. The continued appearance of newspaper articles over many years gives us an opportunity to examine how these public narratives of gentrification change over time. Toronto's Kensington Market is one-such neighbourhood that has received significant attention in both local and national media. Historically an immigrant reception neighbourhood, the Market has been undergoing a process of gentrification for more than a decade. This is reflected not only in the upgrading of housing, but, more visibly, within its changing retail landscapes and other aspects that enhance quality of life, such as temporary pedestrian zones (McLean and Radher, 2013).

Building on existing research examining gentrification in the Canadian media more broadly (Tolfo and Doucet, 2017), this article will examine representations of gentrification in Kensington Market in both The Toronto Star and The Globe and Mail. Using Factiva, a powerful research database of newspapers and other publications, we identified all articles from these two publications that have discussed gentrification in Kensington over the past twenty years. We then code these articles based on their tone (positive, neutral, negative), the themes discussed and specific places within Kensington that are referenced.

What we find is that the meaning of gentrification in Kensington has changed significantly over time. We also find that a specific place, such as a shop or restaurant, can change its positionality within debates about gentrification as it become more 'authentic.' To this end, some businesses that were originally criticised for contributing to the gentrification of Kensington when they first opened, have, when going out of businesses a decade later, been lamented as 'victims of gentrification.'

Interpreting gentrification through a media-focused lens therefore enables scholars to better understand the shifting perceptions of both the process itself, and wider critiques and debates about contemporary urbanism that play out beyond the walls of academia. This is relevant for planning scholarship and practice because the framing of gentrification within the media helps to shape how spaces are interpreted by the public (Brown-Saracino and Rumpf, 2011) and evaluating these narratives provides insightful and

necessary information for the planning of more socially-just cities.

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Key Words: gentrification, media representations, critical urbanism, authenticity, Kensington Market

ARE DOWNTOWNS FULL?
Abstract ID: 620
Individual Paper Submission

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From 2010–2018, the U.S. experienced a relative boom in multifamily housing. Much of this housing was built near city centers on land cleared of two key former uses: industrial & parking, on the one hand, and of former neighborhoods, especially segregated Black communities (Fullilove 2016). Frequently, these clearances took place in the mid-twentieth century (Bunten, 2019; Gottlieb, 2019), leaving the land relatively free of residents—and importantly, free of neighbors. The lack of current neighbors makes these locations attractive sites for new housing development, which is regularly stymied by the opposition of nearby neighbors (Einstein et al 2019). The availability—and tremendous scale—of this already-cleared land has meant that cities were able to add thousands of new apartments with little effect on current residents. Are we running out of locations like these? In this paper, we investigate whether high-price cities are running short on large development sites. We argue that this the eventual shortage—combined with restrictive zoning in already-rich neighborhoods—would threaten a further increase in the pace and scale of gentrification in existing central communities.

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Key Words: Gentrification, Construction, Supply constraints, Urban renewal, Land clearance

NEIGHBORHOOD DETERMINANTS OF EVICTION FILINGS: A MICHIGAN STATEWIDE ANALYSIS

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Interest in evictions has proliferated in recent years among researchers, policymakers, and housing advocates. This shift has been accompanied by an accumulation of empirical evidence that eviction is not merely a symptom of poverty, but also a cause of it: experiencing a forced move increases an employee's likelihood of losing their job (Desmond and Gershenson 2017), increases rates of depression (Burgard, Seefeldt, and Zelner 2012, Vasquez-Vera et al. 2017) and may impact physical health outcomes (Desmond and Kimbro 2015). Growing evidence has documented the prevalence and impact on U.S. communities of eviction case filings, which lead to forced moves and can result in costs and pose an obstacle to future housing for tenants (Immergluck et al. 2019).

Existing research relating evictions or eviction cases to neighborhood characteristics is geographically limited and often omits important housing or legal system variables. Drawing on administrative court records from nearly the entire state of Michigan, this paper reports an exploratory analysis of the relationship between eviction filings from 2014-2018 and a variety of neighborhood characteristics at the Census tract level, contributing to research that seeks greater understanding of the local characteristics related to eviction filing. We fit a negative binomial multivariate regression model to explain eviction case filings, and then fit separate models for urban and rural areas to explore differences in relationships due to their distinct housing markets. Our analysis confirms that statistical relationships exist between eviction filings and many variables documented in previous studies conducted for smaller geographic areas, including percent black population, educational attainment, single-mother households, and percentage of residents under 18. We also confirm the importance of variables that are emerging in the eviction literature such as foreclosures, job accessibility, and the presence of multifamily structures and subsidized housing units. Finally, we find a strong relationship between the presence of mobile homes and eviction filings in both urban and rural areas, becoming the first quantitative study to do so. Eviction filings in rural areas are related to percent single-mother households, job accessibility, and mortgage foreclosures, but not several variables important in explaining urban evictions such as poverty rate, housing cost burden, or percent black population.

The analysis suggests several policy implications. First, economic forces such as housing cost burden, low job accessibility, and lack of affordable mortgage payments are clearly major drivers of eviction filings, justifying ongoing efforts to address housing costs by boosting wages and facilitating the production of market-rate and subsidized housing. Second, although limited by the ecological nature of our variables, our findings about the demographics of places with high eviction rates suggest further efforts to investigate and address the discriminatory impact of evictions on single mothers, children, and African Americans. In particular, we agree with argument made by Matthew Desmond and others that the impact of eviction on children justifies a more aggressive public policy response to reduce evictions in general. Finally, our findings highlight the importance of focusing eviction-prevention efforts and policy attention on mobile homes and mobile home parks, which have been relatively neglected in prior research conducted in mainly urban and metropolitan settings.

Our data reveal that hundreds of thousands of Michigan residents face legal evictions, and that untold thousands are forcibly removed by agents of the state's courts. What is more, although the phenomenon of eviction arises from a constellation of factors, its effect is most likely to perpetuate disparities in health, employment, educational outcomes, and social wellbeing that are well documented in the state. Our analysis adds empirical detail to this general picture, highlighting the types of places most affected by eviction, and hopefully providing impetus for further action.

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Key Words: evictions, housing stability, mobile homes

RENT BURDEN IMPACTS AND COPING STRATEGIES
Abstract ID: 644
Individual Paper Submission

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This paper draws from primary collected survey data (n=794) to examine the complex and nuanced effects of rent burden on renters, which extend far beyond the consumption tradeoffs identified in previous literature. Rental affordability is an issue of growing impact across the United States, particularly in urban areas. Affordability is generally assessed in terms of the household's rent-to-income ratio, where households paying over 30 percent of their income on rent are considered rent burdened. Research cites the 30 percent rent burden marker as an important threshold after which households begin to make critical tradeoffs between paying for rent, paying for medical services, and paying for food (Gabriel and Painter, 2018). These tradeoffs create disperse effects, including that children in rent burdened households perform more poorly in schools than those who are not (Holpuka and Newman, 2015; 2016).

Rent burden has become a particularly significant issue since the Great Recession, worsening over the past decades due to stagnant wages amidst growing housing costs. Rising housing costs are driven, in part, by low rental vacancy rates and insufficient affordable housing supply to meet demand (Gabriel & Painter, 2018). In 2017, nearly half the nation's renter population—47.4 percent of renter households—experienced rent burdened. Furthermore, rent burden has grown across most income groups, particularly in higher-cost regions and among low and middle-income populations (Harvard Joint Center for Housing Studies, 2019; Gabriel & Painter, 2018). In the Los Angeles region, 57 percent of renter households are rent burdened, and nearly one in three pay over 50 percent of their income on rent (Joint Center for Housing Studies of Harvard University, 2019). Since housing generally comprises the largest share of a household's budget, growth in housing costs deeply impacts the welfare of low-income households over the past decade. The growing scale of rent burden across the nation, as well as its significant and complex effects, underscores the importance of understanding this phenomenon both among households, but also within families and across broader communities.

Literature on rent burden has provided important insight into the scope and scale of the tradeoffs that families must make when they face rent burden, and has captured some of the broader effects of this phenomenon. However, because this literature has focused on quantitative studies using administrative data, much remains unknown about the nuanced, disperse and cumulative impacts of housing

affordability issues on households, but also families and communities, which are harder units of analysis to capture in administrative data. Furthermore, we lack a clear understanding of the ways in which rent burden may generate differential vulnerability across populations, and particularly among immigrant groups. This paper relies on primary collected survey data to generate a more nuanced understanding of the ways in which housing affordability exacerbates the vulnerability of residents and communities, suggesting significant and disperse effects.

We surveyed 794 residents across two Los Angeles neighborhoods, Central and South Los Angeles, through a 2-stage random block sampling design and a door-to-door, in-person approach. This methodology utilizes a geographically-based approach that covers all Census tracts within each area and employs random sampling of street blocks as well as households within street blocks to achieve a robust and valid sample. Surveys generally lasted between 40 minutes to 1 hour. We use these survey data to deepen our understanding of the nuanced and far-reaching effects of rent burden. We find strong differences in how residents and families cope with rent burden, including the trade-offs residents make, their duration and impacts, as well as differences across groups.

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Key Words: rent burden, affordability, housing, survey research

AFFORDABLE SOUTH LOS ANGELES: SURVIVAL, STRESS, & SUPPORT
Abstract ID: 655
Individual Paper Submission

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Unaffordability has reached a crisis level across the United States due to rising rental costs and stagnating wages. As the imbalance between incomes and rents becomes more severe, it is exceedingly difficult for residents to maintain stable housing and meet their basic needs. Housing is particularly important because it structures access to employment and education, impacts health and wellness, and depletes much of community members' monthly budgets. Given this influence, housing offers an important entry point to study affordability and a key policy area where local governments can intervene to systematically improve residents' lives. This project examines the ways unaffordability and neighborhood change contribute to processes of housing instability. The knowledge generated can be used to design interventions that address residents' needs and concerns prior to the final outcomes of displacement, eviction, and houselessness.

Traditionally, research on affordability has focused around consumption trade-offs and displacement. When tenants pay more than 30 percent of their income on rent, they are forced to cut back on basic necessities such as food, utilities, healthcare, and education (Kirkpatrick & Tarasuk, 2011; Díaz McConnell, 2016; Pollack, et al., 2010; Newman & Holupka, 2016). There is limited understanding of the factors residents consider when making these trade-off decisions, however. In addition, research has shown that climbing housing prices lead to instability--particularly for vulnerable residents such as the

elderly, residents of color, and women (Sims, 2016). This literature provides data around the incidence of these events, but does not address the long-term impacts of subsisting at the margins while under threat of losing a home. Stress, fear, and unfair practices each play a role in residents' ability to retain shelter and survive.

South Los Angeles represents an important case study as the affordability crisis becomes more pervasive. Since the Great Recession, mounting development pressure and an overall housing shortage have led to quickly escalating housing costs and a diminishing supply of affordable homes throughout the area. This builds upon a legacy of unequal access to housing and severe income inequality that has resulted from exploitation, discrimination, deindustrialization, and disinvestment. Despite histories of exclusionary and destructive policy, residents have formed dense systems of support and resistance to remain in place.

Using South L.A. as a case study, this research is composed of two interrelated phases. First, 17 focus group conversations were facilitated with residents consisting of a 20 minute survey followed by a 75 minute conversation. Second, a door-to-door survey of 400 households was conducted using stratified randomization at the census block group level that took roughly 45 minutes as a semi-structured interview. This data was leveraged for mixed methods analysis to answer the following research questions:

1. How do unaffordability and neighborhood change contribute to processes of housing instability?
2. How do residents' identity and situational context impact the survival strategies they employ?
3. How do social and institutional supports buffer the impacts of the crisis?

This data reveals that Black and Latinx tenants have differential responses to the crisis due to varying access to social and institutional support as well as structural factors related to racism, sexism, and documentation status. In addition, I find that the impacts of unaffordability do not remain contained as one-time stressors. By forcing tenants to change the way they live, these strategies have long lasting impacts even after initial sacrifices are made. Although current pressures have strained the community infrastructure found throughout South L.A., residents' continuing resilience offers new ways to think about interventions that are grounded in community control and local assets. Project results were disseminated using diverse modalities including a community website, community zine, formal policy papers, and an art installation.

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Key Words: Housing justice, community development, social determinants, health

PROTECTING NEIGHBORHOOD PRIVILEGE: THE ONGOING IMPACT OF EXCLUSIONARY DEED RESTRICTIONS IN AUSTIN, TEXAS
Abstract ID: 675
Individual Paper Submission

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In the current context, where cities are debating changes to zoning meant to help them build their way out of the affordability crisis, inequities embedded in current land use patterns are critical to understand. In many cities, zoning created in the early twentieth century codified patterns created through prior real estate practices such as deed restrictions that protected property values in wealthy, white residential areas by excluding non-residential uses and also non-white people. Cities around the country have begun mapping the extent and location of racial deed restrictions in order to raise awareness of the roots of current patterns of exclusion and inequity embedded in neighborhoods. While private racial restrictions were overturned by the Supreme Court, such restrictions typically ran concurrently with, and were reinforced by, restrictions on the use of property and the intensity of development. These restrictions often remain in force and, research suggests, can produce the same racially exclusionary effects. In this paper, we explore the way that ongoing private restrictions continue to operate to exclude low-income, often minority residents from affluent, historically white neighborhoods. We focus on the case of Austin, Texas, a city whose original zoning strongly reflected the underlying patterns established by private deed restrictions, laying the foundation for the city's racially and economically segregated pattern of residential development. In recent years, the city has struggled to re-zone residential areas to implement its 2012 comprehensive plan, which calls for the creation of "complete communities" throughout the city and its 2016 Affordable Housing Strategic Blueprint, which calls for integration of affordable housing throughout the city. Building on Tretter's work documenting the existence of deed restrictions in central neighborhoods established before 1948, we review deeds to identify areas where restrictions specifically protect affluent, low density, single family neighborhoods from change. In this paper, we focus on neighborhoods that began with restrictions and that were coded as "most desirable" under the city's housing security (eg, "redlining") map in 1937. We compare the change over time in the population density and demographics in these neighborhoods to the city overall, and also project forward how proposed citywide rezoning—intended to expand housing opportunities--will deepen these inequities.

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Key Words: zoning, segregation, housing, density

THE SPILLOVER EFFECT FROM TORONTO? GENTRIFICATION AND SPATIAL PATTERNS OF MIGRATION TO URBAN AND SUBURBAN HAMILTON
Abstract ID: 689
Individual Paper Submission

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Anecdotally, it seems as if almost everyone in Toronto knows someone who has moved to Hamilton. Cheaper housing costs, a vibrant arts scene and proximity to Toronto via a growing number of commuter trains means that Hamilton, 60 kilometres southwest of Toronto, receives a lot of media attention as an alternative to overpriced and congested Toronto (see Harrap, 2018; Hayes, 2016). These moves are

framed as households priced out of Toronto's gentrified and booming urban core relocating to neighbourhoods in and around downtown Hamilton, and subsequently contribute to their gentrification (Berman, 2017).

While there are many examples of this spillover gentrification (Amsterdam to Rotterdam, San Francisco to Oakland, Berlin to Leipzig), very little scholarly research has been done in understanding how gentrification spreads from major global cities to established mid-sized cities within commuting distance. The dominant view is that gentrification 'cascades' down the urban hierarchy (Lees, 2006), however, we tend to rely more on media accounts of people who have made these moves (Berman, 2017; Harrap, 2018), rather than empirical data on migration flows. While gentrification is happening in downtown Hamilton (Harris et al., 2015; Hayes, 2016), there has yet to be a thorough analysis of the migration flows from Toronto to better understand the role it plays in shaping neighbourhood change in Hamilton. Questions of how many people have moved from the Greater Toronto Area and which neighbourhoods in Hamilton they are settling in are major topics of conversation in planning and public debates within Hamilton, however, they primarily rely on anecdotes alone, something that is problematic if these are used to shape planning and policy decisions.

The aim of this paper is to quantify these anecdotal stories of migration from Toronto to Hamilton by examining intraprovincial migration patterns for those moving to Hamilton. To do this, custom data tabulation has been commissioned from Statistics Canada for both the 2006 and 2016 census. These data sets provides migration figures that shows, for each Census Tract in the Hamilton Census Metropolitan Area (CMA), the number of people that moved from every municipality in Ontario in the previous five years. Of primarily interest for this analysis are municipalities in and around Toronto and the different spatial settlement patterns (urban/suburban) within Hamilton. Two research questions will guide this paper:

1. How many people have moved to Hamilton from different parts of the Greater Toronto Area and have these migration flows increased between 2006 and 2016?

2. What neighbourhoods are in-movers to Hamilton settling in and to what extent does this vary according to different origin cities, specifically Toronto and its suburbs?

In 2016, Hamilton had a population of 536,917. The city encompasses older urban neighbourhoods, suburban areas, small villages that have become incorporated into the larger city and rural areas, some of which is farmland and protected by the greenbelt, while other parts are rapidly developing into new subdivisions. Despite growing media attention in recent years, migration from the city of Toronto to Hamilton has remained relatively constant since 2001. Most migrants from the city of Toronto are moving to older neighbourhoods in and around downtown Hamilton, particularly those close to the city's two train stations. These are also neighbourhoods where gentrification is most evident However, the largest migration flows to Hamilton are in various forms of suburban-to-suburban migration: households moving from municipalities around Toronto to suburban census tracts in Hamilton. While more numerous, this trend is less visible in planning debates. This overemphasis on downtown Toronto to downtown Hamilton migration risks detracting attention from this larger flow of people, which also has consequences for housing affordability in Hamilton's suburbs.

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THE SPATIAL RELATIONSHIP BETWEEN EVICTION FILINGS, NEIGHBORHOOD CHARACTERISTICS, AND PROXIMITY TO THE CENTRAL BUSINESS DISTRICT: A CASE STUDY OF SALT LAKE COUNTY, UTAH
Abstract ID: 703
Individual Paper Submission

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There is an increasing body of academic literature analyzing evictions in different cities and contexts in the fields of urban studies, public health, sociology, geography, and housing studies. Other research has explored who is evicted, pathways to eviction, the uneven distribution of evictions, the psychological, health, social, economic and financial repercussions that eviction has on families with children, whether or not there is a relationship between gentrification and eviction, and what communities can do to organize or change legislation related to eviction. However, little is known about evictions within housing studies, and more research is needed on this topic (Greenberg, Gershenson, and Desmond 2016; Hartman and Robinson 2003).

This study investigates the link between neighborhood characteristics and the rate at which landlords file for eviction. Although research already exists on the realm of neighborhood characteristics associated with poverty and deprivation (Gutiérrez and Delclòs 2016; Desmond 2016; Hartman and Robinson 2003; Collinson 2011; Desmond 2012; Laniyonu 2019), the authors collected a total of 4,019 legal records of court-ordered evictions from Salt Lake County for 2015. Using this data, this study addresses the following questions: (1) Where in Salt Lake County do evictions occur? Answering this will help address two further questions: (2) Are poor and deprived neighborhoods disproportionately affected by eviction? And (3) Do evictions predominantly take place in areas of opportunity (e.g., close to the CBD, high-employment mix, and so on)? This study is based on the premise that evictions are highly dependent on contextual causality and that Salt Lake County would have different manifestations than other cities. Based on a list of variables used in previous housing eviction studies, twelve demographic and socioeconomic characteristics data were identified and used as covariates for analysis. Most of the data for covariates were collected at the Census block group level from the 2013-2017 American Community Survey (ACS) data, including 612 Census block groups for Salt Lake County.

To address research questions, this study uses spatial point pattern analysis widely used in geography, ecology, and epidemiology. Prior to modeling, we explore the intensity of the eviction point pattern dataset using a non-parametric estimation tool called kernel density estimation (KDE). As we expect, the KDE map shows the directional characteristics of the distribution of housing evictions. High eviction rates were also found along the main arterial route connecting downtown Salt Lake and the western part of Salt Lake County. This area has a greater proportion of non-white and Latino populations. Compared to majority-white neighborhoods, they are relatively underdeveloped areas with a high percentage of low-income households, which tend to be more vulnerable to housing evictions. The decay of eviction rates with distance from the CBD follows a similar pattern to the bid-rent curve of residential land use in von Thünen's bid rent theory. Our results show that low-income individuals in Salt Lake County tend to live closer to the CBD because of access to opportunities.

After the KDE mapping, the results from the inhomogenous Poisson point process model show that neighborhoods with fewer whites, more Hispanics, higher percentages of families below poverty, a higher percentage of households receiving food stamps, and higher unemployment are associated with more eviction filings. Authors also found a strong implicit link between eviction filings and accessibility of full-time employment, employment mix, short commute times, commuting by public transit, and walkability. From these results, this study contributes to expanding an understanding of the relationship

between evictions and neighborhood characteristics where evictions are located—especially, estimating the risk of evictions as a function of distance from CBD.

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Key Words: evictions, neighborhood characteristics, spatial point pattern analysis, central business district

WHAT'S THE MATTER WITH NEW JERSEY? UNDERSTANDING THE FAILURE OF MT. LAUREL
Abstract ID: 751
Individual Paper Submission

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New Jersey is famous for the landmark Mount Laurel decisions of the state Supreme Court that ruled that the state constitution obligates all municipalities to address the need for affordable housing. In Mount Laurel 1, the court determined that municipalities must provide housing to all income groups, and meet a fair share of their region's housing needs. In Mount Laurel 2, the court gave developers the standing to sue local governments that use zoning or other means to prevent or impede development of affordable housing. In 1985, the state legislature established the Council on Affordable Housing (COAH) to determine regional housing needs and allocate this need to municipalities within each region. The legislation also made local governments immune from developer litigation if they submitted plans to COAH that adequately specified how they intended to meet their affordable housing obligations. COAH oversaw two phases of Mt Laurel implementation, from 1987 to 1993 and 1993 to 2000. During this period about 300 of the state's 566 municipalities submitted housing plans to COAH and an additional 78 were under court supervision.

What is not well known is that New Jersey failed to establish new affordable housing goals after 2000. The state took several years to propose a new set of goals, and when it finally did so, the courts rejected these goals, and the methodology used to determine them. All subsequent proposals were also rejected. After years of litigation, the state Supreme Court in 2015 declared COAH to be defunct and decided that the courts must once again be responsible for enforcement of the Mt. Laurel doctrine.

In this paper I examine why New Jersey failed to establish legally acceptable affordable housing goals after 2000, and consider how the long stalemate might have been avoided. In addition, the paper discusses the current status of Mt. Laurel and the extent to whichlocal governments have continued to support the development of affordable housing in the absence of state supervision.

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Key Words: Affordable Housing, Inclusionary Zoning, Mt. Laurel, State and local housing policy

DOES OWNING A HOUSE HELP LOW- AND MODERATE-INCOME HOUSEHOLDS SAVE MORE THAN RENTING?

Abstract ID: 758
Individual Paper Submission

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Does owning a house help low- and moderate-income households to save more? Utilizing the Community Advantage Program Survey panel data that contain rich information of low- and moderate-income homeowners who are matched to a set of a similar group of renters, we examined the causal effect of homeownership on savings. This study investigates whether homeowners who received mortgages through the Community Advantage Program were less vulnerable than those who did not participate in the program due to more savings and cash flows during the 2008 housing crisis as a result of owning a house. Specifically, we used the Community Advantage Program Survey panel data from 2007 to 2012 to examine the causal effect of homeownership on savings in both short- (one year) and long-run (five year) periods. Using ordinal regression analyses and lagged variables to address the simultaneity issue between homeowners and savings, we found that being a homeowner allows a household to save more than being a renter not only during the normal period but interestingly also during the severe housing crisis period in 2008. These results remain robust even after controlling for important confounding factors such as income, education and the number of children attending schools or colleges. This study, therefore, contributes to the existing literature by providing further evidence on the importance of homeownership on savings for low- and moderate-income households using updated micro-level dataset of homeowners and renters that includes important periods such as the 2008 U.S. subprime mortgage crisis. This finding could also serve as a useful benchmark for policymakers in developing countries that are considering implementing similar types of housing programs.

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Key Words: affordable housing, savings, low-income, vulnerability

CAN PUBLIC INVESTMENT IN MIXED-USE, PEDESTRIAN-ORIENTED DEVELOPMENTS LEAD TO DISPLACEMENT AND DETERIORATED HEALTH FOR LOW-INCOME HOUSEHOLDS?

Abstract ID: 771

Individual Paper Submission

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Compact neighborhoods are generally viewed positively in research because they promote sustainable development and improve health. However, access to these health-promoting environments is limited to those populations that can afford them. Clearly, public investment has an impact on access to public goods, but who gets to benefit from those investments? The study's goal is to provide a broader understanding of the relationship between built environment design, housing costs, and health.

With a limited supply of affordable housing in many mixed-use, pedestrian-oriented environments, low-income renters are being displaced to more affordable, car-oriented environments. Is it possible that investment in Mixed-Use, Pedestrian-Oriented Design (MUPOD) or put differently, investment in environmental, progressive planning might actually have the unintended side-effect of benefiting those who are already better off at the expense of lower-income populations? Low-income renters, and minorities who are the least financially flexible, are also the most affected by this reorganization of investments and people (Riggs 2016).

My research contributes to the understanding of the following questions: is there a significant association between the degree of neighborhood MUPOD investment and housing costs in the Metro Vancouver context? Are low-income households forced to move when such investments occur? And if so, how does this displacement to more affordable, car-oriented neighborhoods impact their health?

High housing prices, social justice issues, limited boundaries for expansion, combined with mixed-use, pedestrian-oriented policies and inner-city investments, make Vancouver, BC an ideal case study to explore the proposed research questions. Median home and rent prices have increased significantly in nearly all of the largest metropolitan areas in North America over the past two decades. Vancouver is now known as the most difficult city in Canada (and one of the worst worldwide) for young adults to make a home.

Vancouver is also known for its inner-city, mixed-use, pedestrian-oriented urban design. Land-use policies created in the 1970s to protect Metro Vancouver's natural surroundings and agricultural land successfully managed to intensify development in existing neighborhoods and limit sprawl (Quastel, Moos, and Lynch 2012). Vancouver changed dramatically from being one of the leading North American metropolitans dominated by single-family houses, to one with the least of this type. This change, however, still leaves many of the metropolitan's neighborhoods un-densified, typically dominated by single-family houses.

My study uses housing and health data collected at the household level to explore neighborhood trends related to investment in mixed-use, pedestrian-oriented infrastructure. Cross-sectional data for this research is obtained from My Health My Community survey, Walk Score™, and BC Assessment Authority for a 2013/4 timeframe. Walk and Transit Scores are used to create a MUPOD index (N=106). MUPOD is then compared to other variables of interest using different estimation models to test for relationships between variables.

Findings from my research demonstrate that there is a mismatch between investment in mixed-use, pedestrian-oriented infrastructure and the health and housing opportunities for low income households. The research shows that planning is needed to address these inequities.

Investment in MUPOD infrastructure might exacerbate social inequality (Moos et al. 2018). By providing data-driven insights, the study's results support housing affordability policies such that lower income populations are not negatively impacted when affluent communities benefit from public investment in infrastructure.

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Key Words: urban design, housing affordability, displacement, health

ASSESSMENT OF GOVERNMENT INSTITUTIONS IN DELIVERY OF LAND AND HOUSING FOR INHABITANTS OF INFORMAL SETTLEMENTS, LAGOS, NIGERIA
Abstract ID: 803
Individual Paper Submission

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The increase in population and human activities are escalating the demand on the limited land for settlements as experienced in Lagos, Nigeria. Through the pressure being mounted by the demand for land, it is a common phenomenon to see most undeveloped land being taken over informally by the immigrants who are mostly poor in order to satisfy their urban land needs and housing. As a result of this, many unauthorized residential, commercial and industrial developments are prominent within and at the periphery of most cities in the State. However, it is the responsibility of the government institutions involved in housing issues to make sure that lands and housing units are allocated effectively without any constrained access to any social groups. Thus, equity and fairness have been lost in service delivery of lands, housing resources and housing units by the government institutions when granting access through eligibility and criteria required from the low income groups.

For this study, the primary objective was to assess the effectiveness of government institutions' intervention in service delivery of land and housing units for the inhabitants of informal settlements in Lagos State with a view to achieving equity and justice between low income groups and the high income groups in a sustainable manner. Using a multi-stage sampling technique, the researchers employed both primary and secondary data. Five local governments with 23 informal settlements at the centre of the city were randomly selected. Three (3) set of questionnaires were used; one was directed to Planning institutions, one to Lagos State Urban Renewal Agency and other to residents in the informal areas. A total of 230 questionnaires were randomly distributed within the 23 informal areas selected. Other method engaged included taking of photographs. Data were analysed using descriptive statistics and inferential statistics at $p < 0.05$.

Findings revealed that the inhabitants were unable to meet up with the requirements of development permit and approval, felt neglected, lacked access to basic amenities, lands, housing resources and units. Government institutions noted that efforts were made but failed to meet the needs of the poor due to lack of capacity, failure to fund and steer upgrading, lack of coordination between the various stakeholders of development control, and lack of implementation of planning policies and regulations. Other findings also included less attention or total exclusion/marginalization of the disadvantaged groups in the programmes or projects of sustainable development goals. It is been argued that the activities of government institutions constraint access to land, housing units and resources. The study recommended that there should be adequate personnel, guided and effective enforcement of policies, and review of the activities of the institutions.

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Key Words: Government institutions, Low -income groups, land, Housing units, Informal settlements

COUNTERING DEMOBILIZATION FROM HOUSING INSTABILITY THROUGH COMMUNITY CENTERED DATA

Abstract ID: 817
Individual Paper Submission

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Richmond, Virginia has one of the highest eviction rates in the country, demonstrating the widespread problem of housing instability. In neighborhoods that are majority white, eviction rates are below 5%, while African American and Latinx communities have rates that, in some cases exceed 20% or even 30%, threatening the stability of not just individual families, but entire communities. The importance of eviction is that it is more than the individual moment when a family receives a notice, loses in court, or is removed from a home. Instead, eviction is an indicator, result, and a cause of larger structural problems within the region, specifically, historic patterns of racial discrimination in the housing market and race-based dispossession of housing and community in Urban Renewal, redevelopment and highway projects throughout the 20th century. These patterns have resulted in a population with little access to property and political power.

Housing instability has greater implications for civic engagement and democracy. While research has argued that community engagement originates from homeownership, newer research argues that this is due to the stability and control conferred through homeownership, rather than ownership itself (Lindblad and Quercia 2015). Because households that have been displaced or expect to be displaced have to overcome the concurrent challenges of finding and keeping housing, accessing jobs, catching up in school and maintaining mental and physical health, they are unable keep up with voter registration (Squire et al 1987) much less engage in community organizations, local advocacy or political organizing. Thus, housing unstable households, regardless of tenure, are often unable to collectively advocate for changes in their buildings, neighborhoods or cities.

The consequences of "serial forced displacement" (Fullilove and Wallace, 2011)—the recurring patterns of involuntary movement from urban neighborhoods that concerted public and private action produce— are myriad, affecting individuals, families, and groups. Racial segregation frequently precedes displacement which then produces new segregation. These processes are as much as a threat to health and well-being as they are a potent political tool, historically wielded to displace Black people and people of color from positions from where they could exercise political power and build political capacity. Most obviously, physical displacement from home and community can strain and sever relationships that sustain organizing. Beyond the difficulty distance creates, having a sense of place is important for identity, claims-making, and for challenging the conditions that produce urban inequality (Good, 2017; Martin, 2007). We therefore understand eviction to be, at its root, about the reproduction of power and inequality as it is about housing needs.

This paper picks up in this space in Richmond and seeks to investigate the spaces for engagement that addresses the impacts of serial displacement. Using Richmond – and the work of the RVA Eviction Lab - as a case, we investigate the dual challenges of generational upheaval and a housing governance structure

focused on social service provision, rather than power and engagement. Specifically, we look at the responses to eviction, broadly categorized into legal assistance, emergency financial assistance, policy and organizing to understand what role academics and community-based practitioners can play in equalizing access to information, engaging marginalized communities and using data, broadly defined, to change power in communities of color.

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Key Words: Eviction, Power, Inequality, Housing Stability

COMMUNITY RESPONSE TO DEVELOPER-, PLANNER- AND DESIGNER-LED HOUSING PRODUCTION IN NEIGHBORHOODS EXPERIENCING GENTRIFICATION: THREE CASE STUDIES FROM LOS ANGELES
Abstract ID: 834
Individual Paper Submission

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Los Angeles is experiencing an acute housing shortage. Many Angelenos, shut out of the housing market and worried about gentrification, are beginning to push back on the bottoms-up discretionary processes vocal minorities have used to deflect housing development in the past. Meeting their demand for the production of more equitable, affordable and sustainable homes are a host of top-down initiatives at both the city and state levels designed to bypass NIMBYism and weaken local control. A new state law passed in 2016 and refined in 2019, for example, allows the by-right development of accessory dwelling units and junior accessory dwelling units on single-family lots, effectively allowing triplexes in the R1 zone. Los Angeles's Transit Oriented Communities Incentive Program, first implemented in 2017, offers valuable density and more expeditious approval processes in return for the creation of affordable housing near transit, upping allowable dwelling units as much as 70%.

But as these new tools and others are developed and implemented, there is disagreement among those who work to provide housing, namely, developers, planners and architects, on the best strategies to replace or reform the housing regulations that limited past supply. Developers point to the need to streamline land use regulation and reduce lengthy, multi-step approval processes that add time and cost. Planners cite the defacto prohibition of "missing middle" housing types and the comparatively small percentage of land zoned for multi-family. And designers identify restrictive zoning and building code parameters that hinder the development of new housing models. But which approach to reform is the most impactful on the ground, in neighborhoods where professionals are trying to build new housing? Will addressing process, prohibition or parameters work best to shift more citizens from NIMBYs to YIMBYs?

To better understand both the reception and perception of such housing initiatives, this paper examines community responses to developer-, planner- and designer-led housing production in three Los Angeles neighborhoods currently experiencing gentrification and resistance. In Boyle Heights, The Fifteen Group, a Miami based real estate development company, is poised to redevelop Wyvernwood Garden

Apartments, the first large scale garden apartment project built in Los Angeles, with quadruple the housing units and right of return for existing tenants after an earlier effort to redevelop failed to gain community support in 2011. In Silverlake, densification via the city's Small Lot Subdivision Ordinance, developed by the LA City Planning Department in 2005, continues to replace single family homes built on multi-family zoned lots as well as small scale rent controlled housing units with market rate for sale housing out of sync with past demographics and neighborhood character. And in Elysian Valley alongside the Los Angeles River (also known as Frogtown), the design non-profit LA Mas is working with LA County to design, approve, fund and build accessory dwelling units to house the formerly homeless who previously made their home on the river's banks. Is housing production led by one discipline rather than another more easily accepted or embraced by communities? How are communities responding to housing production in an era of decreasing local control?

A qualitative, inter-disciplinary case study approach is used to study the scope and impact of these initiatives on their communities, from the perspectives of real estate development, urban planning and design, including semi-structured interviews of stakeholders, compilation of in-depth case histories via primary and secondary source materials and observation and analysis of the built environment and its changes over time. It is hypothesized that just as these disciplinary silos make it difficult to produce housing, they also make it difficult for citizens, both longtimers and newcomers alike, to debate and embrace equitable neighborhood change.

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Key Words: Housing Production, Gentrification, Design, Real Estate Development, Planning

BRINGING FAMILY HOME: EFFECTS OF HUD RENT ASSISTANCE ON FAMILY FUNCTIONING, STRESS, AND MENTAL HEALTH
Abstract ID: 866
Individual Paper Submission

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Home environments are widely viewed as the foundation of family life. To date, however, little research has explored the extent to which the Department of Housing and Urban Development's (HUDs) rent assistance programs reduce stress within the family and support healthy family functioning – defined as "interactions and relationships within the family, particularly levels of conflict and cohesion, adaptability, organization, and quality of communication" (Lewandowski et al., 2010, p. 1027). This topic deserves attention because stress and family functioning are important predictors of health and well-being (Franks, Campbell, & Shields, 1992; Kelly, Hertzman, & Daniels, 1997). Thus, testing whether HUD rent assistance programs influence these outcomes can aid ongoing policy efforts to improve the lifelong health and well-being of low-income families.

The purpose of this paper, therefore, is to test whether the receipt of HUD rent assistance reduces stress within the family, thereby promoting healthy family functioning and positive mental health outcomes. We address this research aim via two stages of analysis. First, we test how the receipt of HUD rent assistance influences levels of stress and family functioning dynamics – such as levels warmth, conflict, and violence – among family members. Second, we test whether stress and family functioning variables moderate lifelong mental health outcomes.

To complete these two stages of analysis, we utilize a novel dataset that combines HUD administrative data with National Study of Longitudinal Adolescent to Adult Health (Add Health) data. These data provide us with a sample (N=583) of adolescents who resided in HUD-assisted housing between the ages of 12 and 19 and data on their health and well-being in early adulthood (age 24 -32) and adulthood (age 34-43). These data also allow us to construct a matched comparison group of adolescents who are demographically similar but did not reside in HUD-assisted housing at any point during their lives. We measure family functioning through self-reported data points, such as self-reported rates of interpersonal conflict and violence among family members. We measure stress through biomarker data, such as blood pressure and cortisol levels. We measure mental health outcomes using the Center for Epidemiologic Studies Depression Scale (CESD-20) and self-reported diagnoses of posttraumatic stress disorder (PTSD) and anxiety.

We utilize two causal inference strategies to tease out the treatment effects of HUD rent assistance on these outcomes. First, we use Coarsened Exact Matching (CEM) to construct a comparison group of low-income Add Health respondents that have never resided in HUD-assisted housing. Second, we employ difference-in-difference regression modeling to estimate whether HUD rent assistance explains differences in outcomes between our treatment and comparison groups.

This analysis will make several important contributions to the current literature. First, we provide one of the first panel studies of how HUD rent assistance influences lifelong health, thereby building upon previous studies that have relied on cross-sectional data (Slopen et al. 2018). Second, we provide an "under-the-skin" perspective on how HUD rent assistance influences lifelong health, as we have access to a number of biomarker measures of stress. Third, we directly test whether HUD rent assistance reduces stress and improves family functioning. This contribution is important because previous studies suggest that HUD rent assistance may improve health by reducing stress and supporting family functioning, but no studies have directly tested this hypothesis to date (Leventhal & Newman; 2010).

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Key Words: Health, rent assistance, stress, families, children

UP IN THE AIR: PRECARIOUS HEALTH CONDITIONS AND COMMUNITY ENGAGEMENT OF HIGH-RISE RESIDENTS IN TORONTO
Abstract ID: 876
Individual Paper Submission

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As a growing proportion of the world's population moves into high-density urban centres, cities face mounting challenges of creating adequate housing conditions to accommodate these flows. In such circumstances—as is the case in Toronto, Canada—polarization within cities can begin to take shape in the form of disappearing middle-income neighbourhoods, a small number of wealthy neighbourhoods, and increasing numbers of disadvantaged neighbourhoods (Hulchanski, 2010). Those facing pressing socio-economic conditions are becoming increasingly concentrated within the latter communities, captive within the high-rise towers that feature in the metropolitan skyline (United Way of Greater Toronto, 2011).

Research on such living conditions point to a need for additional investigation on the extent of their impacts on residents' physical and mental health and social well-being (Kearns et al., 2012) and a municipal commitment to the adoption of more robust policies to relieve these pressures (Krieger & Higgins, 2002; Lehrer & Wieditz, 2009). Using the socio-economic indicators of individuals and families living in high-rise residential buildings collected by the United Way of Greater Toronto, a primary objective of this research project was to identify how these factors correlate with perceived physical and mental health conditions. Further, we evaluate the extent to which the socio-economic circumstances of residents in these buildings affect perceptions of the security of their living arrangements (e.g., as it relates to crime, safety, and privacy), as well as how their conditions impact their attitudes toward engaging in activities that promote social cohesion and neighbourhood collective action. In light of our findings indicating that housing environment conditions complicate the role of socio-economic factors with respect to health outcomes and social cohesion for these residents of high-rise buildings in the Toronto area, we offer policy recommendations for the consideration of municipalities.

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Key Words: Housing, High rise buildings, Physical and mental health, Community engagement

EQUITIES IN HEALTHY LIVING: IMPACTS OF NEIGHBORHOOD WALKABILITY ON HEALTHY LIFESTYLE AND COST OF LIVING AMONG AFFORDABLE HOUSING RESIDENTS
Abstract ID: 878
Individual Paper Submission

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Background: Housing and neighborhood environments are crucial for maintaining quality of life among low-income populations, including those living in affordable housing. Compared to their affluent counterparts, low-income populations tend to bear higher risks for lifestyle-related chronic conditions (e.g. obesity), and depend more on community resources for their daily activities. Mixed-use and walkable neighborhoods are being increasingly promoted for their health and sustainability benefits (U.S. Department of Health and Human Services, 2015), but have been criticized for not being affordable and accessible to low-income populations (Garde, 2004; Seasons, 2014).

Aims: This research examines affordable housing in the city of Austin, Texas to examine (1) income, racial/ethnic, and environmental disparities associated with their locations; and (2) the impacts of neighborhood walkability on affordable housing residents' physical activity, health, and cost of living.

Methods

For Aim 1, a total of 566 affordable housing properties (925,439 housing units) in Austin were geocoded. Two binary logistic regression models were conducted to predict the likelihood for a particular census block group to have (1) exclusively affordable properties (i.e., all units being affordable), and (2) mixed-income properties (i.e., with both affordable and market rate units), respectively, using its sociodemographic and physical environmental characteristics.

For Aim 2, we surveyed affordable housing residents for their physical activity, health, and cost of living, as well as relevant personal, social, and physical environmental factors. These residents are served by the same housing provider (one of the largest in Austin), which helps to reduce the impact from other confounding factors. Objective housing and neighborhood environmental features will be assessed using field audits and GIS analysis. Preliminary analyses included bivariate analyses, ANOVA for mean differences across groups living in low-, medium-, and high-walkability neighborhoods, and linear regressions predicting the outcomes using three blocks of variables (sociodemographic, housing type, and neighborhood walkability).

Findings

For Aim 1, two models showed interesting differences. Census block groups with greater percentage of low-income households or land-use mix were more likely to have presence of mixed-income affordable housing. In contrast, those with greater street density or land-use mix, lower ratios of non-Hispanic whites or high-income households, or lower population density are more likely to have presence of exclusively affordable housing. These findings indicated income-related disparities in locations for both types of affordable housing, and ethnicity-related disparities for locations of exclusively affordable housing. On the other hand, locations of affordable housing do seem to have overall advantages in neighborhood walkability (based on measures of land-use mix or street density), with the exception of disadvantage in relation to population density for exclusively affordable housing. This may be related to relevant policy initiatives in the city. Further analyses will also include safety measures to explore this additional layer of environmental disparities.

For Aim 2, we have collected 161 survey responses from 11 housing properties so far. The respondents are 73% female, 46% Hispanic, and very low income (62% with household income <$30,000). Bivariate analyses showed that neighborhood walkability was positively associated with transportation walking and transit use. ANOVA showed that residents in high-walkability neighborhoods walked more for transportation or recreation in the neighborhood than those in low-walkability neighborhoods. Linear regressions showed higher walkability to be associated with less driving, but not with walking, physical activity, health and cost of living. Further analysis will use mixed effects models to account for the hierarchical structure of the data, and include additional survey data (~300 in total) and GIS and field audit data.

Conclusions: Findings from this study can inform future design and planning of affordable housing and

relevant polices, to help address health and environmental inequities for this vulnerable population.

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Key Words: Affordable housing, Equity, Walkable neighborhood, Physical activity and health, Cost of living

THE EFFECT OF FIRST-HAND HOMEOWNERSHIP EXPERIENCE ON TENURE CHOICE; ARE RENTERS WITH OWNING EXPERIENCE MORE LIKELY TO BE OWNERS?
Abstract ID: 886
Individual Paper Submission

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Homeowners often go back to renters leaving behind the various benefits of homeownership. The most reason why many people have lost their homeownership is foreclosure during and after the Great Recession. On the other hand, some of those may become renters because of non-economic issues such as shifts in working or family issues. For example, divorce is likely to generate at least one renter. Moving the workplace is also one of the forces that returns the owner to the renter. But are renters who experience ownership likely to become owners again? Does the effect of homeownership on tenure choice differ depending on why they lost homeownership? While indirect experience through parental homeownership is considered to have a positive effect on future homeownership, the effect of first-hand homeownership experience on the tenure choice remains underexplored. This study supplements logistic regression models of tenure choice using Panel Study of Income Dynamics (PSID) data for the last 10 years to help unpack the mechanisms driving the links between homeownership experience of renters and tenure choice. Samples are limited to householders under 45 years old to clarify the classification of reasons they give up homeownership. Estimation models are divided into four types depending on the reasons owners became the renters.; (1) Economic issue – foreclosure or unemployment; (2) Family Issue – divorce; (3) Job turnover; (4) Low satisfaction – in terms of education or neighborhood. It provides insights into the homeownership experience of renters-tenure choice relationship, and explores how that relationship varies systematically with household and market characteristics. Preliminary findings suggest that households that become renters because of economic hardship or low satisfaction are less likely to become owners again. Households that become renters due to job turnover are more likely to regain ownership within a few year after the move. Families who have been divorced have different effects depending on the presence of child and who takes custody.

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THE EFFECTS OF ENVIRONMENTAL HAZARD ON HOME PRICE APPRECIATION
Abstract ID: 930
Individual Paper Submission

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Environmental justice research seeks to understand how race and income influence the distribution of environmental hazards. These investigations repeatedly show that low-income communities of color are disproportionately burdened by pollution and noxious facilities (Mohai, Pellow, & Roberts, 2009) and minority move-in to contaminated neighborhoods is not driving these spatial patterns (Pastor, Sadd, & Hipp, 2001). With these well-documented spatial patterns there remains unanswered questions on the potential impacts environmental injustice may pose to housing markets which both reflect and drive the reproduction of inequality by race and income. Environmental hazards, among many other negative outcomes for health and human flourishing, can alter home values and wealth creation intergenerationally and across different groups. Neighborhood environmental hazards can lower home prices in multiple ways because they pose a nuisance. These nuisances can also influence homeowners' perceptions about the resale value of their homes, and thus discourage their on-going investments in home maintenance. In so doing, homeowners' decisions can compound the effects of the hazards on home prices. This paper analyzes these questions in residential neighborhoods across Los Angeles County.

This paper builds on three existing strands of research investigating: housing wealth and the housing wealth gap; hedonic impacts of amenities and disamenities on housing price levels; and the unjust distributions of environmental harm across poorer, minority neighborhoods. I investigate the relative appreciation rates between houses in census blocks with varying environmental contamination. Through repeat sales, I track how house prices in areas of differential environmental toxicity change over time, controlling for other house type structural characteristics. Home value appreciation in this study does differ statistically between neighborhoods with and without nearby environmental hazards. I find evidence that for homes in neighborhoods with intense environmental burdens, house prices appreciate one-percent per-year slower than homes with average and lower than average levels of environmental contamination. For homeowners in the most toxic areas, places which have long been identified as neighborhoods of environmental justice concern, the environmental effects on home price appreciation rates draw an additional red line around neighborhoods that have historically been subject to discrimination.

These results are based on eleven years of data from Los Angeles County, providing robust, large-scale evidence of impacts on residential property markets associated with environmental hazards. To measure environmental burdens, I rely on the U.S. Environmental Protection Agency's (EPA's) Risk-Screening Environmental Indicators (RSEI) data. RSEI data are the only nationwide environmental database that has been standardized across years for both polluters and pollutants. RSEI also relies on small geographic grid cell units and information on the toxicity and dispersion of chemical releases — providing more precise estimates of individual exposures to environmental harm (Ash and Fetter, 2004). Finally, this study improves on previous hedonic estimation studies that were aimed at understanding people's willingness to pay to avoid environmental disamenities (Boyle and Kiel, 2001). With the repeat sales approach methodology (Bailey, Muth, & Nourse, 1963) employed in this paper, I can instead estimate how the presence of environmental hazard impacts the appreciation rates of individual hazards by comparing properties to themselves over time. Taken together, my data and methodological approach provide stronger evidence of the long-term effects of concentrated environmental harm on real estate markets compared to previous investigations.

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Key Words: environmental justice, housing, repeat sales, environmental hazards

COMMUNITY ASSESSMENTS IN TRANSIT SHEDS OF MULTI-FAMILY SUBSIDIZED HOUSING UNITS IN THE CITY OF HOUSTON
Abstract ID: 948
Individual Paper Submission

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The city of Houston has huge urban footprints with rapid population growth in the city and beyond its city limits. Houston has been struggling with accommodating growing vulnerable populations in its housing market and expanding efficient public transit service. Nonetheless, the lack of convenient transit service in the city has obstructed the equal accessibility of low-income families who have limited personal vehicles. Especially, many multi-family project-based public housing tenants have an impediment to access to a numerous number of places as the construction of public rental units is geographically limited without the connection with public transit.

Few studies have assessed the opportunity of the public housing tenants in relation to the transit system. This study focuses on renters in the multi-family subsidized housing and the tenants' opportunities within distances that transit service provides. In most cases, multi-family subsidized renters have limited car ownership, and the public transit system is a critical method for Houston's affordable housing tenants to accomplish daily travel needs, such as jobs, education, and grocery shopping, to name a few.

Some of the project-based affordable housing programs that subsidize low-income populations in multi-family type housing units have not been broadly assessed by previous housing scholars: Section 8 Project-Based Assistance, Section 202 Supportive Housing for the Elderly, and Section 811 Supportive Housing for Persons with Disabilities. In this study, we focus on the tenants in these multi-family subsidized housing units who are in general very low-income families and also underserved.

With transit travel time, we evaluate neighborhood characteristics and demographic characteristics, such as job opportunity index, labor market engagement index, school proficiency index, environmental health hazard index, affordability factors, and other sociodemographic characteristics. The transit sheds are generated based on the General Transit Feed Specification (GTFS), which provides information regarding the actual transit routes, stops, and schedule. The sheds are set up using the Houston METRO's public transit system, such as light rails and local buses within 30- and 60-minute transit thresholds from each public housing building.

We estimate current opportunities given to low-income tenants in the public housing units. We provide policy implications to attempt to achieve social equity by drawing housing policymakers' attention to public housing residents' locational benefit when the connection with the transportation system is taken into consideration. We further suggest recommendations for improved quality of publicly assisted housing tenants in the sprawling city setting.

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Key Words: Multi-family subsidized properties, Opportunity, Neighborhood characteristics, Transit sheds

HOUSING SUBMARKETS AND THE EFFECTS OF NEW CONSTRUCTION ON EXISTING RENTS
Abstract ID: 957
Individual Paper Submission

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In the past 20 years, after decades of disinvestment and decline, central cities have seen a reversal of fortune and are experiencing rapid growth, particularly in the urban core (Couture, 2019). Many of these same places are now struggling with both housing unaffordability and housing shortages. These housing challenges have produced vigorous debate amongst policy makers, scholars, and activists about the role that new market-rate apartments play in alleviating housing affordably issues. Research has shown that new market-rate construction results in more affordable housing in the long-run, but much less is known about the neighborhood effects of new market-rate housing in the short-run (Been et al., 2019).

Emerging research on this topic has shown mixed results (Asquith et al. 2019; Li, 2019; Singh, 2020). Li (2019) and Asquith et al. (2019) find evidence that new market-rate construction lowers nearby rents, while Singh (2020) finds evidence that new construction results in slightly higher rents nearby. We contribute to this literature by explicitly incorporating housing submarket theory into our model (Galster & Rothenberg, 1991). We hypothesize that since housing units in a similar geographic area can vary significantly in type and quality that the effects of new market-rate housing could affect housing in heterogeneous ways based on the quality of existing housing.

Our work uses a novel dataset of building-level rents in Minneapolis, MN from 2000-2018, and a difference-in-difference study design to estimate how the construction of large market-rate apartment buildings effects rents in nearby units. We find little evidence that new construction affects rent in the aggregate. These null results, however, mask meaningful, heterogeneous treatment effects in different segments of the housing quality distribution. We estimate that lower quality housing close to new construction had 6.7 percent higher rents compared to similar buildings farther away from new construction. New construction had the opposite effect on higher-quality housing; rents were 1.7 percent lower close to new construction than in nearby buildings, but we cannot rule out a null effect. Effect sizes in all quality markets were stronger closer to new construction, and the effects persisted for at least two years after the new construction is completed.

This study reiterates the importance of understanding housing as a collection of submarkets rather than a

singular market. Our findings are important for planners and policymakers who seek to balance growth and protecting existing lower-income communities.

Citations

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Key Words: Housing Supply, Housing submarkets, Gentrification, Neighborhood effects

TRANSIT-ORIENTED DEVELOPMENT AND ITS LONG-TERM IMPACT ON LOCATION AFFORDABILITY: LESSONS FROM LOS ANGELES
Abstract ID: 965
Individual Paper Submission

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Location affordability, which integrates housing and transportation affordability, is critical to internalize the housing and transportation trade-off made by households and comprehend the real meaning of affordability for various income populations, especially for low-income households (Center for Transit-Oriented Development, 2009; Renne et al., 2016). There is a growing trend nowadays of combining transit-oriented development (TOD), with affordable housing by planners and policymakers to increase housing affordability while providing transit proximity (Boarnet et al., 2017). This study will contribute to a larger, emerging area of research on location affordability. On the one hand, the existing literature reveals a heated debate among housing affordability and social equity activists in response to the higher costs of housing in TOD and the resulting gentrification and displacement. On the other hand, transit-oriented neighborhoods generate lower vehicle miles traveled and more walk and transit trips (Ewing & Cervero, 2010), and thus reduce household transportation expenditures. The contradictory impacts of TOD on transportation and housing costs need to be integrated and analyzed as a whole. Given this, the study examines (1) how TOD influences the combined share of housing and transportation costs for households over time and (2) what TOD design characteristics such as density and connectivity contributes to increasing location affordability.

This study focused on analyses of two relatively new-established light rail transit corridors – Los Angeles Metro Exposition Line and Los Angeles Metro Gold Line – to explore the changing housing and transportation cost for residents living within a half-mile from 31 targeted rail stations by Census block group. The study identified four types of factors influencing location affordability from the literature, which are neighborhood characteristics, the local housing market, transit accessibility, and urban design. It first explored how the aggregated location affordability of these selected census block groups change across different phases of TOD, including the "planning phase," the "construction phase," and the "permanent phase." Housing and transportation cost for each census block group in different TOD phases were calculated based on U.S. Census data, Location Affordability Index Model created by U.S. Department of Housing & Urban Development, and the Housing + Transportation (H+T) Index from the Center for Neighborhood Technology. The results from the comparison of means tests indicate that the average location affordability stayed relatively constant when rail stations were planned and constructed,

but it decreased after their opening. Households in census block groups with a higher proportion of low-income minority populations located near the downtown area experienced the most significant increase in their combined housing and transportation costs.

Further, the study explored the impact of urban design features of TOD in the permanent phase on location affordability, using a multivariate regression analysis. By controlling variables measuring neighborhood characteristics, the local housing market and transit accessibility, the study examined the association between location affordability and urban design features of TOD such as scale and density, public spaces for human use, variety and complexity, pedestrian and cyclist orientation, and vehicular movement and parking. The results indicate that mixed-use and pedestrian-oriented design promote location affordability, while increasing household density contributes to higher location affordability only within a certain threshold.

Overall, the study emphasizes the necessity of early intervention from the local level to prevent gentrification and displacement of low-income minority households and the prospect of building mixed-income transit-adjacent communities which are dense, mixed-use and pedestrian-friendly.

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Key Words: Transit-Oriented Development, Location Affordability, Urban Design, Los Angeles

ACHIEVING THE GOAL OF PERMANENT AFFORDABLE HOUSING: THE POTENTIAL OF COMMUNITY LAND TRUST AND LAND BANK COLLABORATION
Abstract ID: 973
Individual Paper Submission

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Planners must remain committed to utopian ideals and values, should there be the opportunity to achieve social justice aims by promoting equitable development and power among the grassroots in plan and policy making. The community land trust (CLT) model advances these aims via democratizing land use and stewardship of public investment for permanent affordable housing (Davis, 2010; Lowe & Thaden, 2016; Thaden & Pickett, 2019). Few urban planners, however, are engaged or familiar with how CLTs use innovative tools for, rather than returning properties to productive usage subject to private ownership, placing land under social control and fostering housing security. One such tool gaining in popularity is the land bank (Alexander, 2015; Keating, 2013).

This research employs a multiple explanatory case-study approach that illuminates how CLT collaboration with land banks can increase scalability for social control of land and permanent affordable housing. We find that the vision of many local and regional policy makers for increasing the permanent

affordable housing stock has become bolder. This view is driven by varying political economic responses to more recent neighborhood changes resulting from increasing housing costs, gentrification, and the demographics of population changes. Political economy holds significant sway over CLT-land bank collaboration. The types of powers land banks have through enabling legislation matters. CLTs need land use policies, resources and supportive networks that enhance their capacity to expand community-controlled stewardship and preserve neighborhoods. Planners should be more involved in and voluble about CLT-land bank collaboration because the net positive pipeline potential helps resolve tension between capital and community while enhancing housing security, community control, and a broader social justice movement.

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Key Words: Community Land Trust, Permanent affordable housing, Land Bank , Scale, Collaboration

STUDYING THE PAST TO UNDERSTAND THE PRESENT: REDLINING, WHITE FLIGHT, AND QUALITY OF LIFE IN MILWAUKEE, WI
Abstract ID: 988
Individual Paper Submission

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Across the social sciences, a significant body of literature has linked the built and natural environments in communities to public health outcomes. A common observation in this literature is the correlation between low-SES households, a lack access to quality of life amenities such green space or food retailers, and poor public health outcomes. Historically, the analyses generating these findings have been 'flat' in nature, merely noting the current distribution of resources, and the resulting outcome. In recent years, a growing body of literature has made the explicit connection between the current distribution of urban amenities and historical processes of segregation, such as redlining, in an effort to . However, to date, limited scholarship has sought to quantify the correlation between historical segregation and current inequalities in access to quality of life amenities.

In this paper, we investigate historical and current economic and spatial patterns of housing segregation and disinvestment in Milwaukee, WI, and its association with measures of quality of life post-Great Recession, specifically access to green space and retailers such as food outlets. Following McClure et al (2019), we use a two-step modeling technique to analyze the relationship between neighborhood demographics and quality of life metrics, utilizing past segregation as a measure to quantify confounding bias introduced when ignoring past housing inequalities. Further, we operationalize our quality of life metrics in two ways: first as straight counts of retailers, parks, and other positive amenities within neighborhood units; and second, as the marginal price of an additional amenity within a neighborhood unit, as seen in Warsaw and Phaneuf (2019). In doing so, we provide a robust consideration of the connection between historical segregation and both the physical access to quality of life amenities

within the city, and the 'functional' access as defined by the feasibility of local community members to live in homes with said physical access to these amenities.

To quantify historical segregation, we employ HOLC shapefiles for Milwaukee County digitized by the Mapping Inequality project (Nelson et al 2020), in conjunction with shapefiles characterizing the patterns of blockbusting and white flight within the county during the 1970's and 1980's. We utilize publicly available parcel data and home purchase records provided by the City of Milwaukee to identify the location of local features such as parks, as well as determine home values across the city. Census data is used to identify demographics at the neighborhood level, and business records detailing the location of relevant retailers during the study period are provided by ReferenceUSA.

The findings of this work will provide scholars with an empirical basis for understanding the historical processes commonly linked to disparities in access to vital urban amenities which promote public health. In applied settings, the model developed by this paper will provide practitioners with a pluralistic view of the challenges facing underserved communities, and open opportunities for targeted investments to remedy the structural causes of inequality in urban contexts.

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Key Words: Segregation, Redlining, Food Insecurity, Public Health, Quality of Life

SEINE-SAINT-DENIS STYLE: HOW ONE *BANLIEUE*'S INSTITUTIONAL MODEL MIGHT BE THE SOLUTION TO THE GRAND PARIS HOUSING CRISIS
Abstract ID: 1008
Individual Paper Submission

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2019-2020 marked a turning point for the Grand Paris. Debates over the challenges this metropolitan governance structure faced since its inception in 2016 were still heated. Local municipal elections oriented who would sit at the Conseil Métropolitain. The initial version of the metropolitan Housing Plan was dropped, because elected officials still refused the idea of a newly imposed financial equalization and housing construction rebalancing.

Balanced housing provision was supposed to be one of the pillars of the Grand Paris metropolitan project. Fifteen years later, it is almost at a standstill, with strong imbalances between territories (Maaoui 2020), and between social and market rate housing construction trends, even when production is on the rise. Behind the rhetoric of "new urban politics" (Enright 2016), path-dependency seems to prevail.

In a metropolitan area faced with a lingering housing crisis, the short-term strategy was to continue tapping into a mix of existing tools, such as the regional SDRIF plan and the state-enacted inclusionary zoning SRU Law. Still, this temporary approach does not offer a strong enough long-term framework for metropolitan negotiations with municipalities, for instance when it comes to yearly budget allocation decisions or financial equalization.

This notwithstanding, we consider that the Grand Paris case presents us with many lessons. We developed

a series of mixed-methods research cases that go a step further than the current literature, answering Dominique Lorrain's call for a "political economy of details" for the Grand Paris (Lorrain 2018), so as to grasp how housing provision works at a finer grain. The goal is to unveil the local "micropolitics of planning" (Forester 1999) that make up the larger metropolitan project, and to explore the challenges of finding the right governance strategy in the territorial mille-feuille in which Grand Paris agents operate.

We here present lessons from the fringes based in the Seine-Saint-Denis department, in the inner-ring northeastern banlieues of Paris. This department concentrates historically disinvested municipalities, which were historically red suburb enclaves, and are still mostly comprised of lower income minority neighborhoods. Seine-Saint-Denis counts the largest portion of the region's social housing stock, but is also the target of major redevelopment projects, such as those in line with the 2024 Olympics. It operates with heavy budget constraints, and yet functions as a pioneer for the Grand Paris, with the longer expertise it has in terms of intercommunal institutional governance. In conceptualizing this case study, this paper analyzes the role played by agents in charge of housing provision in the Établissement Public Territorial Plaine Commune. This intercommunal EPT relies on a body of expertise, incentive precedents, and financial and regulatory tools that are not bound to municipal limits, in order to structure an inclusive housing market for local residents.

Findings are drawn from interviews with elected officials, housing developers, community organizers and residents, as well as field observations in key community meetings and public hearings. Our analytical framework is strongly rooted in the approach developed by Bent Flyjberg's "phronetic social science" which considers how practitioners make use of their knowledge and act towards shaping an urban future within a clear ideological framework (Flyvbjerg 1998). This paper provides thick descriptions of how housing provision compromises are negotiated in Seine-Saint-Denis, and offers a potential roadmap for the institutional future of the Grand Paris.

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Key Words: Grand Paris, Banlieues, Housing crisis, Metropolitan governance, Mixed-methods research

HOUSING ASSISTANCE PROGRAMS AND NEIGHBORHOOD CHANGE ACROSS THE GREATER TORONTO AREA
Abstract ID: 1011
Individual Paper Submission

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The largest payments people make monthly are housing expenses. Everyone needs a place to lay their head. This is most apparent in larger cities in which rising housing costs are causing many people to wonder if they will be able to afford to stay in their homes. As a result, many countries have tried to address housing affordability by providing financial assistance to those who cannot pay their monthly housing expenses on their own. One of the ways in which governments do this is by providing housing units directly to people in the form of public housing. Typically, these units are managed by a government agency. Because the government serves as the landlord, many have questioned whether or not the government should supply housing for those who cannot afford it given the province's neoliberal turn in

the 1990s (Hackworth & Moriah, 2006). This neoliberal turn is argued to be seen locally in the case of social mixing initiatives encouraged by agencies undertaking public housing restructuring across the Greater Toronto Area (GTA) (August, 2008; 2014). Within North America, the two largest government agencies that supply public housing are in New York, NY and Toronto, ON, respectively. And while there is a lot of literature on public housing in New York and other large U.S. cities, there is little research on the GTA. Given the increasingly unaffordable nature of the GTA, this study focuses on the relationships between housing assistance programs and neighborhood change. Several questions arise from this study: 1) What are the descriptive differences among housing assistance recipients across program types? 2) Does housing assistance allow tenants to stay in changing neighborhoods? 2) Are different housing assistance programs clustered in particular areas across the GTA? This study uses administrative data from the Toronto Community Housing (TCH). TCH is the largest social housing provider in Canada and the second largest in North America. TCH is wholly owned by the City of Toronto and operates in a non-profit manner. Toronto Community Housing has 2,100 buildings and 50 million square feet of residential space, which represent a $9 billion public asset. Using approximately a decade of administrative data, this study uniquely looks at the changing dynamics of households while also looking at changing neighborhood dynamics. Using a series of descriptive and spatial analyses, the study seeks to highlight the role of housing provisions in stabilizing households across an increasingly unaffordable urban area.

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Key Words: housing, welfare, neighborhoods, affordability, Toronto

LOSING YOUR HOME IS BAD FOR YOUR HEALTH: SHORT- AND MEDIUM-TERM HEALTH EFFECTS OF EVICTION ON YOUNG ADULTS
Abstract ID: 1016
Individual Paper Submission

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Until recently, the true scope of evictions in the U.S. was unknown. With the advent of new data sources, estimates suggest over 850,000 families are evicted each year (The Eviction Lab, 2018), elevating evictions to the top of the agenda in many jurisdictions. Cities such as New York City adopted right to council laws, which provide lawyers to some tenants facing eviction. More recently, San Jose, California, proposed halting evictions resulting from the COVID-19 virus. These policies are predicated on the idea that evictions have negative consequences for the families who are forced to leave their homes. Yet, the nature and duration of many consequences is relatively unknown. A developing literature suggests eviction can lead to housing instability and homelessness (Sandel et al., 2018), job loss, criminal justice system involvement, and problems in school. Another consequence of even the threat of eviction is poor health (Vásquez-Vera et al., 2017). For example, Desmond and Kimbro (2015) find mothers who were evicted were more likely to report poor health for themselves and their children, an effect that remains two years after the eviction. We build on this literature by examining the short- and medium-term effects of an eviction on the self-reported health of young adults.

We evaluate the relationship between evictions and health by using the restricted use version of the Add Health dataset, which follows 15,701 children through four survey waves, starting when they are in grades 7 through 12 through early adulthood (when they were between 25 to 34 years old). We use data from over 11,000 individuals in Waves III and IV of the survey (when respondents were aged 19 to 28

and 25 to 34, respectively), measuring whether the respondent experienced an eviction in the twelve months prior to each survey wave and their health in Wave IV. We measure health three ways: self-reported general health, the existence of two mental health disorders (anxiety and depression), and a composite of general and mental health. Using binary and multinomial logistic regression, we find evictions have both short- (twelve month) and medium-term (seven to eight years) negative impacts on health. While the negative health effects of a recent eviction are larger than the effects of an eviction years ago, both types of eviction are associated with poorer general and mental health.

Our research provides evidence that individuals who experience an eviction are more likely to report being in poor general health or experiencing mental health concerns, even seven years after an eviction. As state and local governments develop policies to reduce evictions, it is worth noting that any resulting decrease in evictions may have a positive impact on population health. Therefore, decision makers would do well to work with the public health community to develop effective anti-eviction policies.

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Key Words: Eviction, Health, Housing policy

FINANCIALIZED NEGLECT: EXAMINING SINGLE-FAMILY RENTAL CONDITION AND IMPACT OF LARGE OWNERS IN MEMPHIS, TENNESSEE
Abstract ID: 1046
Individual Paper Submission

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The decade following the sub-prime mortgage crisis has been characterized by an increase in single-family rentals across the national housing market. Communities hit the hardest by foreclosures are seeing an increase in a specific type of single-family rental financialization. The investors are often private equity or capital management firms, who control significant amounts of housing markets and sub-markets. A December 2018 Washington Post article on Cerberus Capital Management and their activity in Memphis, found that they are estimated to own close to 5,000 properties in the city-limits alone. Previous research has already shown that these ownership types evict residents at higher rates and the most common legal ownership structure, LLCs, facilitate trends of disinvestment (Raymond, 2018; Travis, 2019)

On the topic of property condition specifically, research suggests that this level of centralization and economies of scale could result in increased quality (Garboden & Newman, 2012). This is the same question at the center of this research: do institutional investors take care of their properties better than single-family rental property investors with smaller portfolios? To answer this, a rich parcel-level dataset collected from a volunteer driven windshield survey is used. The Bluff City Snapshot rated all properties on a 1-5 scale and generated a series of binary and categorical variables related to each aspect of the property. Combining this data with public tax records from the same time period as the survey, single-family rental investors are grouped into three categories based on number of properties each investor owns: institutional investor (n > 25), corporate investor (n = 10 – 24), and mom and pop (n < 10).

The impact of investor size is examined using a quantitative, multi-variate approach. A logistic regression model will assess the impact of institutional investors as opposed to smaller and more local investor types, controlling for other potential property condition impacts. The financialization of single-family rental properties is a nation-wide phenomenon and understanding the impact of different investment types will help inform neighborhood and housing planning strategies, while also informing rental housing policies at the state and local levels.

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Key Words: Housing, Disinvestment, Investors, Property Maintenance

NEW STRATEGIES FOR CHEAP RENT: MANITOBA'S SOCIAL HOUSING PROVIDERS AS HYBRID ORGANIZATIONS
Abstract ID: 1059
Individual Paper Submission

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Non-profit housing providers in Manitoba are finding new ways to subsidize low-cost housing. Moving beyond long-term funding agreements with the federal government, non-profit housing providers are using a combination of strategies, including internal subsidies, portable rent benefits, rent regulations, and reducing the depth/number of subsidies offered to continue to provide low-cost housing. The new National Housing Strategy, released in 2017, also offers funding for community housing providers, though details have not yet been released.

In this paper, I examine the strategies employed by non-profit housing providers through the lens of hybridity (Blessing, 2012; Skelcher and Smith, 2015). Neither public nor private, non-profit organizations operate in their own sphere, where Mullins and Jones (2015) note, the "competing logics of state, market and community play out continuously… with a variety of potential consequences, including continued state control alongside market mechanisms" (262). In Manitoba, non-profit organizations provide about half of the province's non-market low-cost housing. As federal and provincial housing policies change, so do the opportunities and constraints facing non-profit housing providers. As hybrid organizations, non-profits have mandates to address social goals; they also must engage with market forces, and respond to pressures from their local community.

Through interviews with non-profit housing providers, I examine how non-profit housing providers in Manitoba use their often newly-developed responsibility for rent structures. Four main strategies were identified by housing providers to continue to offer low-cost rents after long-term subsidies have expired. The first, internal subsidies, relies on having higher-income tenants who pay a higher level of rent to subsidize lower-income tenants. The second, Rent Assist, is a provincial portable rent benefit that pays housing costs up to 75 percent of median market rent; some housing providers have set rents at this level

to be accessible to tenants receiving Rent Assist. Third, provincial rent regulations shape how private-market landlords manage rents and properties with both constraints on landlords' practices and exemptions in certain situations. As previous funding agreements end, non-profit housing providers are likewise framed by Manitoba's rent regulations, and are drawing upon the exemptions to set rents that enable maximum flexibility. Finally, some housing providers are changing their rent mixes, often by reducing or eliminating the lowest cost units.

These strategies reflect varied pressures and opportunities for housing providers, as well as differing levels of philosophical and ethical willingness to change operations. Moving beyond the binary of state and market enables new perspectives on housing providers and the housing sector (Mullins and Jones, 2015). By theorizing the strategies of nonprofit housing providers within a framework of hybridity, a deeper understanding of their implications for low-cost housing provision become visible.

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Key Words: Non-profit housing, Manitoba, hybridity

THE POLITICAL ECONOMY OF HOUSING AFFORDABILITY: NEW HOUSING AS REDISTRIBUTION VS REDISTRIBUTION THROUGH NEW HOUSING
Abstract ID: 1081
Individual Paper Submission

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Depending on who is asked, the idea that building more housing can make housing more affordable is either common sense or nonsense. Skeptics say that new housing makes housing more expensive. Inclusionary zoning laws, which require market rate developers to build or finance subsidized units, are premised on this belief. This article examines these conflicting views: that new housing enhances affordability, and is thus a form of progressive redistribution, or that it undermines affordability, and is thus justification for, and vehicle of, redistribution. Using Census data and existing literature, I argue that the latter view has little empirical or theoretical basis, and that inclusionary mandates primarily serve to protect most housing capital from redistribution. I conclude that governments should move away from inclusionary zoning and toward more Georgist approaches to affordable housing finance.
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Key Words: zoning, affordable housing, land use regulation, taxation

POLARIZED PATHS: CYCLING DESIRABILITY THROUGH A REAL ESTATE PERSPECTIVE

Abstract ID: 1084
Individual Paper Submission

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Cycling is an inexpensive and environmentally friendly way to engage in physical activity via an individual's daily commute (Li & Joh, 2017). As a result, the development of cycling infrastructure is a major objective of many politicians, planners and cycling advocates, marketed for its personal, ecological and transportation benefits (Levine et al., 2018; Woodcock et al., 2014). However, a growing body of literature also suggests that cycling infrastructure plays into larger neoliberal planning goals, which has resulted in social exclusion and in extreme cases, gentrification (Ibsen & Olesen, 2018; Piatkowski & Marshall, 2015). This has sparked debates about what cycling infrastructure means for equity. Understanding the demands and perceptions of cycling across the varying geographies of an urban region helps us to interpret its impact. To do this, we have conducted a series of twenty-two interviews with Realtors and Developers, who hold privileged roles in a neighbourhood's development and identity. They simultaneously cater to existing desirability, while influencing that desirability through their own marketing tactics.

The aim of this paper is therefore to examine the perceptions of cycling desirability held by realtors and developers within a mid-sized region and assess what housing and neighbourhood factors play a role in shaping attitudes towards cycling. Our case study is the Tri-Cities of Waterloo Region in southern Ontario: Kitchener, Waterloo and Cambridge. Kitchener and Waterloo are undergoing widespread development and densification in their downtown cores, both because of their strong tech-based economies and because they are served by a new LRT system. Cambridge is also seeing development in its downtown, but is still largely understood as a suburban commuter town. Currently, Kitchener and Waterloo are testing a separated bike lane pilot in their downtown cores, motivated by larger changes ongoing within the region to each city's Cycling and Trails Master Plans. These changes contributed towards a growing polarization in density, urban form, mobility options and land use patterns between these core urban areas and suburban 'residential' neighbourhoods that constitute most of the region.

Our paper is part of a larger partnership project with local municipalities that is primarily tasked with evaluating to what extent cycling infrastructure influences residential property values. Realtors offer unique, qualitative insights into these questions, as well as the wider relationship between housing and mobility. We find that the primary factor in shaping attitudes towards cycling can be found in the somewhat fuzzy boundary between urban and suburban neighbourhoods. The high cost of building new parking downtown, changes in parking regulations and a strong demand for transportation alternatives among those looking for housing in the urban cores contributes to cycling infrastructure's growth in these parts of the cities. Urban living represents a particular lifestyle that prioritizes location and access to public and active modes of transportation, over drivability. Realtors indicate that their clients are experiencing cycling access as a valuable amenity, motivated by affordability and accessibility. On the contrary, in suburban locations, households are looking for larger properties and are either more willing to forfeit location, or have no desire to live in an urban core. These households are far less likely to consider cycling in their home buying decision, as they do not feature in their daily mobility patterns.

Overall, cycling is viewed by both Realtors and Developers as an aspect of urban development and 'revitalization' that can attract an economically vibrant class. This research has implications for considering how cycling infrastructure contributes to growing inequalities across the city; while the core urban areas have lower-than-average incomes today, they are also rapidly gentrifying, which raises important questions about who will have access to this cycling infrastructure in the future.

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Key Words: Cycling, active transportation, property value, urban form, gentrification

GENTRIFICATION AND DISPLACEMENT IN TORONTO: EXAMINING THE ROLE OF EVICTIONS
Abstract ID: 1086
Individual Paper Submission

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Forced displacement, in the form of an eviction, can lead to growing housing precarity and residential instability for low-income tenants (Desmond et al, 2015). There is a significant relationship between gentrification and evictions (Chum, 2015). However, the role that evictions play as a mechanism of gentrification-led displacement has generally been underappreciated in gentrification literature (Sims, 2016; Chum, 2015). Evictions can be a rich source of data due to its geographic and temporal dimensions, which offer researchers the opportunity to uncover whether any spatial concentrations exist over time (Sims, 2016). Significant rates and concentrations of evictions can be a good indicator of shifting housing markets and landlord behavior and intent (Sims, 2016). For example, 'renovictions' have become a well-known issue in Toronto, as landlords try to capitalize on rising housing values in a gentrifying neighbourhood by evicting tenants so that they can renovate and raise rents on the unit post-rehabilitation.

There are quantitative issues with measuring displacement given the data limitations, such as a lack of appropriate longitudinal data (Atkinson, 2000) and problems with data availability on the migration history of individual households, which are often insufficient or flawed (Easton et al, 2019). This lack of quantitative evidence to conclusively point to gentrification-induced displacement as a policy problem has enabled policy makers and planners to "pursue strategies of gentrification unchallenged by statistical evidence" of its most negative impact – the displacement of existing residents (Easton et al, 2019). To address the data limitations involved with quantifying displacement, a growing number of scholars have used evictions data as one way to circumvent the difficulties with collecting quantitative data on gentrification-induced displacement (Easton et al, 2019).

 This research explores the role of evictions in urban displacement processes and its relationship to gentrification both as an effect and potential indicator of gentrification pressures in a neighbourhood. To do so, this research looks at how and where evictions are occurring in Toronto with a particular focus on two gentrifying downtown neighbourhoods. In determining the prevalence and geographic concentrations of evictions over time and relating that to neighbourhood change, we can better understand how gentrification occurs, which can help inform more effective planning strategies to prevent and mitigate its negative impacts (e.g. displacement) for vulnerable residents. This research contributes to the emerging literature by exploring how evictions data can help address some of the limitations that currently exist with quantifying gentrification-induced displacement. Moreover, in better understanding how and why evictions occur and its connections to neighbourhood change, planners and policymakers can identify

ways to strengthen eviction prevention strategies, which will aid in the preservation of existing affordable housing.

The research examines the following questions: What are the spatial and temporal dimensions of evictions in Toronto? What are the reasons behind evictions? To address these questions, the paper empirically assesses the neighbourhood change patterns in Toronto over a 25-year period based on census data (1991-2016), using five housing and social class upgrading indicators (income, occupation and education, concentration of artists, housing values, and rents) to identify the census tracts that show signs of gentrifying. The spatio-temporal patterns of evictions in Toronto have also been mapped by using evictions data (2012-2017) from the Landlord and Tenant Board. Initial findings suggest that there are high concentrations of evictions occurring in racialized low-income communities in the central city and inner suburbs.

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Key Words: evictions, gentrification, displacement, eviction prevention

BUILT OUT CITIES? HOW CALIFORNIA CITIES RESTRICT HOUSING PRODUCTION THROUGH PROHIBITIONS AND PROCESS
Abstract ID: 1095
Individual Paper Submission

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Given high rents and prices in California, housing production is at a relative historic low. Scholarship has connected restrictive land use regulations to high prices, with limitations on new construction being the assumed mechanism. Less research has focused on which regulations are most binding and where. In this paper, we seek to disentangle the impacts of two dimensions of land use regulation—prohibitions and process—on housing production. We do so by using two new data sources: the Terner California Residential Land Use Survey Data Set, and zoning capacity estimates from the Housing Element of cities' general plans, in a model of recently-permitted housing (from 2013-2017). We find that an index of regulatory prohibitions against higher density development is strongly associated with less permitting, especially permitting of multifamily housing. An index of process is uncorrelated with permitting, though the base data for this index is not complete. There is also greater endogeneity in measures of process: places with more development are more likely to report delays and other process complexities as constraints on that development. We also test the hypothesis that land use restrictions have a greater impact on production in more expensive places. Our findings show that the interaction between available zoned capacity and housing costs is significant and consequential. Combined with the fact that most expensive places have relatively little remaining zoned capacity for new housing, our findings offer a more comprehensive explanation for the low levels of new housing production in the state.

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Key Words: Housing production, Zoning, California

ILLUMINATING THE HOUSING CRISIS: UNDERSTANDING HOW LOW-INCOME TENANTS ACT ON THEIR HOUSING ISSUES IN LOS ANGELES CITY
Abstract ID: 1099
Individual Paper Submission

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Low-income residents in the City of Los Angeles are currently struggling with steep rent increases. In addition, their lack of resources and the complexity of landlord-tenant regulations in the city have been obstacles when navigating their housing concerns, and for some, could lead to homelessness or living in intractable poverty. This study seeks to: a) understand how low-income tenants in Los Angeles perceive threats to their housing conditions, and b) explore various factors to distinguish individual protective actions they take when faced with such threats. The study will adapt the protective action decision model (PADM) as the theoretical framework for the analysis of tenants' decision-making about their housing concerns. PADM considers environmental cues, social cues, information sources, and individual characteristics as predictors of individuals' protective actions. In addition, the study considers the types of resources and strategies advocacy organizations (AOs) utilize, guided by the political mobilization theory (PMT) and political opportunity theory (POT), which will allow the study to explore factors that might play into the tenants' decision-making process when they use AOs' resources and strategies to address their housing issues. The study uses qualitative data from semi-structured interviews with tenants and AOs as well as content analysis. Results of the study will evaluate the flexibility and validity of PADM in the context of landlord-tenant relationships and provide insights into tenants' perceptions about their housing issues in the private rental sector.

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Key Words: tenant, private rental sector, housing, tenant's movement

INFORMAL SETTLEMENTS IN SOUTHERN CALIFORNIA: EXAMINING THE ROLE OF STREET-LEVEL BUREAUCRATS

Abstract ID: 1101
Individual Paper Submission

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California is experiencing an unprecedented housing affordability crisis, with over 20% of all homeless individuals in the country residing within the state (Henry et al., 2018). The state has the largest share of unsheltered homeless in the country and some of the highest poverty rates in the nation, with approximately half of the population self-reporting being financially strained due to their housing costs (Johnson and Cuellar Mejia, 2019).

The housing situation in California (and other states) cannot be addressed sufficiently without understanding the living conditions of the poor and the actions of public servants charged with implementing housing regulations. For these reasons, this research focuses on everyday interactions between street-level bureaucrats (SLBs) and residents of informal settlements (e.g., homeless encampments and colonias) to examine when and how discretion is exercised. In this instance, the difference between how SLBs enforce the written law (i.e., the law in action) and what effect this has on outcomes in these settlements in Southern California. Study sites are located in two Southern California counties, Orange and Imperial. This qualitative study will employ an ethnographic multiple case study design (Yin, 2014) that aims to make sense of the concurrent criminalization of informal housing and homelessness and the persistence of these non-conforming spaces as opposed to their eradication.

As the housing crisis worsens, more and more people end up in precarious housing arrangements. When local government responds, SLBs like police, social workers, public health workers, and code enforcement become the emergency responders to the crisis. This study looks at housing precariousness to understand if and how SLBs are engaging in informal enforcement practices and whether they regulate different types of informal housing arrangements in distinct ways based on visibility, racial and ethnic makeup, familial status of residents, and local tolerance. Finally, the study seeks to identify the factors involved in triggering enforcement action and assess the effectiveness of discretionary decision making on preserving stable housing and neighborhoods for the most vulnerable people in the community.

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Key Words: Informal Settlements, Homeless Encampments, Street-Level Bureaucracy, Informality, Informal Law Enforcement

MUCH ADO ABOUT AFFORDABILITY: NO ROOM AT THE INN FOR OPPORTUNITY?
Abstract ID: 1106
Individual Paper Submission

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Affordability presently poses, perhaps, the single most pressing issue to housing planners and policymakers. However, in the literature on affordability, these discussions often focus singularly on the relationship between housing costs and household income, vastly—and quite concerningly—ignoring, among other issues, the effects of locational attributes on affordability. Meanwhile, the geography of opportunity has garnered increasing attention in the planning and policy spheres. It closely resembles the scores of other concepts in sociology and planning that attempt to capture neighborhood composition, such as segregation, neighborhood disadvantage, concentrated poverty, and neighborhood effects—each recognizes the presence and persistence of socioeconomic disparities. However, the nuance of the geography of opportunity rests on its focus on the attributes of neighborhoods and the spatial distribution of structural characteristics—such as job accessibility, school quality, and access to public transportation—that affect opportunity for individuals (Galster & Killen, 1995; Patterson et al., 2016). The geography of opportunity serves as the foundation for the opportunity index, a measure recently published by the Department of Housing and Urban Development. The index reflects the poverty, school proficiency, jobs proximity, labor market engagement, transportation costs, transit trips, and environmental health of neighborhoods (Gourevitch et al., 2018).

Despite previous literature on the neighborhood opportunity of affordable rental housing, no literature has yet examined the relationship between neighborhood opportunity and affordable homeownership (Acevedo-Garcia et al., 2016; Heidelberg & Eckerd, 2011). This research positions affordable homeownership in the context of the structural characteristics of neighborhoods, such as job accessibility, school quality, and exposure to environmental hazards, thereby formally establishing the relationship between two interconnected concepts with significant implications for individuals' life outcomes. This research poses the question: Does neighborhood opportunity affect the type of home purchase mortgage originated? I articulate the relationship in the context of three geographies in Texas—the Austin-Round Rock MSA, McLennan County, and Cherokee County. These geographies depict a range of housing needs and each fulfills a unique category—a large metro facing severe shortages of affordable housing units, a relatively affordable mid-sized city, and a small, rural county with a declining housing stock and proportionally less funding for affordable housing compared to major cities.

Using HMDA home purchase mortgage origination data and HUD's Opportunity Index, I develop a binomial logistic regression model to estimate the effects of neighborhood opportunity on the type of mortgage (i.e., conventional or government-insured) originated in 2017 and 2018. Preliminary results for McLennan County reveal a negative association between neighborhood opportunity and the odds of receiving a government-insured mortgage. Controlling for the characteristics of the applicant and loan, a 10% increase in the opportunity index at the tract level decreases the probability of origination of government-insured mortgages by 29%.

This research bears significant policy implications—the federal government's long legacy of sacrificing opportunity for affordability in the siting of low-income households has perpetuated pre-existing socioeconomic disparities across neighborhoods. Borrowers with government-insured mortgages, who are overwhelmingly low-income and minority, remain secluded to specific neighborhoods. This research demonstrates the racialized contours of mortgage lending effectively ensure that historically underrepresented and marginalized populations do not benefit from a system designed for the white & wealthy; in essence, government-insured mortgages often hurt the very households they aim to help. The results indicate a need for mortgage finance interventions—for example, down payment assistance—that allow low-income households to seek higher loan amounts, thereby enhancing access to opportunity, or improvements to the structural characteristics of neighborhoods that reduce disparities in access to opportunity.

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Key Words: affordable homeownership, geography of opportunity, housing affordability

FAILING MALLS: OPTIMIZING OPPORTUNITIES FOR HOUSING
Abstract ID: 1107
Individual Paper Submission

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California, as most of the country, is facing a transformation in retail (Credit Suisse 2018; Cushman and Wakefield 2018). Increasing Internet shopping, especially the growth of Amazon, and the increase in same day delivery, have ushered the closing of anchor stores, such as Macy's, Sears, JC Penney's, and the increasing closure of regional shopping malls, which have sizable footprints, ranging from 40-100+ acres (ICSC 2017). This trend offers opportunities for the redevelopment of failing malls to address pressing needs in California, the need for housing, especially, affordable housing, and efficient transit provision for such redevelopments. The housing shortage has reached a crisis stage in many parts of California, especially in the Los Angeles metropolitan region, which has one of the lowest home ownership rates, and the lowest vacancy rate for rentals in the country (Harvard Joint Center for Housing Studies 2018; US Census 2017). This opportunity to redevelop failing malls into housing, mixed use developments may be foreclosed by another trend--the increasing demand for in-town warehousing space to address same day, and 1 and 2 hour deliveries. What policy instruments do local or state governments have to promote housing/mixed use, at least in some sites? What should have priority from a sustainability perspective?

Building on previous research (Blanco and Wickstrom 2018), this research project uses available databases to first identify a set of distressed shopping malls (4-6) in the four largest metropolitan areas in California as potential sites for redevelopment. From a review of the relevant literature and available data and trends, it assesses the sites identified for their potential for mixed use, housing redevelopment, and for improvements in transit access. For the case studies of the distressed malls, the research project develops, from the footprint of the sites and their land use, transit access, and other characteristics, brief redevelopment sketches to identify potential housing units, and improved transit access options. It also develops (4-6) profiles of recently owner-redeveloped malls to determine their characteristics. In addition, the study identifies strategies that local and state governments could use to promote/incentivize housing/mixed use redevelopment in promising redevelopment sites. The study concludes with a comparison of the case studies of the distressed malls housing/mixed use redevelopment schemas identified in the research to the characteristics of recently owner-redeveloped malls along a set of sustainability criteria.

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Key Words: shopping malls, redevelopment, housing, mixed use

IMPACT OF STATE-PREEMPTIONS ON INCLUSIONARY HOUSING POLICIES: EXPERIENCES FROM PORTLAND, AUSTIN, AND NASHVILLE
Abstract ID: 1118
Individual Paper Submission

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Cities with tight housing markets are acutely feeling the impact of decreasing federal grants as housing becomes unaffordable for low-income residents.[1] In response, many cities in the United States are taking progressive local action in the form of inclusionary housing (IH) policies. In its basic form, a city IH policy requires market housing developers to designate a certain percentage of units as affordable housing to obtain planning permission approvals.[2] However, city-level progressive initiatives like IH often encounter resistance at the state level, in the form of state-preemptions, in the states that politically favor free-market policies.[3] My paper focuses on three progressive cities – Austin, Nashville, and Portland - to investigate how these cities have battled state preemptions in implementing IH policies. In these three cities, I seek answers to the following questions: What prompted the city's interest in IH? How did the state preemptions alter the city's IH efforts? What strategies did the cities adopt in response to the state preemptions? Among communities with varying degrees of IH policy success, what factors explain these different results?

I used extensive document analysis of government policies, legislative hearings, memos, and press releases in addition to 51 semi-structured interviews, and site visits. I conducted interviews with policymakers, civic sector, developers, housing associations, and officials at the state and local levels to map critical junctures in policymaking. These interviews helped me understand the rhetoric and intent behind their acceptance/refusal of IH policies and in providing thick descriptions behind policy decisions and implementation barriers. I compiled the number of IH units produced and mapped their spatial distribution in the cities using GIS and conducted site-visits to key project locations to help verify the success/failure of IH policy implementation in quantitative terms.

My findings reveal that there are varying degrees of opposition to IH policies, even in states with preemptions against IH policy. Portland fought the state's preemption against mandatory IH policies since 1999. Oregon finally lifted the ban through legislation in 2015 but also limited the scope of cities' IH policy. The Tennessee legislature squashed Nashville's early IH policy attempts in 2016 by two successive preemptions that severely restricted the city's capacity to use planning incentives to encourage private developers to build IH units. Austin, on the other hand, uses planning incentives to create IH units since the Texas municipal code restricts mandatory IH policies with certain provisions for partial implementation.[4] In spite of these state restrictions, there are avenues that city governments can pursue if they are sufficiently motivated to address racial and economic segregation. The capacity of the cities in battling state preemptions relies on the strength of the local network of grassroots advocacy organizations, affordable housing developers, and city leadership. These local networks can create positive rhetoric around IH policies as a means to counter gentrification and racial segregation at the local level, but they also can provide support for reviving IH policies at the state level through inter-city networks.

IH is one of the few tools at the city level that can respond to the challenge of providing affordable housing units in an integrated manner that expands opportunities for low-income families. By providing

an array of lessons and strategies from the three case-studies cities, I believe my research will help inform other cities in reticent states on how to institute progressive housing policies such as IH.

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Key Words: Affordable housing, inclusionary housing, state pre-emptions, housing advocacy

HOUSING INSTABILITY AND THE INNER RING SUBURB
Abstract ID: 1124
Individual Paper Submission

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This paper explores housing instability in an inner ring suburb in the New York metropolitan area. Inner ring suburban communities lie at the intersection of the temporal and spatial processes reshaping metropolitan uneven development. As a result of long term disinvestment and vacancy, gentrification through revalued sites, especially along rail lines, the lingering effects of the foreclosure crisis, and state and local government efforts to attract mobile investment, they are the sites of variegated forms of housing instability. This paper explores these forms of housing instability in one such suburb – Orange, New Jersey -- an inner ring suburb just west of Newark. Using a mixed methods approach that includes analysis of census and administrative data and interviews with community leaders, we examine changes in the community's housing stock, land use, and population as well as the processes that are reshaping them. We conclude with suggestions to reduce housing instability that reflected its variegated reality.

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Key Words: Housing, Precarity, Gentrification, Vacancy

HOUSING CHOICE VOUCHERS: A LONG ROAD TO AN UNCERTAIN OUTCOME
Abstract ID: 1139
Individual Paper Submission

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The housing choice voucher program is one of the largest federal housing programs, serving over 2 million low-income households. Much is known about voucher utilization rates, the location outcomes of voucher recipients, and what those location outcomes mean for a household's economic outcomes. This study uses a recent housing voucher lottery in Los Angeles to look at the filtering that happens before a household ever receives a voucher, and tracks these households from their application through voucher use. This research highlights that low income households face structural barriers before they even apply for a voucher, and that these barriers persist throughout their effort to use the subsidy, likely affecting the ultimate outcomes of the few households who are able to use the subsidy. These findings make the case for greater federal support for rental assistance, and point to specific challenges that housing agencies should consider when administering voucher programs.

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Key Words: Vouchers, affordable housing, lottery, Section 8, Los Angeles

FAIR HOUSING: ASIAN AND LATINO/A EXPERIENCES, PERCEPTIONS, AND STRATEGIES
Abstract ID: 1149
Individual Paper Submission

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As America diversifies racially and ethnically, it is increasingly important to understand the challenges of ensuring fair housing for all. Asians and Latino/as are a growing share of Philadelphia's population, and have raised concerns about access to housing programs in recent planning processes. This paper uses the National Asian American Survey. administrative data, and interviews and focus groups, to assess whether and why Asians and Latino/as are underrepresented in government housing programs. We find that both groups are underrepresented due to a range of linguistic, cultural, and structural barriers. These findings highlight the complexity of affirmatively furthering fair housing for an increasingly diverse population, particularly given a lack of federal and philanthropic support for localities and service organizations looking to advance these efforts.

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KILLING TWO BIRDS WITH ONE STONE: CAN INCREASING HOUSING AFFORDABILITY REDUCE RACIAL SEGREGATION? EVIDENCE FROM THE 100 LARGEST MSAS IN THE U.S.
Abstract ID: 1156
Individual Paper Submission

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Over 50 years after the enactment of the Fair Housing Act of 1968, Americans still live in neighborhoods and cities that are still considerably segregated by race/ethnicity. Given the deleterious effects of racial/ethnic segregation on all peoples, this is quite disconcerting. Between 1990 and 2010, inspite of numerous policies and programs to reduce racial segregation, Black-White segregation decreased only marginally while Hispanic-White segregation increased. Minorities often have to live in high minority and high-poverty neighborhoods and are unable to find housing in neighborhoods with lower proportions of minorities and lower poverty levels. Would a greater availability of reasonably-priced housing within an urban area facilitate greater Black-White and Hispanic-White integration in residential neighborhoods? Conversely, would areas with greater shortages of affordable housing be more segregated?

In this paper we report findings from a study of the relationship between the availability of reasonably-priced housing and levels of Black-White and Hispanic-White residential segregation in the 100 largest U.S. metropolitan areas (MSAs) at three points in time – 1990, 2000 and 2010. We used publicly available data (from a variety of sources) pertaining to race/ethnicity, population, population growth rate of different people groups, income, and housing costs. We conducted the analysis in two stages. In the first stage, we examined correlations between Black-White segregation and housing affordability, and Hispanic-White segregation and housing affordability in 1990, 2000, and 2010. In the second stage, we used simple regression techniques to explore the effect of housing affordability on racial segregation, controlling for a few factors. Residential segregation was measured using dissimilarity indices. Housing affordability was measured using the percentage of cost-burdened households.

Our main finding is counter-intuitive: we found that residential segregation levels were lower in MSAs with greater shortages of reasonably-priced housing. Housing policymakers have generally believed that increasing the supply of affordable housing could kill two birds with one stone – reduce housing cost burdens while increasing the possibilities of residential racial integration. Our findings suggest that this is perhaps unlikely.

A secondary finding is that segregation trends for Black and Hispanics differ, so policies and programs that treat both those groups as one non-White group are missing the mark.

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IS MEXICAN SOCIAL HOUSING DESTINED TO SPRAWL? PRODUCTION RESTRICTIONS ON AFFORDABLE HOUSING
Abstract ID: 1163
Individual Paper Submission

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Financial reforms implemented at the end of the 20th century in Mexico fueled an urban expansion process that sparked massive house abandonment and growing segregation (Fuentes & Hernandez, 2014; Monkkonen, 2012). In response to the dire consequences of rapid suburbanization, the Mexican government implemented changes in public policy intended to redirect urban growth to more central locations trough subsidy allocation. Since 2013, the assignment of social housing subsidies privilege vertical multifamily housing located within Urban Containment Polygons (UCP), these consist of predefined perimeters that encircle the cities grid plus an immediate buffer zone (Secretaria de Desarrollo Agrario, Territorial y Urbano, 2018). After six years of policy implementation, studies have found that UCPs are ineffective in containing growth and that they change yearly to incorporate suburban housing developments that do not comply with its original objective of urban core consolidation (Monkkonen & Giottonini B., 2018). Additionally, while housing developers adopted vertical housing, its suburban location has not changed, Monkkonen and Giottonini estimate that only 8% of subsidies nationally are assigned within the first polygon (or perimeter) in the urban core where most employment locates. Overall, the policy failed to redirect social housing supply closer to jobs, educational, and recreational opportunities.

The academic discussion on why these strategies are ineffective concentrates on weak regulation; still, this interpretation does not address the restrictions on centrally located affordable housing. This study proposes that policies failed to understand the underlying logic behind housing production decisions; it hypothesizes that imperatives in social housing production push affordable housing into suburban locations. It states that affordable housing production relies on scale economies, and that building height affects construction costs. These cost reduction decisions made by housing developers explain the mortgage fueled suburban expansion and why redirecting already reduced subsidies has failed to promote intraurban affordable housing.

This case study for the city of Tijuana assesses speculative house builders production decisions that lead to location, production volume, and building height. It uses a database on detailed housing production costs and a representative sample of segmented housing stock for 2005, 2010, 2015, and 2019. The results of the statistical analysis corroborate that social housing production costs depend on high scale production and low height design. These production imperatives are the reason buildings for low-income families are suburban located and do not exceed four stories in height.

These findings shed light on the inefficiencies of Mexican housing policy; they also provide a perspective on an ongoing discussion over affordable housing availability trough markets and the socio-economic differences that arise.

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Key Words: affordable housing, Mexico, urban expansion, housing policy

THE RIGHT TO SHELTER AND PUBLIC HOUSING IN HAWAII
Abstract ID: 1164
Individual Paper Submission

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Recent HUD proposals to implement work requirements as a condition of housing subsidy receipt have pushed issues of labor force participation into the national conversation. The evidence on the impacts of work requirements suggests that while they do increase labor force participation, they do so in a way that does not lead to families moving up and out of public housing or becoming economically empowered (Levy et al. 2019; Rohe, Webb, and Frescoln 2016). Indeed, the vast majority of HUD subsidized families are either elderly, disabled, children, or working according to the Center on Budget and Policy Priorities: 55% of federally subsidized families are disabled or elderly, and 26% are working, and another 4% have recently worked (CBPP 2019).

But other than these statistics, little research has been done to understand the nature and meaning of formal work among public housing recipients. A vast literature has covered informal labor in housing communities (Venkatesh 2006), but the formal labor market has been somewhat neglected. Such an understanding is critical not only because it presents an important corrective to the idea of public housing as a place of indolence, but because the experience of families in the labor market (both idiosyncratic and structural) can help inform policies promoting economic mobility via housing.

To address this gap, we use interviews with public housing families in Honolulu, HI. Seventy-five families were randomly sampled from addresses at three public housing developments (an 83% response rate). Interviews took place mostly in housing units and lasted between 1.5 and 3 hours. They were designed to be free flowing, covering not only respondents' relationship with work, but their personal and social contexts as well.

Despite its spatial isolation, the Honolulu housing market mirrors the national housing crisis in many ways. The shortage of affordable rentals in Hawaii has left families severely cost burdened, the majority spending more than half of their income on housing (NLIHC, 2019). The state's shortage of housing production has pushed rents up at a rate of 3.6% (JCHS, 2019). Similarly, the state's high cost of basic needs such as healthcare, food, childcare push families to work multiple low-paying jobs in service and tourism.

Following the national trend, our preliminary findings suggest that the vast majority of our non-elderly, non-disabled, adult respondents are working. Given the high rates of disabled, elderly, and children residents in public housing, many workers are caregivers. Neighborhood isolation from service jobs leaves many workers, predominately single mothers, commuting long distances by jobs predominately located in tourist areas. These jobs are highly volatile and cannot be utilized for asset building. The at-will nature of work available to public housing residents is misaligned with HUD's process for calculating the tenant's portion of their rent (TTP), which generally assumes work to be both reliable and stable. This creates a series of perverse incentives around work and prevents them from prioritizing children outcomes, health issues, overcoming addiction, and education or improving skills. Tenant Payment (TTP) based on salary increases prevents families from saving to enter the private market.

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Key Words: affordable housing, formal labor, urban governance, public housing, state subsidies

EVICTIONS IN SUBSIDIZED HOUSING

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Increasing rent burdens and a shortage in the supply of affordable housing options reflect and contribute to affordability concerns nationwide. In some cases, precarity driven by long-term unaffordable housing or immediate financial shocks can exacerbate further housing insecurity in the form of an eviction (Desmond, 2016). Recent, nationally-representative data from the Eviction Lab show that, in most locales, evictions consistently occur at a scale which exceed foreclosures at the height of 2008 crisis. The impacts of eviction are also spatially unequal: the highest eviction rates are found in areas of concentrated disadvantage and evictions precipitate moves to neighborhoods with higher poverty and crime rates (Desmond & Shollenberger, 2015).

Current research has primarily focused on (or expressly distinguished) evictions in the private rental market, and has begun to analyze the scale of evictions in stratified rental markets and the eviction practices of different types of owners, especially large or corporate landlords (e.g. Immergluck et al., 2019). While relatively small, local public housing authorities often manage a significant portfolio of low-income rental housing. Federally-subsidized housing represents an important safety net for low-income renters and the preservation of local affordable housing options. However, little is known about the extent and nature of evictions in federally subsidized housing. Therefore, this research aims to frame the scale of eviction filings in subsidized housing and to explore potential mechanisms for the ejectment of tenants from subsidized units.

This analysis employs a unique panel of all properties—subsidized and unsubsidized—in Philadelphia from 2006 to 2017, including data on over 250,000 eviction filings scraped from the publicly accessible court docket. Using layered housing subsidy data from the National Housing Preservation Database supplemented by additional historical research, we analyze the prevalence of eviction filings across local housing markets and subsidy types. Our research suggests eviction filing rates are at least as prevalent in housing units receiving subsidies as those that are not, and eviction filing rates are highest among public housing units. In addition we explore the extent to which changes in the property-level receipt of housing subsidy—via owner opt-outs in project-based Section 8 subsidies and the disposition of LIHTC (Reina & Begley, 2014; Reina & Winter, 2019)—may correspond to an increase in eviction filings at those properties. We conclude by interrogating the potential social and economic consequences of evicting tenants from subsidized housing as well as discussing policy implications and avenues for future research.

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Key Words: evictions, housing, subsidized housing, Philadelphia

SEARCHING FOR STABLE ECONOMIC DIVERSITY IN NEIGHBORHOODS: AN EXPLORATION ACROSS U.S. CITIES

Abstract ID: 1181
Individual Paper Submission

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With recent research examining the longer-term and intergenerational outcomes of the Moving to Opportunity demonstration illustrating positive neighborhood effects, the neighborhood is again affirmed as an important unit of analysis for individual and societal wellbeing. As both economic inequality and economic segregation increase in cities, one possible response, and one for which planning can play a major role, is to imagine and work towards an alternative future with more stably economically diverse neighborhoods within city boundaries. Existing research shows that such neighborhoods, while hardly the rule, do exist; however, the origins, characteristics, and influences of stable economic diversity at the neighborhood level remain under-researched relative to the same for segregation.

This paper explores the locations and characteristics of neighborhoods that have maintained economic diversity over time within cities across the U.S. and addresses the following analytical questions: 1) How do different criteria and operationalizations of the concept of "neighborhood-level economic diversity" converge or diverge in their results? 2) Are there any patterns in the locations and characteristics of stably economically diverse neighborhoods, and are there regional, or other, variations? 3) Can any of the identified neighborhoods be further categorized as featuring "naturally-occurring" stable economic diversity, i.e. independent of government intervention? In order to answer these questions, a number of different approaches to assessing neighborhood-level economic diversity, including absolute and relative measures of diversity, are employed and the outcomes compared.

This paper contributes to a growing body of literature that seeks to identify and understand stable economic diversity in neighborhoods. By demonstrating the divergent outcomes resulting from the different measures of diversity and the variegated patterns and characteristics of the identified neighborhoods, it points to the need for a critical consideration of what is meant by "diversity" and how it is operationalized in planning practice. Furthermore, it shifts the gaze from evaluations of social mixing to observations of the phenomenon of social mix itself to propel the conversation on neighborhood social mix further. Finally, it makes preliminary suggestions regarding what planners and policymakers could learn from neighborhoods of stable economic diversity, naturally occurring or otherwise, to inform policies on mixed-income communities.

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Key Words: economic diversity, economic segregation, mixed-income, neighborhood stability, neighborhood change

EARTHQUAKE RETROFIT REQUIREMENTS AND MULTIFAMILY HOUSING IN LOS ANGELES

Abstract ID: 1198
Individual Paper Submission

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Los Angeles is facing an affordable housing crisis, with rising rents and insufficient housing to meet demand. Despite a recent boom in new housing units across the city, these new units represent a small portion of the city's available multifamily housing. And a serious earthquake has the potential to level some of the more affordable housing options in the city: the city's aging multi-residential buildings. To counter the risk of an earthquake to the city's older multifamily units, Los Angeles enacted seismic regulations in 2015 that require approximately 15,000 buildings across the city to undergo a retrofit that will enable them to withstand future earthquakes. To recover the costs of the retrofit, some owners will increase rental prices whenever possible, potentially by pushing out long-term renters in favor of newer renters who can afford these costs.

This research explores how the retrofit program impacts rental housing across the city. I do this by conducting a spatial analysis of the retrofit program in Los Angeles and examining retrofitted buildings in relation to rental prices and demographic change variables at the census block level. This research provides planners a better understanding of how city-level regulatory changes to increase security in the face of environmental threats can affect rental housing in Los Angeles.

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Key Words: housing policy, earthquake retrofit, rental housing

THE CHANGING ORDER OF HOUSING INEQUALITY AFTER FOUR DECADES OF MARKET TRANSITION IN URBAN CHINA: A REAPPRAISAL USING MICRO-LEVEL NATIONAL POPULATION CENSUS DATA

Abstract ID: 1207
Individual Paper Submission

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The forty years of market reform since 1978 have profoundly changed the residential landscape in Chinese cities, with dramatic improvement of housing conditions and yet also the rise of housing inequality (Fang, Liu, and Chen, 2019). In the numerous housing literature on Chinese cities, one dominant theoretical foundation has been the market transition debate regarding the changing order of social stratification during the transition from a centrally-planned economy to a market economy. In the market transition debate, Nee (1989) proposes the market transition theory that predicts shifts of power, opportunity, and incentives towards market players, whereas others scholars (Logan and Bian 1993) argued for the persistence of redistributive power that determines housing access and outcomes.

Empirical studies of housing inequality inspired by this debate have largely focused on the relative predicting effects of political privilege vis-à-vis individual affordability and preference (Huang, 2003; Li, 2012). The evidence has rather been limited to the time period until the early 2000s, when the housing market was only emerging in most Chinese cities. More recent studies, have been limited to single-city case studies, particularly a few mega-cities, due to the lack of nationwide data.

In this paper, taking advantage of unique access to micro-data sets of most recent population census (2000, 2010) and mini-census (2015), we aim to offer a reappraisal of the changing order of housing inequality in Chinese cities since the emergence of the urban housing market. First, we aim to test whether political privilege gradually lost its predictive power in housing inequality (measured by access to homeownership and housing space) during 2000-2015. Second, we focus on the dynamic shifts of market opportunities and incentives in a market transition process, and investigate whether heterogenous effects of political privilege in different cities that vary in the share of the state sectors and the development of the commodity housing market.

This research contributes to our scholarly understanding of the housing system in a marketized urban context and to inform future housing policy making in China with an up-to-date appraisal of the urban housing inequality with a unique access to micro-level census data.

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Key Words: Housing inequality, Social stratification, Market Transition, China

UPZONING AND HOUSING PRICES: A (VERY) EARLY ANALYSIS OF THE MINNEAPOLIS 2040 COMPREHENSIVE PLAN
Abstract ID: 1230
Individual Paper Submission

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On December 7, 2018, the Minneapolis city council approved a path-breaking new general plan which, once implemented, will allow by-right development of three-unit structures on every residential parcel in the city. By lowering barriers to new development, the plan's goal is to increase housing density and

ultimately lower housing costs citywide. In the short-run, however, by increasing the permitted uses on single-family parcels, the upzoning should increase the value of parcels affected by the change. Even though (at time of writing) the city has yet to formerly implement the changes, in this project I test whether the anticipated upzoning has led to an increase in the value of affected parcels.

Using data from Zillow's ZTRAX transaction database, I estimate a series of difference-in-differences models comparing residential sales in Minneapolis before and after the policy's approval, with those in Saint Paul and inner-ring suburbs. I find that compared to the previous year, after the city's approval of the 2040 plan, sales prices of properties on formerly single-family zoned parcels increased relative to similar transactions across the metropolitan area. As an additional test, I use land-use and historical development data to identify neighborhoods with unmet demand for dense housing. I find that the policy change had the strongest impact on house prices in these neighborhoods, further suggesting the plan's effectiveness. Finally, I estimate similar models comparing transactions in multifamily structures and find little difference in prices before and after the city approved the plan.

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Key Words: Housing, Zoning, Single-Family Zoning, Land Use

HOW DO LIVING ENVIRONMENT CHANGES AFFECT RESIDENTIAL SATISFACTION OF RESIDENTS IN PUBLIC RENTAL HOUSING? EVIDENCE FROM A QUASI-LONGITUDINAL SURVEY IN BEIJING
Abstract ID: 1234
Individual Paper Submission

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Since 2007, the Chinese government has initiated a series of affordable housing programs aimed at improving the housing conditions of low-income urban households. Existing studies have examined the evolution and politics of affordable housing policy design at the national level, as well as the implementation and location of affordable housing projects at the local level. In contrast, only a limited number of studies has probed into the affordable housing policy performance from a micro perspective by investigating the beneficiary's residential satisfaction.

Affordable housing policy in China has always emphasized on construction and provision of decent housing and attached less importance to real policy performance reflected by beneficiary's feelings, i.e. residential satisfaction. Existing literature has proved that residential satisfaction is essential to residents' well-being and affected by a bunch of objective attributes including housing and neighborhood characteristics. However, the mechanisms of how these objective measures of housing and neighborhood environment influence residential satisfaction are still unclear in empirical studies.

In this paper, we fill the intellectual gap by empirically investigating different attributes' role in predicting

residential satisfaction of renters in public rental housing (PRH) and identifying the mechanisms of their impact. We hypothesize that the change of the objective attributes such as housing cost, housing conditions, transportation and business facilities from the previous residence to PRH projects will affect renters' perception and further influence their residential satisfaction. We conducted a quasi-longitudinal survey of renters who had recently relocated into five PRH projects in Beijing. The survey, completed in 2019, solicited information about housing and neighborhood before and after the relocation to PRH projects. Utilizing this unique database and structural equations modeling approach, we intend to answer how the changes of objective attributes affect PRH residents' perception and further their level of satisfaction with PRH neighborhoods.

This research offers a micro-level and comparative perspective for evaluating recent affordable housing policy in China by focusing on life changes and well-being of public rental housing beneficiaries and therefore provides more understanding for improving future policy design.

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Key Words: Affordable housing, Neighborhood environment, China

PROMOTING INCLUSION IN A MIXED-INCOME TRANSFORMATION: LESSONS LEARNED FROM THE CHOICE NEIGHBORHOODS INITIATIVE IN CHICAGO'S WOODLAWN PARK
Abstract ID: 1247
Individual Paper Submission

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The mixed-income development strategy has been promoted as a policy intervention designed to alleviate poverty, assimilate public housing residents into broader social opportunities, and spatially and economically integrate previously disinvested neighborhoods and the low-income people who live in them. Yet, much of the evidence from the field shows that the realization of these goals continues to be difficult from a policy implementation standpoint (Chaskin & Joseph, 2015; Fraser, Oakley & Levy 2013; Joseph & Yoon, 2017; Khare, 2016. Instead, research shows how residents living in new mixed-income communities can experience strained social interactions, challenging community life, and social exclusion.

The Choice Neighborhoods Initiative (Choice) offers a chance to incorporate the lessons learned from HOPE VI as local actors aim to improve implementation efforts (Pendall et al., 2015). Choice still holds further promise in realizing its goals of advancing economic opportunities for low-income residents. Research indicates that there is a need to develop a deeper understanding of how to implement sustainable and successful mixed income communities in order for this housing approach to reach its full potential.

To glean greater understanding of Choice implementation outcomes, we explore the Woodlawn neighborhood in Chicago, which has undergone rapid changes over the past ten years due to multiple public and private investment projects and planning efforts. The Choice grant and related investments have resulted in major changes in housing development and the broader housing market across the Woodlawn neighborhood. These investments undoubtedly impacted the lives of the primary intended

beneficiaries: the original, low-income residents who were relocated when the Grove Parc Plaza Apartments (a project-based Section 8 housing development) was demolished and redeveloped by the Preservation of Affordable Housing (POAH). In addition, the secondary intended beneficiaries, namely, the residents who moved into the new Woodlawn Park mixed-income housing development and the neighbors living in the surrounding neighborhood, also were impacted. While we know major changes occurred in the lives of the intended beneficiaries, we do not yet have evidence as to how and to what extent changes benefited the variety of populations influenced by the transformation process.

This study asks three questions - In what ways has the Choice grantee (POAH) and key neighborhood stakeholders developed and implemented strategies intended to promote inclusion and mitigate exclusion? How do residents perceive and experience inclusion and exclusion? How do neighborhood stakeholders perceive and experience inclusion and exclusion? We examine how strategies intended to facilitate inclusion for residents across different incomes and housing tenures were implemented, and how residents and neighborhood stakeholders perceive and experience inclusion and exclusion before, during, and after a mixed-income transformation. In particular, we are interested in how key actors within the Choice transformation in Woodlawn Park, such as staff and partners of the POAH, have tried to promote inclusion, while also attempting to mitigate exclusion. In addition, we seek to explain how residents and neighborhood stakeholders have experienced these dynamics of inclusion and exclusion and how their experiences within the mixed-income environment led to demonstrated quality of life changes. This study employs qualitative research methods, consisting of (1) semi-structured interviews with residents, (2) semi-structured interviews with neighborhood stakeholders, and (3) the participatory research method of photovoice. This research intends to inform current and future Choice initiatives and other mixed-income efforts that aim to transform neighborhoods while prioritizing positive benefits for existing low-income residents.

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Key Words: Mixed-income, Choice, Implementation, Inclusion, Exclusion

BUILDING CHINA, THE STRUCTURAL TRANSFORMATION OF CHINA'S PROPERTY DEVELOPMENT INDUSTRY
Abstract ID: 1276
Individual Paper Submission

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China has seen massive housing development in the past two decades, when the country ended its welfare housing system and promoted the development of a market housing industry. Annual housing production increased from 176 million to 772 million square meters from 1999 to 2016 (China National Bureau of

Statistics (CNBS), 2017). Numerous studies have examined the drivers of this phenomenon, such as the strong housing demand generated by population and economic growth. Yet, how the property development industry has organized itself to produce all the housing has received little scholarly attention. This neglect is problematic considering that the industry has become a major actor in the Chinese economy; the structure of the industry and its behaviors must have had significant impacts on Chinese housing markets and the overall economy. We know very little about these relationships.

While the lack of research on China's property development industry may be surprising, the subject has also been understudied in other countries. This is most likely due to the dominance of the neoclassic housing economics theory in the field that views the development industry as being highly competitive, where few developers are large enough to exert significant market power (Gyourko, 2009). Yet there are challenges to this theory. Fainstein (2001) and Weber (2015) have argued that developers are important agents in the real estate market; they do not passively react to changes in market demand but may instead help shape the market. Coiacetto (2006, 2009) further argues that the behavior of the development industry is closely tied to its structure; a concentrated development industry could have wide-ranging consequences for urban planning and development.

We propose to examine three issues regarding China's property development industry. First, how has the structure of China's property development industry changed over time and across different housing markets? Second, what have been driving the observed changes in the structure of China's property development industry? Third, what do these changes mean for local housing production?

To answer those questions, we compiled data from two main sources. The first is the annul China Real Estate Statistics Yearbooks published by CNBS, which provides information on the size distribution of development companies and their output levels. The second is the annual Research Reports on China's Top 100 Real Estate Development Firms, published by China Real Estate Top 10 Research Group. For both datasets, we develop measurements to examine changes in market share and industry concentration at both the national and local level. These measurements are combined with other socioeconomic data to examine the structure in the property development industry and the factors behind those changes.

We find that with the rapid expansion of large real estate development firms in China, there is a growing integration of real estate development activities across the country. The level of integration, however, has differed in different regional housing markets. For cities in China's eastern region, rising land cost and reduced land supply makes it difficult even for large firms to sustain significant volume of development, leading to a highly competitive development environment. By contrast, cities in the central and western regions have seen a growing concentration of development activities among large national firms, raising questions on the influence of those large firms on local housing markets. These findings can help us understand China's housing affordability crisis and evaluate the risks on Chinese housing markets.

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Key Words: Property Development Industry, Housing Production, Industry Structure, China

CARDIOMETABOLIC RISK AMONG RENTERS AND HOMEOWNERS
Abstract ID: 1307

Individual Paper Submission

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Researchers have consistently found that renters have adverse health outcomes as compared with homeowners—in terms of cardiovascular disease (Gabreab et al 2015), stroke (Jackson et al 2014), and even mortality (Woodward et al 2003). Yet it is unclear whether the experience of renting versus owning contributes to these health disparities, or whether the difference is largely due to selection, reflecting higher rates of homebuying among those who are more advantaged (and healthier) to begin with (Lindblad & Quercia 2015). Still, the housing conditions more commonly associated with renting (such as poor maintenance, affordability challenges, frequent moves, and living in multifamily buildings and urban environments with greater potential for noise and pollution) may plausibly lead to worse health outcomes.

Outcomes such as disease and mortality are long-term consequences that may stem from a range of factors over the life course entirely unrelated to a person's current living conditions. To better understand the links between housing tenure and health, it is important to use more proximal measures sensitive to current health status, such as biomarkers that can serve as indicators of cardiometabolic risk (CMR) (Robertson et al, 2015; Suvarna et al 2020).

In this paper, we first ask whether renters have higher CMR levels than homeowners. Second, can greater CMR among renters be explained by differences between the sociodemographic characteristics of renters and owners? Third, what aspects of renting are associated with CMR?

Using the Health and Retirement Study 2010/2012 biomarker sample (N=10,480), we measure CMR among homeowners and renters aged 50-84 by assessing levels of C-reactive protein, hemoglobin A1C, total cholesterol and high-density lipoprotein cholesterol, heart rate, systolic and diastolic blood pressure, and waist circumference.

We find that renters have higher overall CMR levels than homeowners, reflecting differences in C-reactive protein, hemoglobin A1C, systolic and diastolic blood pressure, and waist circumference. The association remains when accounting for demographic and socioeconomic characteristics related to homebuying, as well as health behaviors. Some housing conditions correlated with renting, such as perceptions of neighborhood safety, are associated with CMR, while others, such as living in multifamily housing, have no measurable relationship with CMR.

These results suggest that specific aspects of renters' housing conditions are linked with poor health. Whether someone is able to buy a home may be one of the material conditions through which socioeconomic advantages translate to better health (Ross and Wu 1995), compounding in cumulative health disadvantages over the life course (Seeman et al 2004, Willson et al 2007). This research offers lessons for housing policy, underscoring the personal and societal costs of unequal access to mortgage financing, while pointing towards practical and impactful ways that planners can improve housing conditions for renters.

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Key Words: Housing, Health

PRESERVATION FOR WHOM? THE IMPACT OF LOCAL HISTORIC PRESERVATION ZONING TOOLS ON AFFORDABILITY IN THE UNITED STATES

Abstract ID: 1308
Individual Paper Submission

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Increasingly, there is a tension between historic preservation and the development of new housing in cities in the United States (Appelbaum, 2020). Proponents of the former claim that preservation is key to maintaining the affordability of a neighborhood through protecting the older housing stock that is present there (Listokin, Listokin, & Lahr, 1998). On the other hand, supporters of the latter argue that creating more housing is key to increasing the affordability of a city through housing supply (Glaeser & Gyourko, 2019). This conflict is clearly visible in Austin, Texas as the city works to adopt its Land Development Code revision, particularly between older and newer neighborhood groups as they struggle to advocate for their view on how to increase affordable housing in their communities. The majority of the research on the link between historic preservation and an increase of affordability in a neighborhood is focused on programs that provide funding for preservation. There is little research on the role local historic preservation zoning tools play in supporting the affordability in a neighborhood even though at the local government level land use and design guidelines are commonly enacted to support preservation goals. Research also shows that historic preservation programs can have an impact on the demographics of a neighborhood with a link to affordability (Kinahan, 2018). This paper aims to understand whether historic preservation zoning tools lead to the creation of more affordable neighborhoods in a city. Using Austin as a case study, this paper assesses the change in affordability in two historic neighborhoods in the city, Hyde Park and Old West Austin by studying demographic differences over time. These neighborhoods have locally enacted historic preservation land use and design guidelines that have a clear impact on the creation of new housing in the neighborhood. The impact on affordability is assessed through analyzing neighborhood change in terms of race, ethnicity, income, and tenure. Census data from before and after the designation of the historic status in these neighborhoods is studied to understand the change in population demographics resulting from the creation of historic preservation guidelines. The data on neighborhood demographic change in Austin suggests that the local zoning historic preservation tools may not produce a clear impact on the increase of affordability in a neighborhood and in fact could have the opposite effect. This paper brings focus to two aspects of historic preservation and affordability in cities in the United States: the role played by land use and design guidelines in historic preservation, and the impact such guidelines have on the affordability of neighborhoods. Overall, the paper aims to provide a nuanced approach to understanding how preserving the historic built environment of a neighborhood can impact the ability to provide affordable housing to residents.

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Key Words: Affordable Housing, Historic Preservation, Land Use and Zoning

THE ROLE OF QUALIFIED ALLOCATION PLANS IN SITING LOW-INCOME HOUSING TAX CREDIT PROJECTS

Abstract ID: 1310
Individual Paper Submission

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The Fair Housing Act, enacted in 1968 to prohibit housing discrimination on the basis of race, color, religion, sex, and national origin, aims to increase access to opportunity for low-income households. Fair housing advocates insist that US housing policy need to encourage new affordable housing developments in higher opportunity areas which can provide low-income families with higher accessibility to better jobs, good schools, and healthy food (Goetz, 2016). In response to this notion, Low-Income Housing Tax Credit (LIHTC) program, which is the largest place-based affordable housing subsidy program in the United States providing 2.6 million housing units places in service from 1987, was designed to build affordable housing units in opportunity neighborhoods through providing tax credits to private investors (Schwartz, 2014). Studies on the locational patterns of LIHTC projects found that LIHTC units are built relatively more in neighborhoods with lower-poverty rate compared with other subsidized housing programs (Freeman, 2004). McClure (2006) also found that about 43 percent of LIHTC units were built in suburban neighborhoods while 35 percent of voucher holders are located in those neighborhoods.

LIHTC program is operated by state governments and they allocate LIHTC projects based on Qualified Allocation Plans (QAPs) which is issued by state governments. The criteria in the QAPs play a significant role in siting LIHTC developments during the competitive process of tax credit award. Ellen and Horn (2018) examined whether QAPs' criteria can contribute to placing LIHTC projects in higher opportunity neighborhoods. By reviewing the location criteria in QAPs of 20 states and addressing locational patterns of LIHTC units between 2002 and 2010, they found that changes in QAPs prioritizing higher opportunity neighborhoods led LIHTC projects located in neighborhoods with low poverty rate and less racial concentration. They provide the very first finding about the role of QAPs' criteria on shaping siting patterns of LIHTC developments through empirical evidence. Based on these findings, this study raises a question about how QAPs' criteria can restructure the location of LIHTC developments historically. In other words, this study aims to answer to more fundamental question, "can government effort help locate subsidized housing in higher opportunity neighborhoods?"

This study first reviews Ohio's QAPs' criteria issued between 2006 and 2018. Ohio state has issued QAPs every year or two with different site selection criteria emphasizing more accessibility to community services such as schools, public transit service, groceries, and hospitals. I coded those criteria changes as index to quantify the emphasis on such accessibilities. Then, it looks at the historical changes of locational patterns of LIHTC developments in Ohio approved in the same period. The locational patterns of LIHTC developments was estimated by each development site's accessibility to opportunities using GIS-based measurement. Using statistical modeling, this study then finds the role of QAPs' criteria in siting the LIHTC developments in high opportunity neighborhoods. This historical review on the Ohio's QAPs and the locational patterns of LIHTC developments can provide an empirical evidence about whether state government can help low-income families reside in neighborhoods with higher opportunities.

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Key Words: Low-Income Housing Tax Credit, Qualified Allocation Plan

REVISITING THE SORTED CITY: SAN FRANCISCO, HOPE SF, AND THE REDEVELOPMENT OF PUBLIC HOUSING 15 YEARS LATER
Abstract ID: 1318
Individual Paper Submission

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In 2004, San Francisco's Hope SF program set out to address both the physical decay of public housing properties and the social exclusion of public housing residents through the redevelopment of 7 public housing sites and the integration of higher income housing units into those communities. Hope SF was distinguished from other local efforts to redevelop public housing at the time by the program's guiding principles, which provided an all-encompassing set of heuristics that guided the redevelopment of public housing in the city and kept redevelopment efforts at each public housing site focused on the program's twin goals of physical and social revitalization. In 2019, the program's pilot project at the Hunters View development officially completed phase 2, marking the end of the public housing portion of the project. This paper uses this milestone as opportunity to revisit the Hope SF program. Earlier research identified four unresolved contradictions within the model's framework: (1) choice, (2) time, (3) deservingness, and (4) boundaries. Using both interview and archival data, this paper elucidates how those contradictions have played out within the Hunters View project. In doing so, it asks whether Hope SF has lived up to the program's initial objectives of social and spacial integration or has instead functioned to sort the affected populations, differentiating between deserving and undeserving poor, and generating a new geography of poverty and dispossession within the city. Findings reveal the challenges and contradictions that local governments face in their efforts to create housing options for very low income households within a model that relies on high land values to be financially feasible.

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Key Words: Public housing, US Housing Policy, Urban Poverty, Neighbohrood revitalization

WHAT MAKES HOMEOWNERS OPEN TO BUILDING AN ADU?
Abstract ID: 1334
Individual Paper Submission

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Accessory dwelling units (ADUs) – also called in-law units, secondary units, or granny flats – are an increasingly promoted smaller-scale option for densifying urban areas (e.g. first-ring suburbs) and providing relatively affordable housing. ADUs are small self-contained dwellings that share the site of a larger dwelling structure, either as a standalone structure or as a converted portion of the larger dwelling itself. ADUs have so much potential that some researchers have even estimated that ADU-like developments could provide half of California's new housing capacity in the coming decades, for example.

ADU production has been hampered in the last few decades due to a combination of restrictive zoning in single-family neighborhoods, limited homeowner access to ADU construction financing, neighborhood opposition, and other factors. But some of those barriers are beginning to crumble. California, for example, recently enacted legislation that overrides or eliminates most remaining local restrictions on ADU siting and permitting statewide. Homeowners across the state now have the right to add an ADU on almost any helped single-family lot, provided the ADU does not exceed 800 square feet, does not exceed 16 feet in height, and maintains 4-foot side and rear setbacks. The state also reduced the cost of developing ADUs by eliminating or reducing impact fees for ADUs.

Coinciding with California's liberalization of ADU development and use over the past 3-plus years, ADU permit applications have skyrocketed in multiple cities across the state. But additional barriers to widespread ADU construction remain. On the institutional side, barriers include high construction costs and restrictive financing options. And on the behavioral and attitudinal level, barriers range from homeowners' lack of information about ADUs or their discomfort with the permitting process to their concerns about ADUs (and their residents) impinging on their quality of life or their plain lack of interest in building an ADU. But how pervasive are each of these and other barriers? Why are some homeowners willing to consider building an ADU while others are not? Answering these questions would help identify what additional opportunities exist to foster ADU construction.

A growing body of research elucidates the demographics, motivations, hardships, construction processes, and ADU use of homeowners who already own ADUs. Yet evidence is sparse on the relevant opinions and knowledge of homeowners who do not own an ADU already. My study helps fill that gap.

In the summer and fall of 2019, I surveyed over 600 homeowners near Sacramento, California about their ADU ownership, past attempts to permit an ADU, willingness to build an ADU in the future, and attitudes towards neighbors building ADUs, along with related demographic and attitudinal questions. I used both logistic regression and qualitative analysis to examine the respondents' willingness to build an ADU.

My results indicate that homeowners having previous experience as a landlord or knowing others who own ADUs were more likely to be open to building an ADU. On the other hand, homeowners were less likely to consider building an ADU if they were long-tenured residents or perceived ADU residents as noisy or contributing to neighborhood parking problems. Housing oneself, a family member, or a friend was the most frequently cited "major motivation" for potentially building an ADU. And the top reason homeowners listed for not wanting an ADU was a lack of space or other physical logistical constraint, followed by simply having no need for one and privacy concerns. Cost was not amongst the top three cited reasons for homeowners not wanting an ADU. But homeowners open to building an ADU cited cost-related concerns as to the top two obstacles they expected to actually building an ADU.

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Key Words: Accessory dwelling units, Housing, NIMBY, Affordability, Single-family

LIFE DISRUPTION AND DISPLACEMENT AFTER LOW ATTENTION DISASTERS: EXPERIENCES OF NON-OWNER AND IMMIGRANT HOUSEHOLDS
Abstract ID: 1357
Individual Paper Submission

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On July 19th, 2018 an EF3 tornado crossed through Marshalltown, a small Midwestern city of 27000 people with a relatively high percentage of Hispanic, immigrant, and renter households including those who rent to own through contract sale. The tornado has received limited attention beyond the local news media and local and State agencies even though it caused major damages. Damage level was particularly high in low income neighborhoods that are spatially and socially separated from other portions of the city. Some households are living in damaged homes with very limited means to start repairs or have only undertaken minimal repairs insufficient for the imminent cold winter. Moreover, local advocates estimate that many affected households may not be asking for help despite their great needs. Marshalltown, with its significant proportion of immigrant and non-homeowner households affected by the Tornado, offers a rather unique possibility for assessing the complex recovery challenges of these groups in a low attention disaster.

Disasters often exacerbate rather than change the pre-existing socioeconomic patterns in a society. Therefore, distribution of disaster impacts can be predicted along the lines of socioeconomic, demographic, cultural, and political disparities in communities. The literature on social vulnerability identifies socioeconomic characteristics of individuals and groups that correlate with greater disaster risks, and short and long-term impacts such as life disruption and prolonged displacement. Renters, racial and ethnic minorities, low income, older, and immigrant households, among others, are often identified as socially vulnerable groups.

We conducted a study in Marshalltown to examine how social vulnerabilities with respect to housing tenure and immigration shape housing recovery outcomes in the aftermath of disasters that do not receive much attention and resources. The experiences of these groups in low-attention disasters has been rarely studied in the literature, particularly at household level. Also, existing insights on post-disaster experiences of renters, minorities and other vulnerable groups are often retrospective without accounting for the conditions immediately after a disaster and coping mechanisms these households use in the absence of adequate support.

In this qualitative case study, we collected in-depth accounts of life disruption, recovery experiences, and risk of long-term displacement among immigrant and non-homeowner households. Specifically, we collected perishable data from households to answer four questions: (1) Whether and why immigrant households have limited access to recovery resources and how that affects their recovery process? (2) What recovery challenges do non-homeowner households, in particular renters and those with contract sale, face and why? (3) What strategies and resources are used by immigrant and non-homeowner households to rebound from disasters in the absence of substantial external aid? (4) hat are the effects of living in unrepaired homes and doubling up on physical and mental well-being of these socially vulnerable groups and their prospects for recovery? Methods of data collection consisted of conducting four focus groups with households, more than 50 one on one interviews, and collecting relevant reports and documents. Analysis methods used include qualitative coding of data through theme identification and constant comparison.

Recovery challenges faced in Marshalltown such as concentration of damages in low-income neighborhoods with many contract sale and uninsured houses will result in disproportionate impacts on vulnerable households and population loss for the community. These challenges, very likely in other smaller Midwestern towns prone to tornados, can exacerbate adverse disaster impacts on vulnerable populations in low attention disasters. This research informs development of programs by state and local governmental and non-governmental organizations to address the needs resulting from intersectionality of vulnerability factors especially tenure and immigration status.

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Key Words: tornado, housing, disruption, recovery, immigrant

SHORT-TERM EFFECTS OF A RENTAL VOUCHER: A CHILEAN CASE STUDY
Abstract ID: 1365
Individual Paper Submission

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At the start of 2014, Chile adopted the first national rental subsidy program in Latin America. For the previous 20 years, housing policy had a homeowner objective, supporting low and moderate income households through saving schemes, housing subsidies, facilitation of long-term mortgages and construction of government subsidized housing projects (Ross and Pelletiere, 2014).

In Chile, the rental market is underdeveloped, compared to other OECD countries. At the same time, young families with low income usually live with their extended families, resulting in overcrowding conditions (OECD, 2012). The rental subsidy specifically targets these young and vulnerable families, and gives temporary assistance as families decide their long-term needs. This paper uses a regression discontinuity design to compare the neighborhood outcomes of eligible families that are offered treatment and those that are wait listed.

The rental subsidy in Chile has not been evaluated yet. It requires families to move to 'good quality' housing, but there is no evidence about the about the types of neighborhoods families are moving to. This paper explores if the rental subsidy impacts the kind of neighborhood voucher tenants live in, by using a regression discontinuity design to observe the neighborhood poverty rates, public school availability and 'quality', and neighborhood employment rates. My preliminary results show that families move close to where they used to live, with 75% of them moving less than 15 kms away. Also, they move to areas that are similar to their original areas in terms of poverty rates and availability of services and infrastructure,

such as schools and health centers.

Having evidence on the kind of neighborhoods move to due to the voucher is relevant for policy, to shape possible voucher requirements, analyze the effectiveness of the voucher value and explore implementation strategies that could contribute to improving voucher holder's neighborhoods and outcomes.

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Key Words: Housing, Rental, Voucher, Regression Discontinuity

ANALYZING THE IMPACT OF NATURAL DISASTERS ON HOUSING PRICES USING PANEL VECTOR AUTOREGRESSION MODEL IN KOREA
Abstract ID: 1378
Individual Paper Submission

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Economic and social loss by natural events has been increasing, hence drawing a substantial attention from scholars and practitioners. In particular, those events have frequently damaged real properties, incurring additional cost of repair and maintenance of the properties. A growing number of people take these into account when buying a property, thus the property value in disaster prone areas has changed accordingly. Studies analyzing the relationship between natural disasters and real estate prices have been steadily suggested, but most have focused on one type of disaster in short time period. However, depending on the type and magnitude of the disaster, it can have different effects in different regions.

In this research, we aim to investigate the effect of natural disasters in various types and scales on housing prices in South Korea from 2000 to 2017, using panel vector autoregression model. We use panel VAR model to assess dynamic interrelationship among the various natural events such as heavy rain, typhoon, gale, heavy snow, extreme heat and earthquake, and the housing price for a relatively long time period. To be specific, the model--impulse-response function-- enables to measure the size and the longevity of the response of the housing price to the shock made by the aforementioned natural events. We expect price decline of properties in damaged area by those natural disasters, especially in large cities with a high concentration of population and economic activity. The effects of the disasters might be also different depending on the type and magnitude of disaster.

This research will be valuable in establishing future climate change policies to mitigate the negative economic consequences of disasters by estimating how people perceive and respond to natural hazard.

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Key Words: Housing Price, Natural Disasters, Vulnerability, Economic impact, Panel Vector Autoregression model

EXPLORING COMMONLY PERCEIVED CONTRIBUTORS OF EVICTION
Abstract ID: 1382
Individual Paper Submission

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Over the past several decades, housing in the United States has become increasingly unaffordable, especially for renters. One in four renters spends over half of their income on rent. Among low income renters, the severe cost burdens often result in evictions and chronic homelessness. Eviction is believed to be the leading cause of homelessness because many landlords and property managers are reluctant to rent to people with evictions on their record. Housing evictions are common. For example, in Jackson County, Missouri, 173,720 evictions were filed between 1999 and 2016. This translates to 42 evictions filed per business day. This tells only part of the story; there are a potentially significant number of renters who are displaced through what might be considered informal evictions. Evicted renters are more likely to lose their jobs, suffer from depression, and end up in substandard housing in distressed neighborhoods.

Scholars argue that housing affordability problem among renters and gentrification are strongly related to the eviction epidemic. However, there are very limited empirical studies to support this argument. This study explores whether and how these commonly perceived contributors affect prevalence of evictions at neighborhood level. Examining the eviction filing records and neighborhood characteristics in Kansas City, Missouri from 2010 and 2016, this study particularly examines the relationship between of 1) rent burden; 2) gentrification; and 3) level of investment at the neighborhood level to the prevalence of evictions. Using kernel based regularized least squares that is suitable for exploratory analysis, this study examines how the impact of each contributor varies and also discusses the nonlinearity and interaction effects of these contributors on prevalence of evictions.

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Key Words: eviction, housing affordability, gentrification

TRACK 6 – POSTER ABSTRACTS

ATTEMPTS AT ELDERLY SHARED HOUSING IN JAPAN
Abstract ID: 69
Poster

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BACK GROUNDS

In Japan, private nursing homes and service-inclusive residences aimed at the elderly have been developed for elderly people who are comparatively independent. However, as the Baby Boomer generation has aged the number of elderly who require care has increased,and most of the residence facilities have become suited to those requiring long-term care.

Elderly people who live on their own without requiring care are experiencing the anxiety of living alone and minor lifestyle inconveniences. Most of all, they have little interaction with other people.

Accordingly, early attempts are being made at elderly shared housing. Rather than through direct care, the residents relieve their anxiety and inconveniences through mutual support. The scale is currently around ten people per unit, and residents are able to enjoy the same freedom they would in ordinary rental housing.

However, the Japanese government recently began requiring registration of private nursing homes and service-inclusive residences aimed at the elderly. This has resulted in the elderly being defined as weak and in need of care, and residence management has been instructed to prioritize safety over the freedom of the elderly. If this instruction is further strengthened, residences providing a freer lifestyle to the elderly will be unable to exist.

Elderly shared housing is generally aimed at independent elderly people, but due to their status as elderly, as the years go by their mental and physical state changes. If dementia advances to a level that hinders communal living, residents may no longer be able to live in the shared housing. However, this precise limit is unclear.

RESEARCH QUESTION

What is the level of independence and communality at elderly shared housing facilities that provide independent lifestyles to the elderly? Also, at what limit do the elderly become unable to live in them? Is there any harm from the Japanese government requiring registration of elderly housing units?

METHODOLOGY

Interviews were conducted with the managers of ten elderly shared housing facilities in Japan.

NEW FINDINGS

The average age of residents in elderly shared housing was 83 years old, and the average degree of necessary care was 0.37 (This is a number in Japan's nursing care insurance system that indicates a person's level of necessary care, from independent to needing support). The residents carry out a residents' meeting around once per month, and some people actively perform such tasks as cleaning up after meals or light cleaning of shared spaces. They spend evenings together, building up personal friendships. The limit for the ability to reside comes when dementia advances to the point that they cause problems for other residents, or when they begin to need more care than that which is provided in the housing unit.

However, there were cases in which the support provided from personal relationships built up between the residents enabled residents to reside longer than they ordinarily would have. An example given of the harm caused by registration of elderly housing units was that the residents become more positive about receiving care and forget their desire to build up a free lifestyle together.

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Key Words: Elderly Group Living, Shared housing, Care Service Provider, Age in Place

THE RISE OF INFORMAL HOUSING NEAR INDUSTRIAL ZONES: A CASE STUDY OF MIGRANT WORKERS' SETTLEMENTS IN HANOI, VIETNAM.
Abstract ID: 170
Poster

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Housing plays a central role in connecting individuals, families, and society in human life. Having decent housing in a suitable living environment is a dream of families around the world. In developing countries like Vietnam, migrant workers are the major labor forces for factories in industrial zones. These groups of young people leave their villages to find a better future in the city while building the momentum for economic development for the region and the nation.

In Vietnam, a renovation program has been started in 1986 with the purpose of transforming the central-planned economic structure of the market-oriented economy. Since then, the country has implemented policies and strategies to realize the goals and visions of the programs. As one of the approaches to bring Vietnam into the production chain worldwide, industrial zones have been prioritized as places attracting domestic and foreign investments. Three-quarters of the industrial zones' labor force are migrant workers. Vietnamese Government has provided different policies and programs in supporting the housing supply for workers working in industrial zones. However, only 7-10% of migrant workers are living in housing development built by the Government or private investors. More than 90% of them are on their own in finding a place called "home" after long hours of working at the factory. The majority of migrant workers choose to live in nearby villages where informal housing is provided by villagers.

This study shed the light on the housing issues for migrant workers by answering two basic questions, "How informal housing becomes a vital resource for migrant workers?" and "What impacts it contributes

to the well-being of the residentials." The authors conduct an analysis of the current legal framework to highlights the correlation between housing supply in different sectors and informal housing supply. In addition, a survey with more than 500 migrant workers was conducted to explore the information related to the demographic status, health, living condition, and neighborhood setting. The findings suggest that informal housing has several advantages such as price, convenience, and social supports. However, it is difficult to not notice the trade-off between the living conditions and potential health risks. This raises the concern toward the future of this type of settlement as well as the roles of key stakeholders: local government, private landlord, factory investors, local community, and migrant workers. The study also presents critical recommendations for policymakers based on the housing and neighborhood quality and the sustainable development for migrant workers.

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Key Words: informal housing, migrant workers, Vietnam

APPLYING MACRO-ECONOMETRIC MODEL TO A HOUSING MARKET IN KOREA
Abstract ID: 226
Poster

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Studies on the factors that affect housing prices are broadly divided into micro-research and macro-research. Micro-research can be divided further into housing level, regional level, and national level, depending on the unit of analysis. In macroanalysis, a model is constructed based on the equation system that simultaneously encompasses real estate market variables and macroeconomic variables to reflect the interactions among those variables. The research studies that utilize macroeconometric models focus largely on the effect of changes in the housing market on the national economy.

This study is aimed at identifying the factors and channels that affect the housing market by capitalizing on the macroeconometric model and analyzing the effects of anticipated corresponding changes. The study is differentiated from other micro studies in that it is a macroanalysis that takes the relationship among major variables into account. Additionally, this study is distinct from other macro analysis-based studies because its main scope is confined to housing issues not being extended into the national economy. The need for this approach is associated with characteristics of housing policy and socioeconomic changes. First, housing policy works through its interaction with macroeconomic variables, so it is required to analyze the interactive channel and assess the effect of the housing policy. Second, internal and external socioeconomic changes have a critical impact on housing price through macroeconomic channels. Since the global financial crisis, the trend of low global economic growth has persisted, for which monetary and fiscal policies, including cuts in interest rates, increases in liquidity, and expansions in government expenditures, were actively implemented. Demographic changes and population decline are expected due to low birth rates and an aging society, rapidly altering household structure. Consequently, it is evident that further studies are needed to reflect the influence of these socioeconomic changes on the housing market.

Under these circumstances, this study constructed a macroeconometric model that consists of 29 definitional equations and 27 behavioral equations for the five sectors of total demand, labor, prices, finance, and real estate. Scenarios for the housing policy as well as macroeconomic and demographic

changes were created with relevant simulations being performed. For housing policy, both supply and lending restriction policies were analyzed and, contrary to skeptical views of housing policy, both led to a decrease in housing prices. Housing supply policy had a mid- and long-term effect while lending restriction-related policy had an immediate, short-term effect. For macroeconomic changes, an upward pressure on housing prices resulted from cuts in interest rates, an increase in liquidity, and expansions of government expenditures. This means that monetary and fiscal policies implemented to stimulate the economy also significantly affected the housing market. In addition to analyzing variables individually, this study also simulated both macroeconomic changes and housing policy concurrently. The simulation results revealed that increases in housing prices triggered by macroeconomic changes can be offset by relevant housing policies. Together, the model indicates that housing supply policy proves effective when combatting against fiscal outlays while lending restrictions prove effective when combatting against increased liquidity. In terms of demographic changes, this study analyzed the effects of decreases in labor and the number of households resulting from population decline, and the effect of an increasing number of households induced by the declining number of household members. A reduced labor force decreased housing prices while changes in the number of household resulted in significant swings in prices. A substantial drop in housing prices is expected when a decrease in population directly translates into a declining number of households. However, a rise in housing prices is projected when the decreasing number of household members raises the number of households.

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Key Words: Housing Market, Macro-ecnometric Model, Housing Policy, Macroeconomic Changes, Demographic Changes

HOMELESSNESS AND INSECT-BORNE DISEASE RISK IN A CHANGING CLIMATE: A STUDY OF THE UNSHELTERED POPULATION IN CAMBRIDGE, MASSACHUSETTS
Abstract ID: 1259
Poster

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This project seeks to understand how people experiencing homelessness manage the risks posed by insect-borne diseases. Concerns over the risks posed by insect-borne diseases have increased with realization that climate change is expanding the range of many insects responsible for such diseases. The rise in insect-borne illnesses is captured by the increasing number of US cases of Eastern Equine Encephalitis (EEE), which resulted in 13 fatalities in 2019. Reflecting these worries, cities are taking steps to protect residents. For example, in response to the 2019 EEE outbreak, some municipalities placed curfews on public parks. In Cambridge, MA, the city has posted warning signs in parks calling for vigilance and outlining safety measures. Such measures involve not staying in parks at night and wearing appropriate clothing and insect repellent. Nonetheless, many of these same parks are home to a large and growing population of unsheltered homeless people who are particularly vulnerable to the risks posed by insect-borne diseases. This project asks if unsheltered homeless people are aware of insect-borne disease

risks, whether they take steps to protect themselves from such illnesses and, if so, what those steps involve. Furthermore it seeks to understand how cities, like Cambridge, might better protect their unsheltered homeless populations from the growing threat to health and well-being posed by insect-borne diseases.

Homelessness is a growing challenge in the developed world. In the United States, over 3.5 million people experienced homelessness in 2013, with 85% residing in cities (Liebler et al., 2016). Broadly speaking, the homeless can be divided into two sub-populations: the sheltered, who reside in emergency shelters, transitional housing or safe havens, and the unsheltered, who stay in places not primarily intended for habitation, such as on the streets, and in abandoned buildings, vehicles, or parks (Solari et al., 2014). Virtually all studies of diseases in the homeless population have focused on the sheltered. For example, several studies have identified the diseases, infections and chronic conditions common within the sheltered American homeless population, including, for example, tuberculosis (Badiaga et al., 2008). These studies have resulted in proposed and implemented interventions, such as shelter-based health screenings and vaccination programs. However, the risks and interventions that have been documented predominantly focus on conditions specific to homeless people in sheltered environments, and this is also true with respect to insect-borne illnesses. Studies have, for instance, examined the incidence of bed bugs and body lice infestations in homeless shelters (Leibler et al., 2016).

The method of data collection for this study focuses on interviews. Eight-five unsheltered homeless residents of Cambridge, who sleep out of doors, were interviewed in the summer of 2019. The interviews were based on a common set of questions, but also allowed for more detailed conversations regarding where people spend time and sleep and how they do or don't manage risks from insect-borne diseases. Interviewees were identified through purposive and snowball sampling. An effort was made to sample the most representative sites where unsheltered residents spend time. Data analysis involved, first, coding answers to interview questions, by assigning answers to non-overlapping categories. Then, the more detailed answers to interview questions were used to contextualize patterns in these initial findings and present a nuanced picture of how the unsheltered homeless population in Cambridge manages the risks posed by insect-borne illnesses. Ultimately, the results show that these risks are of considerable concern to the interviewees and that virtually all interviewees have concerted strategies they deploy to minimize their exposure to, and risk from, insect bites. Analysis of these strategies is still ongoing, but will be fully complete and documented well in advance of when the poster is presented.

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Key Words: Homelessness, insects, climate, shelter, health

SHORT TERM RENTALS IN THE REGULATORY ERA: A CROSS-CITY COMPARISON
Abstract ID: 1274
Poster

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2019 is a remarkable year in the U.S. for short term rental (STR) platforms like Airbnb: In October the nation's capital joined a list of cities to enact tight regulations (Bill 22-0092) on STRs. Prior to

Washington D.C.'s regulations taking effect, Los Angeles' STR rules (CF14-1635-S2) became effective in July. Boston, on the other hand, reached a settlement with Airbnb in a year-long legal battle in December and is able to regulate the STR platform in some capacity moving forward (CBS Boston, 2019). Granted, STR platforms have been fighting against the cities when it comes to regulations since 2011, when New York State made it illegal to rent apartment buildings for STR purposes under the New York State Multiple Dwelling Law.

There are several arguments from the pro-regulation side to go against an unregulated STR market, but the most prominent one argues that commercial STRs are partially responsible for the shortage of rental housing stock and have exacerbated the affordable housing crisis in major U.S. cities, such as San Francisco, New York City, and Boston. Research has shown that STRs either inflate owner housing prices (Zou, 2019), rent (Horn and Merante, 2017), or both (Barron et al., 2017). The spillover effect of STRs on the housing market can disproportionately affect minority neighborhoods (Zou, 2019), magnifying housing inequality in those cities.

This research addresses an important urban planning issue on STRs: Can regulations achieve its purposes of controlling the unregulated STR market growth effectively? In particular, I pay attention to both the overall STR listing growth and changes in spatial distribution of listings over time. An innovative web-scraped Airbnb data source is used in this research for Airbnb listing time series data. I compare Airbnb listings by different types (entire homes versus private/shared rooms) across different neighborhoods before and after STR regulations took effect. A rich panel of Airbnb attributes in the dataset allow me to examine the regulatory impact on not only changes in overall number of listings but also listings of various sizes, amenities, hosting activeness, availability, price range, etc. The geolocation of a listing allows me to pinpoint which neighborhoods are hit hardest by STR regulations, which in return would help me understand whether STR regulations can address housing inequality in cities.

Seven cities are included in this study for a cross-city comparison: San Francisco, Los Angeles, Washington D.C., Chicago, Boston, Seattle, and Portland. These cities adopted their STR regulations in different times with different levels of restriction and enforcement. Interestingly, both San Francisco and Boston were faced with a year-long legal battle with Airbnb before a settlement was reached and regulations were enforced. I am able to observe changes in listings and their spatial distribution during the transitional period in these two cities. A time series analysis is conducted to control for seasonality of STR activities and one-time demand shocks due to special events. I expect the preliminary results to show that STR regulations would put a short-term curb on the unregulated STR growth. In longer terms, though, the overall STR market still exhibits rapid growth. The growth rate varies by city and by rental types and neighborhoods within a city, which plays a significant role in housing equity for minority and low-income households.

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Key Words: Short Term Rentals (STRs), Airbnb, Regulation, Housing Equity

PLANNING AGAINST SPATIAL MISMATCH: JOB ACCESSIBILITY OF LIHTC PROJECTS AND ITS INFLUENCE ON TENANTS' COMMUTING

Abstract ID: 1287
Poster

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Since the inception of the LIHTC program, developments are directed to Qualified Census Tracts and distressed neighborhoods with the highest need for affordable housing. Along with the development of poverty deconcentration theme, providing low-income households with access to opportunities, including access to good jobs, transportation, schools, healthcare infrastructures, etc., has been gaining more attention. In terms of the definition of "opportunity", LIHTC developments have been directed to locations close to employment opportunities and public transit in some states. By doing so, one impact that state housing authorities hope to see is that accessibility is no longer compromised by affordability and residents have access to opportunities within a reasonable distance and through a viable travel mode. Yet, it remains unclear whether LIHTC projects offer better access to suitable jobs and less competition along with the shift of state policies. Also, previous studies have not dealt with the question of how employment and commuting behaviors of LIHTC tenants would change as a result of the given accessibility and priorities. To address these questions, this study sets out to examine the differences in job accessibility of LIHTC projects in California and Wisconsin between 2009 and 2014, and further analyzes the influence of such accessibility on tenants' commuting patterns and employment outcomes.

LIHTC project information applied in this study is from HUD's Low-Income Housing Tax Credit Database. In terms of job accessibility of LIHTC projects, this study follows job accessibility index developed in Shen's 1998 and 2001 papers, and interpreted in Lens' paper (2014), which essentially analyzes job openings and job growth, competition for jobs, job accessibility by transportation modes, and travel-time estimates of accessibility. Regarding the employment data, this study applied 2015 LEHD (Longitudinal Employer-Household Dynamics) data. The job accessibility index of 2009 allocations will be descriptively and statistically compared with the job accessibility index of 2014 allocations to examine the change of access to opportunities and job competitions. Regarding tenants' travel data, this study applies data from the National Household Travel Survey (NHTS) 2017 add-on program. Tenants' commuting distance and commuting mode will be regressed by LIHTC job accessibility index, and controlled by socio-demographic characteristics and other built environment variables, in order to explore the effects of LIHTC accessibility on travel behaviors and commuting distance.

It is hypothesized that there is a higher percentage of LIHTC developments and units in job-accessible neighborhoods in more recent years, as state housing authorities give more priorities to "area of high opportunity". Another hypothesis is that LIHTC tenants in developments with greater job accessibility will have shorter commuting distance and show a broader diversity of travel modes. This study emphasizes the importance of residents' views and behaviors as a critical evaluation of LIHTC program, due to the dual roles of the tenant as both an evaluator and a true customer of policy programs. The result shows whether the changes in locational outputs of LIHTC programs have been well-perceived and translated into residents' daily commuting. The results will further the discussion about the balanced approach that states apply in developing LIHTC projects by looking into whether local needs for job opportunities and commuting are well addressed, and whether the design and implementation of LIHTC housing program are integrated with transportation and land use planning to achieve the desired outcomes in terms of employment and commuting patterns.

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Key Words: LIHTC, accessibility, commuting, affordable housing

TRACK 7 – INTERNATIONAL DEVELOPMENT PLANNING

TRACK 7 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS FOR THE SESSIONS

CIVIL SOCIETY'S PARTICIPATION IN HOUSING PROVISION
Pre-Organized Session 14 - Summary
Session Includes 293, 294, 295, 297

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It is common in academic literature to observe a clear divide in theorizing a common planning topic differently between the Global North and the South. Planning theories informed by the particular social conditions in global North regions of the world characterized by Western liberal democracy and mature advanced economies, were found to have limited explanatory power in parts of the world where urban areas feel the pressures of rapid urbanization under conditions of poverty, unemployment, poor infrastructure, unstable political conditions, and weak public institutions. Responding to the call for a more cosmopolitan urban theory of ordinary cities (Robinson 2002), and fostering the internationalization of planning theory, this proposed ACSP panel aims to approach the topic of "Civil Society's Participation in Housing Provision" from an international comparative perspective, towards a planning theory of the ordinary cities.

Objectives:

- Establish a framework that applies to all housing provision that involves civil society's participation;
- A global comparative perspective to foster the discussion of power dynamics in housing.

HELP CIVIL SOCIETY ORGANIZATIONS BECOME EFFECTIVE PARTNERS IN SHELTER PLANNING AND DEVELOPMENT? - LESSONS FROM THE SOUTH
Abstract ID: 293
Abstract within Pre-Organized Session 14

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With planning and governance milieus in the global South having become more decentralized and neoliberal, it is now recognized that effective pro-poor shelter approaches, which support the livability and livelihood needs of the poor, benefit from innovative institutional arrangements that promote synergy among the state, the private sector, and civil society (Das 2018; King et al. 2017; United Nations 2017). By positing that successful, pro-poor, urban shelter outcomes often emerge from collaborative institutional environments and arrangements facilitated by state action, this paper explores factors and conditions that yield transformative civil society contributions. For at least two decades now, field research has revealed the productive potential of civil society organizations (CSOs), especially of non-governmental organizations (NGOs) and community-based organizations (CBOs), to contribute to pro-poor urban development (e.g. Carley et al., 2001), in general, and shelter (e.g. Mitlin & Satterthwaite 2004; Sen 1999), in particular. Yet, for various reasons, compared to other co-produced services, the

engagement of civil society in the shelter arena has proven challenging and is underwhelming. Although planning research has long emphasized the merits of participation by communities and CSOs for attaining pro-poor objectives, across diverse institutional contexts, relatively much less focus has concentrated on uncovering what makes contexts more or less conducive for vigorous civil society action. This paper builds an evaluative framework informed by pioneering scholarship on theorizing civil society, such as the "social origins" approach to understanding the structural dimensions and functional aspects of the nonprofit sector cross-nationally (Anheier 2004; Salamon et al. 2017). Drawing upon primary, multi-methods research as well as secondary literature, it applies this framework to interpret, explicate, and qualitatively compare uniquely successful civil-society-led shelter initiatives from South and Southeast Asia. Focusing on the space for civil society, it argues that CSO capabilities in the shelter sector, locally, are a consequence of how state-civil-society relationships have evolved over time, how those relationships operate at scales beyond the local, and that local state-civil-society interaction can encouragingly depart from larger, limiting trends. It concludes by suggesting how various local planning stakeholders—NGOs, philanthropic foundations, academics, universities, and the media—can do more to urge the state to generate conditions that can stimulate civil society contributions for expanding and improving pro-poor shelter.

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Key Words: civil society, pro-poor shelter, slum upgrading, South Asia, Southeast Asia

EXAMINING THE INTERESTS OF STAKEHOLDERS IN THE PROCESS OF SPATIAL RECONFIGURATION OF RURAL RESIDENTIAL SPACES IN SUZHOU
Abstract ID: 294
Abstract within Pre-Organized Session 14

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Background: With rapid urbanization in China, residential spaces in rural areas have undergone substantial changes. Under the national policy of urban-rural integration, local governments show great interests in redeveloping farmers' homesteads. As developable lands in urban areas become scarce, governments have been seeking new land sources for development. By relocating dispersed farmers to dense and congregated residential neighborhoods, local governments can change their residential lots to farmlands and transfer the development right to urban areas. Because of enormous economic interests associated with the reconfiguration of rural residential spaces, local governments have implemented various policies to promote the movement. Some policies have fundamentally changed farmers' lives.

The spatial reconfiguration is not only a process of rural housing redevelopment, but also an outcome of interest redistribution among different stakeholders such as farmers, local governments, and developers. Although previous studies have offered implications for spatial planning of rural residential neighborhoods, few have emphasized the distribution of interests among stakeholders and associated equity issues. This study attempts to fill the gap.

Case study: Suzhou is a national experimental area of urban-rural integration. During the past decades, urban construction has encroached a large amount of rural lands. Suzhou adopted two types of compensation polices to provide farmers housing: replacing homesteads by apartments and replacing homesteads by homesteads. The former type relocates farmers to resettlement areas provided by local governments and developers, where the housing is similar to apartments in urban areas. Accordingly, residential space form and housing functions are changed drastically. Farmers live a life similar to urban residents. By contrast, the latter type does not change the rural characteristics of residential spaces. The farmers have rights to determinate whether houses are constructed or not. If they decide to build new houses, residential buildings are constructed by themselves, and farmers maintain their social network and traditional lifestyle. These two policies produce different winners and losers.

Method and results: Based on cross-comparisons of different spatial reconfigurations and different stakeholders, this study examined the key interests of stakeholders, their participation in the planning process, and benefits to them. We found that

- All stakeholders strive to maximize their own economic benefits, whereas social and environmental interests are pursued mainly by local governments and farmers.
- Local governments dominate the planning process, while farmers' participation in planning is largely constrained because their power is rather limited, especially when rural homesteads are replaced by apartments. However, when famers' interests are excessively violated druing the process, they will take group behavior to oppose governments' policies. Thus, governments will take social interests security of farmers into consideration and then adjust the policies.
- Because the replacement of homesteads by apartments often results in high-density developments, it generates more developable lands. By transferring development rights to developers, governments can obtain more economic benefits from the former type than the latter. By contrast, the latter generates more social and environmental benefits. Overall, the replacement of homesteads by homesteads produces a more balanced distribution of interests among different stakeholders than another one.

Stakeholders show different preferences for spatial reconfiguration. Driven by economic benefits, both governments and developers tend to pursue the replacement of homesteads by apartments. By contrast, farmers prefer the replacement of homesteads by homesteads, associated with better social and environmental benefits.

This study tries to establish the Space-Interests influence mechanism, based on internal relationship between features of spatial reconfiguration and interests distribution pattern of stakeholders, and proposes three strategies to address the issues to promote farmers' interests: redistributing planning powers among stakeholders, regulating planning activities, and designing policies to ensure social equity.

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CIVIL SOCIETY VERSUS POLITICAL SOCIETY IN HOUSING CO-PRODUCTION: THE EXAMPLE OF THAILAND'S BAAN MANKONG PROGRAM

Abstract ID: 295
Abstract within Pre-Organized Session 14

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Co-Production of housing has been posited as both a solution to states' incapacity to meet the housing needs of citizens and a mechanism of empowerment for the urban poor (Mitlin 2008; Boonyabancha and Kerr 2018). The Baan Mankong program of Thailand has long been held up as an example co-production at its best. Many scholars have asked, in one way or another, what makes this policy so successful? (e.g. Das 2018; Herrle, Ley, and Fokdal 2015). This research has continually pointed to the importance of the involvement of community networks in carrying out upgrading projects. These networks, sometimes referred to as social movements, are frequently described as civil society actors (Herrle, Ley, and Fokdal 2015). However, previous literature on Baan Mankong has failed to adequately describe the variety of networks that participate in the program. Most research has employed case studies, surveys, and short-term fieldwork with the National Union of Low Income Community Organizations (NULICO), the largest of the networks associated with Baan Mankong and the one most closely associated with the government agency that administers the policy, the Community Organizations Development Institute (CODI).

In this study, I take a different tack, both methodologically and theoretically. Based on 18 months of ethnographic fieldwork carried out across three years with multiple community networks, as well as CODI and other government entities involved in the policy, I develop a theory of why the policy has so successfully scaled up that differs from many prior explanations. I employ Chatterjee's (2004) description of political society, as opposed to civil society, to describe the actions of one of the networks involved in Baan Mankong. In this conceptualization, civil society is the formal realm government occupied by elites, whereas political society is the realm in which populations that are typically the object of government must use alternative means to make their voices heard. I argue that a small but more radical network that operates separately from CODI within political society does important work for the policy by agitating for greater government resources for housing and pushing for controversial high-level policy changes necessary to make Baan Mankong work for the poor. Meanwhile, the larger, more visible networks work alongside CODI in civil society to give Baan Mankong a "friendly face" that is acceptable to government leaders. Together, these two approaches work in symbiosis to keep the policy pro-poor while expanding its reach. In pointing to the different roles of the different networks, I call upon planners to pay closer attention to the details of the political beliefs and strategies of community networks, and in doing so to zoom in to the variegated terrain of organizations that are often lumped together under the umbrella of "civil society."

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Key Words: Co-Production, Civil Society, Community Networks, Ethnography, Asia

EXPLORING CIVIL SOCIETY'S ROLE IN HOUSING PROVISION - A CHINA STORY
Abstract ID: 297
Abstract within Pre-Organized Session 14

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How state, market and civil society engage on issues related to urban planning has been a prominent theme in planning literature. Towards a planning theory of the ordinary cities and establishing the foundation for productive comparative discussions, this paper investigate the role of civil society in relationship with the State and the Market actors, using the political ecology framework to understand their power dynamics in the housing system during China's fast urbanization processes in the past three decades. The fast urban development accompanying the old land and household institutions carried over from the Socialist period, have resulted several types of civil society's participation in the housing sector. Three types are analyzed based on literature reviews: informality, rural housing resettlement, and homeowner association. The author will compare these with international literature on similar planning phenomenon, specifically focusing on power dynamics among stakeholders during the housing provision processes in different political economies.The author aims to use the China story to bridge the commonly divided planning literature between global north and south.

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Key Words: Housing provision, Civil Society, Political Ecology

PLANNING IN POST CONFLICT COMMUNITIES
Pre-Organized Session 39 - Summary
Session Includes 136, 137, 139, 183, 253

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The contexts communities face after violent conflict vary greatly. The duration, nature, and scope of the conflict impact the disruption societies face and the magnitude of reconstruction efforts required after hostilities cease. And like all communities, those planning post conflict are also situated within social, political, and economic legacies that impact whose priorities matter in development decisions. This session seeks to present current research on "post conflict planning" and discuss its different meanings across time scales, kinds of conflicts, and global regions. There are two goals for this session. First, we

will present original planning scholarship from different post conflict contexts including from North Africa, Sub Saharan Africa, and Latin America. This work is in different stages of the research process and bringing them together provides an opportunity to explore important new threads of scholarship. Second, we hope to generate much needed dialogue about what constitutes post conflict planning and what emerging questions are there for planning practice.

Objectives:

- First, we will present original planning scholarship from different post conflict contexts including from North Africa, Sub Saharan Africa, and Latin America. This work is in different stages of the research process and bringing them together provides an opportunity to explore important new threads of scholarship.
- Second, we hope to generate much needed dialogue about what constitutes post conflict planning and what emerging questions are there for planning practice.

THE INFRASTRUCTURE OF PEACE: CIVIL-MILITARY URBAN PLANNING IN MALI
Abstract ID: 136
Abstract within Pre-Organized Session 39

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In the context of the current UN-led stabilization efforts in Mali, significant investments in infrastructure and urban development are undertaken. These infrastructure projects implemented by the United Nations peacekeeping mission (MINUSMA) not only point to a military dimension to current urban planning and infrastructure development, but also to a spatial imprint of peacebuilding on the post-war landscape (Bachman and Schouten 2018). Neglected in those accounts of peacebuilding through (infrastructural) development and their undertones of a liberal peace paradigm, however, is the paradoxical nature of infrastructure as both facilitator of movement and exchange, and agent of disconnect and fragmentation, reproducing forms of discrimination, marginalization and violence (Rodgers and O'Neill 2012; Graham and Marvin 2001, Pullan 2013). How are these dynamics taken into consideration by peacebuilding actors in the context of protracted armed conflict, and how do the MINUSMA-led infrastructure efforts reconcile with the explicit programmatic peace currently pursued in Mali? More broadly, what assumptions and vision drive the spatial transformation of spaces of conflict in these military-civilian infrastructure projects?

Focused on the international peacekeeping efforts currently underway in Mali, this paper seeks to conceptualize the spatial and political dimensions of peacebuilding in the urban neoliberal context. Based on a survey of plans, policy document and official communications, I investigate the emergence of military and peacebuilding actors as urban planners, and narratives of reconstruction, development, and peace promoted in the context of the international military intervention. The paper reviews the formal mandate and implicit peacebuilding assumptions operating under MINUSMA to discuss modes of conflict urbanism in the face of infrastructure development in Mali over the last decade. I hypothesize that the image of (urban) peacebuilding is mediated by infrastructure, its underlying political economy and materiality. The paper concludes with several propositions about the imagined 'infrastructural peace' alongside urban fragmentation in the context of the post-liberal peace discourse, and the assumptions about, and nature of, planning after war.

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Key Words: infrastructure, peacekeeping, peacebuilding, urban planning, Mali

IMPACT OF THE "COMPETITIVE MANAGEMENT" OF UNCERTAINTY ON HOUSING POLICIES IN THE POST-ARAB SPRING MOROCCO
Abstract ID: 137
Abstract within Pre-Organized Session 39

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"Competitive management" (Marris, 1996) in the neoliberal Moroccan context, led in 2011, to the set out of protests and demonstrations, claiming the end of social injustices, social indignation and economic exclusion experienced daily by the disenfranchised communities, and encapsulating what is known as the "hogra" The situation of Morocco that has always been claimed as being exceptional, is not. Indeed, Morocco has always been shaken throughout its history by civil uprisings, resulting in repression by the political apparatus, also known as the "mekhzen". Amongst the diverse forms of repression, is the tightening of the noose around slums and informal settlements; in the past, by restructuring slums and bringing in the infrastructure needed, and more recently, by displacing these populations to new housing estates located in the fringes of the city. This happened during the riots of Casablanca in the 1980s, then in the aftermaths of the terrorist attacks of 2003 (Bogaert, 2018) and more recently from 2011 (outbreak of the Arab spring) onwards. This paper attempts to analyze ways in which the political apparatus, in post-conflict situations, adopts what Peter Marris refers to as "competitive management", a management that aims to serve the interests of the regime in power, and protect it.

This paper argues that the restructuration, the sanitization of slums, and the displacement of the urban poor result in social alienation, and the overlooking, not only of systemic issues, but also of the tragic social aftermaths that result from the broken social networks, and the loss of the urban identity. Furthermore, it is argued that the competitive management entails a lack of commitment of the state, as these urban policies focusing on housing as a sole physical solution, do not encompass other social policies to alleviate poverty, unemployment and the gender gap. Also, the state's commitment in providing affordable housing to the poor is limited to a supervisory role of the private sector. Building on Barry's (1999) statement on the role of demonstrations in disseminating a narrative of change and producing knowledge, this paper attempts to answer the following questions: 1) What shifts in housing policies could have resulted from a better incorporation of community-based knowledge? Also, how can this knowledge contribute to the shift of planning in post-conflict communities from "competitive management" to "cooperative management"? This paper attempts to look at ways in which the political apparatus in Morocco could have benefited from political conflicts to bring about innovative housing policies, which are better aligned with the needs of the disenfranchised in the country.

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Key Words: International development, Post-conflict, Housing, Arab spring, Global South

QUESTIONING URBAN DISLOCATION IN POST-GENOCIDE RWANDA: DISPLACEMENT AND STRUGGLES TO REMAIN IN THE CITY

Abstract ID: 139
Abstract within Pre-Organized Session 39

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More than twenty-five years after the genocide of 800,000 minority Tutsis and the deaths of moderate Hutus over 100 days from April to July 1994, Rwanda has moved from the immediate aftermath of post-conflict transition to a focus on urban transformation. The Government of Rwanda is currently engaged in the revision and implementation of the urban masterplan for its capital, Kigali, and is drawing up blueprints to create low carbon green cities at six sites around the country. Officials aim for the population to be 35% urbanized by 2024 and make the leap from a post-genocide society with a rural majority, to an urbanized service hub for the East and Central Africa region. Planning is underway with expertise and developmental models from East Asia and financing from the World Bank and China. Rapid urbanization and totalizing urban transformation in a post-conflict context raise questions about the ethics of planning as expert-led endeavor in a spatially segmented society, rather than planning as a more consultative and gradual social process.

In this paper, I consider dispossession occasioned in the capital and on its peripheries by the requirements of master-planning as a total city form and as a 'world city' aesthetic (Ghertner, 2011). Based off qualitative research in Rwanda in late 2018 and early 2019, I examine two cases of displacement: a) the expropriation and demolition of the Bannyahe (Kangondo/ Kibiraro) informal settlement in Kigali in 2019-2020 (Esmail and Corburn, 2019), and b) the displacement of low-income residents as peri-urban areas in Bugesera district are regularized and re-planned. I examine how these residents relate to planning as the framework in which their dislocation can be placed. How can more inclusive visions for urban space and 'rights to the city' (Lefebvre, 1996) be imagined in this post-conflict, post-genocide context?

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Key Words: displacement, masterplanning, post-conflict, Africa, informality

WOMEN'S GRASSROOTS ORGANIZATIONS AND POSTCONFLICT DEVELOPMENT

Abstract ID: 183
Abstract within Pre-Organized Session 39

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Postconflict situations are highly gendered contexts that both heighten gender-based violence and insecurity but also offer unique opportunities for true social transformation that improves women's ability to participate fully in society (Porter 2016). While preexisting local cultural gender norms and the legal context of women's political participation highly impacts the opportunities for and efficacy of women's roles in post conflict peacebuilding and development, the required social and physical reconstruction of communities opens space for women to make new claims on patriarchal power structures and cultural norms (Berry 2015; Pospieszna 2015). Importantly, these new claims usually originate from women's grassroots organizations (WGOs), which are women-led civil society groups whose membership is comprised of low-income or otherwise marginalized individuals engaged in a wide variety of social,

political, and economic activities aimed at improving life for women and their home communities. However, WGOs role and impact on planning in postconflict communities are often limited for several observed reasons related to the structures of local and international responses to conflict, patriarchal cultural constraints, and low group and individual capacity.

Taken together, the literature suggests that WGOs are essential to community reconstruction and democratization but are often highly limited. Additionally, there is a longstanding concern that research on WGOs fails to comprehensively capture the complexity of these organizations or women themselves as social agents (Kabeer 1999; Richardson 2018). Thus, scholars and practitioners require analysis on the motivations and mechanisms that connect WGO decisions and efficacy to the everyday reality of women and their reconstruction priorities, and in turn, how those interact with the constraints WGOs face as a meaningful postconflict planning stakeholders. This paper addresses this gap by using data from a survey and focus groups from 240 members of four local WGOs in northern Uganda to understand how the daily reality of members interact with WGOs ability to advocate for planning outcomes favored by local women. The data was collected in 2019 as part of a long-term community-based participatory research project through the Center for Peace and Development at the University of Oklahoma. Northern Uganda is a key context for developing this knowledge. The region received significant international attention during and immediately after the conflict between the Government of Uganda and the Lord's Resistance Army. However, in the years that followed, there has been a significant departure of NGOs present in the region and an extensive scaling back of long-term peace, justice, and reconciliation activities. There remain deep fissures in society and few institutions are willing to critically engage in transformative peace building activities.

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Key Words: Post Conflict, Uganda, community development, community organizing

INFRASTRUCTURE, INFORMALITY, AND VIOLENCE: THE CONTRADICTIONS OF NEIGHBORHOOD FORMATION IN GRANADA, COLOMBIA
Abstract ID: 253
Abstract within Pre-Organized Session 39

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Internally displaced persons (IDPs) are known to resettle, mostly, in urban centers, in informal settlements with no access to basic services or public amenities, far away from job opportunities, and with high crime rates (Fiddian-Qasmiyeh et al 2014). But the reality of how the displaced get access to housing and bring stability to their changing world in diverse informal environments is often taken as given. In this paper, I study how IDPs negotiate their lives in an environment of informality, how it shapes in turn their political and social relations, and why it can reproduce political inequality and violence of armed conflicts.

Displacement in an environment of informality is examined here through processes of neighborhood formation and their interaction with local and larger scales of violence and law enforcement in a small

Colombian city called Granada. After more than half-century-long civil conflict, Colombia has more than 6 million IDPs. The Colombian case is exceptional because it has experienced one of the longest civil wars of the 20th century, and it has produced the largest number of IDPs after Syria. But like most cases worldwide, IDPs have followed a relocation pattern from rural areas to urban centers creating new interest in the study of the "urbanization of displacement" (Christensen 2009). While the literature has prioritized the study of displacement in large urban metropolises (Bello 2006), I focus the analysis on Granada, a rather small urban epicenter which received a large influx of IDPs, representing about one third of its population, over the last two decades. With a wide variety of new informal neighborhoods of IDPs located at close distance, Granada offers a unique opportunity to examine neighborhood formation processes and their impact on the collective and political life of the displaced from an inductive research approach.

Through interviews, study of public documentation, and participant observation conducted over 12 months, the paper reconstructs narratives of neighborhood-formation by IDPs and long-term residents of Granada. Analysis of these narratives confirms theorization of informality as a "system of norms that governs the process of urban transformation" (Roy 2005, p. 148) through deregulation, unmapping and exceptionalism in planning practice. It also expands on this definition by identifying informality as an infrastructure that is framing action and practice through the desire and promise of attaining formality. I argue that an environment of informality not only shapes how individuals get access to property and real estate markets, but also affects how they organize among neighbors, how they relate and develop relationships with public authorities, and how they make plans for their future. Through this framework, I identify how state presence and deep social cohesion in neighborhood-formation can result, counterintuitively, in high levels of violence. In a Colombian context of post-conflict reconstruction, I show how "integration" of IDPs through informality can end up reproducing political inequality of civil conflict.

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Key Words: IDPs, neighborhood formation, informality, violence, post-conflict reconstruction

PLANNING THE URBAN FUTURES OF RURAL PASTS I: UNPACKING RURAL-URBAN LINKAGES
Pre-Organized Session 42 - Summary
Session Includes 425, 426, 427, 428, 1136

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Over the past few decades, cities of the Global South have grown, merged, and expanded to envelop their rural peripheries and new urban settlements have developed "in-situ" on formerly agrarian landscapes. Rapid urbanization is transforming rural places and reshaping rural-urban linkages, producing new social, spatial, and economic realities as well as challenges and opportunities for planning. This panel seeks to

interrogate and theorize these rural-urban transitions and linkages across cases in the Global South using interdisciplinary theoretical frameworks and methods. The papers trace the agents and processes underlying these transitions as well as their social, political, economic, and environmental implications to reflect on ways to better plan the urban futures of rural pasts. In particular, this session discusses rural-urban linkages through environmental flows and the questions they raise for equity and sustainability.

Objectives:

- To examine the normative and practical planning challenges associated with rapid urbanization of rural areas
- To develop theoretical frameworks to understand and address contemporary rural-urban linkages

URBANIZATION BEYOND THE METROPOLIS: PLANNING FOR A LARGE NUMBER OF SMALL PLACES IN THE GLOBAL SOUTH
Abstract ID: 425
Abstract within Pre-Organized Session 42

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Popular and scholarly representations of urbanization in the Global South create the impression that urban populations are highly concentrated in megacities, with these major metropolitan areas absorbing ever-larger shares of demographic growth (Henderson, 2002; Sheppard, 2014). We interrogate this narrative using new harmonized time-series data measuring the population of urban agglomerations over time (Florczyk et al, 2019). While nearly all cities in the South, including the largest, are growing quickly, we find no correlation between a city's size in 1975 and its growth rate over the subsequent 40 years—indicating that urban systems, even in the rapidly urbanizing South, are relatively stable. Contrary to claims made in scholarship, urban populations in the Global South are less concentrated in megacities than in the Global North. Meanwhile, countries in the South are witnessing a dramatic expansion in the number of towns and cities in their urban systems—a trend critical for planning. Our findings suggest that urban planning's greatest 21st-century challenge lies not in planning a small number of large places, but rather a large number of small places. We advocate for reviving the concept of "barefoot planning" (Oberlander, 1987) as a first step toward addressing this challenge.

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Key Words: Urbanization, Global South, Small cities, Megacities, Peri-urban

KNITTED TOGETHER: RURAL-URBAN INSTITUTIONAL LINKAGES IN WATER GOVERNANCE IN A SECONDARY CITY
Abstract ID: 426

Abstract within Pre-Organized Session 42

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How do rural governance institutions transform as rural settlements urbanize across the global South? How do these institutional and spatial transformations shape rural residents' access to water in the urban present and future? I develop an analytical framework using sociological institutionalism (Giddens, 1984; Sorensen, 2015; Healey, 2019) and recent work on recombinant urbanization in India (Balakrishnan, 2019) to examine and theorize how urbanization, as municipal reform and a process of social and material change, transforms practices for water governance that are embedded in institutions of caste, regional, and propertied power across rural India. I investigate these questions in the case of Tiruppur, a secondary city in southern India.

Tiruppur is a fast-growing city and an important node in global textile production. Tiruppur's phenomenal growth is occurring through the urbanization of rural settlements that surround a small urban core and involves the conversion of agrarian land into textile industries and migrant housing as well as economic shifts out of agriculture. The rural-urban transition around Tiruppur was formalized in 2011 through municipal reform that expanded the town boundary and recategorized its municipal status. Nearly two-thirds of Tiruppur's current population and area consists of these merged rural settlements where the rural and the urban co-exist and intertwine. To study how practices for water governance and rural institutions are changing in the merged rural peripheries since urbanization and municipal reform, I analyze findings from on-site observations, planning documents, and interviews with diverse stakeholders that I gathered through multiple rounds of fieldwork between 2017-2020.

The case findings reveal that city planning practices instituted after the municipal reform have installed new water infrastructure, expanded the coverage of water services, and altered water provisioning practices in the merged rural peripheries. However, these material changes and emerging practices have not addressed underlying inequalities in water access produced by intersecting entrenched institutions like property ownership, migration status, and caste that have their roots in historical rural-agrarian relations. An institutionalist analysis reveals that these rural institutions and inequalities remain unchanged as the actors promoting urbanization and municipal reform are not committed to an equitable transition. The everyday practices of municipal water providers are also embedded in these entrenched socio-cultural institutions just as they are within organizational practices and plans of prior small town and rural bureaucracies (cf. Kudva, 2013), thus, slowing real change. My analysis, thus, expounds on how rural-agrarian and urban-industrial institutions interact in the governance of emerging urban spaces in a hybrid rural-urban context to address (but mostly maintain) pre-existing inequities around water access.

Across India, rural settlements located on the periphery of smaller cities like Tiruppur are rapidly urbanizing through land use changes, economic shifts, and municipal reforms, generating demand for infrastructure and services. The case findings reveal the importance of attending to existing institutions and planning practices in rural areas and small towns to realize an equitable and sustainable transition from rural pasts to urban futures.

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Key Words: rural-urban linkages, institutions, water, governance, India

URBAN SECURITY, RURAL SACRIFICE: GOVERNING WATER IN AN AGE OF CLIMATE CHANGE

Abstract ID: 427
Abstract within Pre-Organized Session 42

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Global initiatives increasingly privilege cities as leaders of climate adaptation and resilience planning (Long and Rice, 2018). However, this urban focus neglects the broader context surrounding urban climate vulnerability and the impacts of urban water securitization and flood management on rural vulnerability (Hidalgo-Bastidas and Boelens, 2019; Hoogendam, 2019). We present contemporary case studies of how major cities in South and Southeast Asia are managing water scarcity or overabundance under a changing climate. We find rural areas often serve as sacrifice zones as megacities search for additional water supplies or sites to dispose of floodwaters or urban poor living along urban drainage paths. These actions often compound vulnerability in rural areas, themselves struggling with changing hydrological patterns, among other social and developmental pressures. Adaptive responses therefore can deepen rural-rural and rural-urban inequality and result in new episodes of conflict. These experiences remind us that climate vulnerability and adaptation are shaped by historic processes of unsustainable water governance, unequal political power among the most impacted communities, and fragmented governance institutions (Cronon, 1992; Swyngedouw & Heynen, 2003). We argue that cities should redress historic drivers of resource scarcity within their own borders before or in complement to looking elsewhere. We also recommend that resilience efforts promote and evaluate vulnerability and well-being at the scale of the resource in question, in this case watersheds or hydrometric areas. A fundamental challenge ahead will be whether and how urban and rural poor groups can build alliances across large geographic and identity divides to enable more equitable responses to climate change.

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Key Words: Climate adaptation, South and South Asia, Urban-Rural linkages, Social equity and justice, Water management

THE (HIDDEN) EPICENTER OF A PUBLIC HEALTH AND EQUITY PLANNING CRISIS: RAPIDLY TRANSITIONING PERI-URBAN FOOD ENVIRONMENTS IN THE GLOBAL SOUTH

Abstract ID: 428
Abstract within Pre-Organized Session 42

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Throughout the Global South, a nutritional double burden – persistent undernutrition alongside increasing chronic, diet-related disease – is disproportionately affecting children and women from low-income households. Despite this urgent, global trend, research explaining the double burden is still nascent, leaving local planners with little understanding of how – or where – to intervene. The fast-growing peri-urban edges of cities in the Global South appear to be of particular concern. This is where urban planners find it most challenging to keep up with needed services and infrastructure and where recent migrants from agriculture-centered regions settle first, becoming dependent on uncertain wage labor opportunities and vulnerable to volatile food prices as they begin to rely predominantly on purchased foods. While food environment studies tracking the dramatic changes in the production, distribution and retail of food have been common in the Global North, few studies have rigorously examined the nature of food environments in transitioning regions of the Global South or how they relate to nutrition outcomes. Furthermore, nutrition research that does exist in low-income countries has focused on dichotomous rural-urban populations.

We examine the characteristics of food environments across a continuum of urban, peri-urban and rural environments in two contrasting, rapidly growing metropolitan areas in Bolivia: the Andean city of El Alto and the Amazonian city of Montero. Our mixed methods included a survey with nearly 4,000 households, a windshield survey in a transect of both regions covering over 1,000 food outlets, and over 300 interviews with a sub-sample of food store owners.

We found that peri-urban areas were more likely than rural and urban areas to demonstrate multiple forms of the nutritional double burden, within and across households. Differences also exist between urban areas and peri-urban areas in terms of unhealthy food marketing and food sales. One particularly concerning finding is that street food kiosks selling fast food were more common in peri-urban areas where they offer flexible livelihood options for women who are likely themselves (or who have children) experiencing the double burden. Ultimately, we argue that food system planning aimed at addressing nutritional inequities should customize interventions to different regions, invest most in peri-urban areas, target specific types of food outlets with livelihood-supportive measures, and address industry-driven food marketing.

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Key Words: Food environments, Health planning, Food systems planning, Global South

TOWARDS THE FUTURE OF PRESERVATION: ASSESSING SOCIO-ECOLOGICAL RESILIENCE THROUGH COMMUNITY-BASED GOVERNANCE IN RURAL CHENGDU PLAIN

Abstract ID: 1136
Abstract within Pre-Organized Session 42

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This paper reports on agrarian communities and agroecosystems in the Chengdu Plain, southwest China. It focus on changes in the cultural value, socio-ecological function, and governance of a unique agricultural landscape, linpan (wooded lots), which combines forests, farmlands and farmer's dwellings in a patchy, biodiverse and remarkably scattered pattern across a densely populated and exceptionally productive region. For more than two millennia, this landscape has demonstrated long-term productivity and resiliency, and supported sustainably some of China's earliest and most stable urban centers without any major disturbance due to the nourishment of ancient Dujiangyan Irrigation System. Within the past three decades, however, national-scale rapid urbanization policies and the expansion of Chengdu city itself, threaten the continued viability of the linpan landscape. In the past decade, the region has undergone a policy shift - from supporting rural development through a "hard" Socialist New Countryside Construction program of new concentrated housing, to an emphasis on "softer" "Rural Revitalization" that emphasizes cellular-network-based governance and marketing, and leaves the landscape and settlement form more physically intact at certain smaller scales. Most notably, in 2017, the municipality of Chengdu adopted a policy to limit the westward expansion of Chengdu's built area in the historically most productive agricultural land in the Plain, where the drinking water source located. The government also started to nominate this area as Global Important Agricultural Heritage under United Nations Food and Agriculture Organization, and it was listed as a national one in 2019.

In order to strengthen and solidify the community-based governance on landscape management, an innovative type of cellular-network-based monitoring is emerging. Within the framework of this monitoring system a community is divided into a few of spatial grids on the map. In the case-study site, Sandaoyan township of Pidu District, for example, each grid is monitored by a local community staff, who is appointed to be responsible for collecting and reporting ground data within the grid including a wide range of themes such as elder care, poverty reduction, public health or environmental pollution. The information collected is geo-tagged in an APP system and timely reported to the central administrative agency. Supported by newly booming information and communication technology (ICT) the governance system at community level has been improved efficiently which is undoubtedly beneficial to the landscape management in those rural societies far away from urban centers, although a lack of information sharing and public participation are also noticed. Therefore, using social-ecological resilience theory as a framework, globally tested indicators of agroecosystem resilience as a guide, accompanied with field survey, this paper explores how information feedback loop can raise public's awareness in preservation and management and then strengthen the resilience of a traditional agrarian society. The findings of this study would contribute to better understanding on the adaptive capacity of rural communities and benefit to decision making on preservation and development.

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URBAN CLIMATE CHANGE PLANNING IN ASIAN CITIES: LESSONS FROM THE FIELD
Pre-Organized Session 44 - Summary
Session Includes 235, 236, 237, 238

DANIERE, Amrita [University of Toronto] amrita.daniere@utoronto.edu, organizer

This session brings together the work of urban scholars based in different parts of Asia whose recent research relates to issues of climate change resilience and sustainability, in terms of urban infrastructure and social inclusion. Cities in much of Asia are particularly vulnerable to the impacts of climate change, including floods, drought, rise in temperature and extreme weather events. Many cities in Asia are growing relatively rapidly in terms of population and yet remain extremely underprepared in terms of implementing adaptation or mitigation strategies. The research presented in this session will share lessons related to recent experience with planning for and responding to floods, urban growth and vulnerability to climate change in specific Asian cities. The authors hope to address issues of social justice and inclusion in cities where climate change impacts are regularly being felt.

Objectives:

- What have we learned so far about how Asian cities are responding to climate change
- How is climate change in Asian cities affecting the most vulnerable citizens

ANNUAL FLOODING AND CLIMATE CHANGE RESILIENCE IN JAKARTA
Abstract ID: 235
Abstract within Pre-Organized Session 44

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Not only is Jakarta the largest metropolitan area in Southeast Asia, it is the also one of the most dynamic, though beset with most of the urban problems experienced in twenty-first century Southeast Asia. Batavia, colonial capital of the Netherland Indies in the first half of the 20th century was a small urban area of approximately 150,000 residents. In the second half, Batavia became Jakarta, the 28 million megacity capital of independent Indonesia. Among many urban problems, one major problem plagued Jakarta in the last two decades is floods. Floods have become a threat and brought woes for Jakarta residents every year. In early 2020, the flood killed at least 60 people and sent about 400,000 fleeing their houses in Jakarta (Van de Vuurst and Escobar 2020). The annual expected damage due to flooding in Jakarta is approximately USD 321 million per year (Budiyono et al. 2015).

Climate change in Jakarta has been detected through rising air temperatures, increased intensity of rainfall, and sea level rise (Poerbandono, et al 2015). Climate change also increases the vulnerability of Jakarta to flooding (Thiede and Gray 2017). Despite several programs to alleviate flooding, the severity of flooding in many parts of Jakarta has not decreased. Various government responses to flooding pursued through flood management infrastructure such as the East Flood Canal, the Jakarta Urgent Flood Mitigation Project/Jakarta Emergency Dredging Initiative (JUFMP/JEDI), and improvement of discharge capacity and retention capacity of streams and floodplains (Octavianti and Charles 2019; Mathewson 2018).

Recent flood management also recognizes the importance of coping capacities and adaptation strategies held by local communities. Government responses to flooding in Jakarta carried out without significant participation of affected residents particularly residents of kampongs or informal settlements who occupied river banks and other flood-prone land in Jakarta. Most flood mitigation activities in Jakarta have been pursued with lack of public participation particularly in land acquisition and environmental management (Padawangi and Douglass 2015).

This paper discusses the extent to which the adaptation and mitigation strategies for coping with the annual flooding in Jakarta has impacted the climate change resilience of Jakarta's residents and how the various flood management infrastructure developments have not addressed flooding in Jakarta. Annual flooding and flood policies in the last two decades are documented. The flood management infrastructure developments in the megacity of Jakarta are discussed and all efforts of mitigating the annual flooding including the participation of affected residents of Jakarta are also critically analyzed.

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Key Words: flood, climate change, resilience, adaption and mitigation, Jakarta

DROWNED OUT: CLIMATE INJUSTICES IN DHAKA, BANGLADESH
Abstract ID: 236
Abstract within Pre-Organized Session 44

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Megacities in monsoonal deltas face climate-related water crises in multitudinous ways – too much, too little, wrong time, wrong place. This is heightened in Dhaka, the capital of Bangladesh, where lack of urban planning, rapid urban population growth, and social inequities reproduce various injustices and vulnerabilities across scales and sites. Flooding from monsoons as well as inadequate urban infrastructure and lack of coordinated planning causing waterlogging pose severe problems for 17 million people on a regular basis. As climate change alters hydrosocial cycles, climate apartheid is being observed where the elite navigate and appropriate the city very differently than others, thus alienating, marginalizing, and essentially drowning out up to a third of the city's population. This paper discusses what climate adaptation means on the ground and how people's perceptions of, attitudes towards, and lived experiences of climate change adaptation and flooding vary. There is thus a need to focus on the politics of climate adaptation, instead of assuming it is inherently equitable or just.

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Key Words: climate change, water, urban, adaptation, vulnerability

URBANIZATION AND ENVIRONMENTAL CHANGES IN YANGON UNDER EXTREME CLIMATE EVENT, CAPITAL RELOCATION, AND GLOBALIZATION DURING THE ECONOMIC TRANSITION OF MYANMAR
Abstract ID: 237
Abstract within Pre-Organized Session 44

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We used Yangon, Myanmar as a case to reveal the urbanization, environmental changes, and the underlying driving forces, including extreme climate event, capital relocation, and globalization in a radically transitioned economy. Myanmar has one of the least developed transitional economies in Southeast Asia, even though its urbanization ratio has increased significantly. Its urbanization was at 22% in 1968 and 30% in 2008 (i.e., over a 40 years period), and increased to 35% in 2017. This rapid urbanization in the most recent decade has been accompanied by a dramatic change of its society since the country started its economic liberalization in the late 1980s, featured by privatization and the democratic transition in the political sphere in 2011. After assessing the spatiotemporal changes of urban lands, the environmental changes in air pollutants, and major drivers of urbanization from satellite imagery, historic land use maps and expert panels, we analyzed the interdependent changes between urbanization, economic development, and environmental changes. We found that the city expanded urban built up land rapidly from 1990 to 2000 but slowed down from 2000 to 2009, with most newly added urban built-up lands appearing to be converted from farmland. Furthermore, the air pollutant concentration of CO and NO_2 decreased, but that of $PM_{2.5}$ increased in recent years. A positive correlation exists between population and economic development. While the concentration of PM_2 is highly associated with population and the economy, the concentrations of NO_2 and CO, especially NO_2, do not have significant relationship with either population or economic development. We also attempted to explain the changes during urbanization in the context of "potential drivers" identified by our expert panel (i.e., the extreme climate event of cyclone Nargis, capital relocation, globalization).

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Key Words: Urbanization, globalization, extreme climate event, capital relocation, environmental changes

TOWARDS TRANSFORMATIVE RESILIENCE: LESSONS FROM THE URBAN CLIMATE RESILIENCE IN SOUTHEAST ASIA PARTNERSHIP
Abstract ID: 238
Abstract within Pre-Organized Session 44

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In a recent paper published in Nature Climate Change, Romero-Lankao and many other eminent urbanists argue that cities and local governments need to focus urgently on how to implement bold transformative actions in response to climate change impacts (Romero-Lankao et al. 2018). In particular, they single out five foundational "knowledge pathways" that need to be explored and engaged in order to further urban transformation that responds effectively to changing weather and climate patterns while enhancing social equity and inclusion. These knowledge building blocks include political economy and the power to act, multilevel governance, socio-material path dependency, scales of processes, impacts and actions, and cultures and identities.

This paper uses research findings from a multi-year partnership of scholars, activists and government agencies based in a number of secondary cities in Southeast Asia (the UCRSEA project) to provide lessons for policy and practice related to each of the five pathways. The paper presents examples of best practices to support planners and practitioners' efforts to build urban resilience in Southeast Asia and beyond, particularly in understudied secondary cities which face unique development challenges (Daniere & Garschagen 2019). Specifically, examples are based on research collected by different team members in Khon Kaen, Thailand; Dawei, Myanmar; Ninh Binh, Vietnam and Battambang, Cambodia.

Many of the lessons and much of the research work discussed in the paper finds that effective governance in terms of building climate resilience requires cities to include various voices, utilize different forms of knowledge and mobilize diverse resources through multi-sector approaches. Those who are affected directly by climate change must be integrated into the discussion about climate adaptation strategies (Evans 2011). A major challenge to their participation is that in cities of the Global South, both large and small, there are typically very limited opportunities to contribute to dialogue on local climate issues. Possible solutions include the creative use of citizen science and informal knowledge sharing, devising physical and virtual spaces that encourage activism and working closely with a variety of organizations and agencies to facilitate public discussion as part of deliberative processes.

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Key Words: Resilience, Southeast Asia, Urban, Social Inclusion

PLANNING THE URBAN FUTURES OF RURAL PASTS II: SPECULATIVE URBANIZATION AND THE POLITICS OF LAND MANAGEMENT
Pre-Organized Session 95 - Summary
Session Includes 420, 421, 422, 423, 1020

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Over the past few decades, cities of the Global South have grown, merged, and expanded to envelop their rural peripheries and new urban settlements have developed "in-situ" on formerly agrarian landscapes. Rapid urbanization is transforming rural places and reshaping rural-urban linkages, producing new social, spatial, and economic realities as well as challenges and opportunities for planning. This panel seeks to interrogate and theorize these rural-urban transitions and linkages across cases in the Global South using interdisciplinary theoretical frameworks and methods. The papers trace the agents and processes underlying these transitions as well as their social, political, economic, and environmental implications to reflect on ways to better plan the urban futures of rural pasts. In particular, this session emphasizes the challenges of land governance in expanding cities and megaregions and how forms of tenure and processes of land acquisition unfold differently in the contexts of Asian and Sub-Saharan African countries.

Objectives:

- To examine the normative and practical planning challenges associated with rapid urbanization of rural areas
- To investigate the changing politics of land governance through these rural-urban transitions

THE ANTINOMIES OF URBAN VILLAGES AND GATED COMMUNITIES IN PERI-URBAN INDIA
Abstract ID: 420
Abstract within Pre-Organized Session 95

GOLDSTEIN, Shoshana [Cornell University] shoshanarg@gmail.com, presenting author

This paper presents research on the politics of two, often contradictory or juxtaposed, typologies of human settlement on the urban fringes of Indian cities: the urban village and the gated community. As processes of urbanization and speculation lead to massive conversions in land use and the monetization of peri-urban lands for real estate development across Asia (Shatkin, 2017), former agrarian communities have undergone varied experiences of dispossession as well in-situ marginalization (Shih, 2017). This paper looks at the case of Delhi's satellite city, Gurugram, and how its challenges have been shaped by the politics of urban villages and gated residential enclaves in the city's governance and the allocation of resources.

Once dotted with dozens of agricultural communities, the District of Gurugram began urbanizing in the 1980s. Even though farmers sold their agricultural lands, many were able to retain their rights to the central village cores or abadis. Within abadis, or 'urban villages', these ex-agrarian communities dominate local politics and collect rents from informal housing for migrant laborers. The land use regulations that enabled this transformation and the crystallization of the village within the city's urban fabric, however, have also left abadis as blank, un-zoned and informal spaces in master-plans, often cut off from basic services (Narain, 2009; Cowen, 2018). Former farmlands adjacent to the villages have been reconfigured for urban real estate markets, often as affluent and well-serviced gated residential enclaves for a globalized middle-class milieu (Srivastava, 2014). This research asks whether the planned separation of these urban spaces has benefited these different social groups or exacerbated tensions between them.

In the paper, I argue that while the urban village and the gated enclave share political boundaries and common interests, their vastly different categories of urban land-use, and the historically changing land tenure relations that underlie these distinct spaces, ultimately inhibit formal avenues for collaborative governance between them. The basis of this conflict, however, is deeper than economic and political interests. Rather, they reflect different urban imaginaries held by these different social groups. Even as the more affluent of the urban villagers move into gated enclaves, cultural and social class divides continue to estrange these communities from the migrant middle classes despite their economic and physical proximity. Based on interviews and observation, the paper unpacks the relational politics of fear, distrust,

and aspiration between the inhabitants of these discrete peri-urban spaces. It explores how groups characterize one other through rumor and in everyday encounters and transactions that reinforce perceptions of a zero-sum game in the allocation of scarce municipal resources and the attention of planning agencies. The challenges facing this city offer an important comparative case for planning researchers studying similar contexts of peri-urban development across India and the Global South more broadly.

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Key Words: Land management, Real Estate, Urban Village, Gated Community, India

RETHINKING MEGAURBAN REGION DEVELOPMENT: THE LAND-INFRASTRUCTURE-FINANCE NEXUS AS POLITICAL PROJECT
Abstract ID: 421
Abstract within Pre-Organized Session 95

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Both quantitative analyses of land use change and qualitative examinations of government plans indicate that many megaurban regions, particularly in Asia and Africa, are in the midst of a wave of rapid spatial expansion. This paper develops a framework for analyzing the politics that is producing this expansion. It argues that regional expansion emerges as a political project when national state actors seek to build political coalitions around agendas of economic growth and the distribution of land rents in megaurban regions. They seek to do so by capitalizing on moments of opportunity presented by shifts in the investment priorities of transnational financial sector actors, and by advances in infrastructure and logistics technologies that enable the incorporation of new areas into global and regional dynamics of capital accumulation. Hence regional expansion is not a gradual and linear process, but is instead marked by waves of disruptive and politically contentious reforms and plans intended to enable real estate and infrastructure megaprojects. The chapter illustrates these arguments with examples from Asia's megaurban regions.

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Key Words: megaurban region, infrastructure, financial sector, urban politics

URBAN EXPANSION IN FOUR AFRICAN CITIES

Abstract ID: 422
Abstract within Pre-Organized Session 95

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Rapid urban expansion is underway in many Sub-Saharan African cities. Existing research from the Atlas of Urban Expansion (2016) indicates that urban expansion areas within many of these cities are decreasing in density and lacking in sufficient open space. Lower-density development patterns increase infrastructure and social service costs and the lack of open space reduces the presence of beneficial ecosystem services. The majority of African countries have special land tenure types that recognize communal lands. In communal lands, processes for land allocation are often made by tribal leaders, independent of the municipality's planning efforts. Mabogunje (1992) states, "One of the most striking paradoxes about land tenure in Sub-Saharan Africa is the fact that a basically simple traditional system should result today in the complexity that characterizes the situation everywhere". Approximately, 60% of land in Sub-Saharan Africa is under customary land ownership that has evolved from these traditional systems post colonialization.

In research investigating why low density, unregulated expansion is frequently occurring in many African cities, we identified three main reasons. These reasons were 1) land speculation and relatively low land prices at the peri-urban edge, 2) changing tastes and preferences for residential housing, and 3) deficiencies in the planning and land tenure systems (such as bureaucracies with limited personnel, corruption, and land tenure complexity. (Cobbinah et al., 2015). While we agree that these categories contribute to the development pattern, we will use Goodfellow's frame of the 'urban political bargaining environment' to better understand the interrelationships amongst the drivers (2013). Goodfellow believes that by focusing on the technical, bureaucratic level of urban planning in African cities, we overlook the broader political dimensions of urban development. Effective land use and development control necessitates a belief in the state's legitimacy and ability to act and that has a reciprocal impact on the likelihood that urban dwellers and development interests will comply.

In this research project, we use semi-structured, in-person interviews to investigate whether variations in land tenure, land acquisition processes, and urban governance structures explain or contribute to lower-density expansion patterns and little open space provision in the four Sub-Saharan cities of Luanda (Angola/West Africa), Accra (Ghana/West Africa), Kampala (Uganda/East Africa), and Kigali (Rwanda/East Africa). These cities were selected based on existing spatial data, changes in urban density, and the diversity of urban land tenure types. We will use qualitative methods (historical analysis, policy documents, and in-depth interviews), theoretical insights from literature, and spatial data from the Atlas of Urban Expansion (2016) to answer our five research questions. Those questions are: 1) Do higher percentage of customary land within the peri-urban area of a city correlate with greater areas of low density development? 2) Do more steps in the land acquisition process increase the likelihood of informal, unplanned residential development? 3) Are there examples where tribal leaders cooperate with or contribute to municipal urban planning efforts? 4) Are cities with greater autonomy from their federal/national governments better able to direct development and infrastructure provision relative to cities where federal/national politics (often related to external investment) overrule municipal efforts? 5) How do cities ensure the provision and management of open space and green infrastructure within new expansion areas.

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Key Words: Africa, urban expansion, density, land tenure, land use planning

PLANNING PLURALISM AND PROPERTY REGIMES ON THE URBAN PERIPHERY – A STUDY OF SEKONDI-TAKORADI, GHANA
Abstract ID: 423
Abstract within Pre-Organized Session 95

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In many post-colonial contexts, institutional hybridity and legal pluralism pose complex scenarios for land use planning, mainly as smaller and mid-sized cities expand rapidly (Helfland 2015). One such place, Sekondi-Takoradi, Ghana, has undergone rapid urban expansion over the last decade with the opening of the oil industry in the region, shifting the urban morphology to incorporate several enclaves housing foreign workers, on the urban periphery. The territory, which has historically been the domain of the Fante people, continues to function under the pre-colonial property regimes, where almost ninety percent of the land is owned and stewarded by the customary leadership. The colonial and later the post-colonial Ghanaian state have overlaid an institutional and legal infrastructure on the region that allows the state to designate and plan certain areas for so-called "highest and best" land use to support urban development (Obeng-Odoom 2014). In the last decade, Sekondi-Takoradi, which was primarily designed and constructed by the colonial regimes (Dutch and British) as a port town and point of extraction and transfer, has become the hub of corporate enclaves and speculative real estate financing (Obeng-Odoom 2014). Planning and land-management are therefore stewarded by multiple actors (socio-political networks, chiefs, real-estate investors, international corporations) – leaving the state-appointed planners as arbitrators of this new wave of urbanization and extractive interest in the region (Knierzinger 2011; Duthu 2013).

I ask in this paper: How do formal planning systems converge and diverge with customary governance systems in situations of rapid urbanization, and with what implications for land management, speculation, and use? Based on eight months of cumulative fieldwork in the Sekondi-Takoradi region, including interviews, observation, critical cartography (Sletto 2013), and document review, my findings highlight conflicts that are apparent between state-based frameworks of land use and customary concepts of inalienable land and collective ownership. It also reveals the negotiations between the formal state and international institutions and entrenched social networks and local institutions like women traders and kinship networks. Planners have sought to address the conflicting issues of land use, decision-making, and ownership through communication and negotiation with customary leaders, understanding the primacy of these local power structures, even as they formalize and integrate these institutions into western models of property and real estate. This process has led to the further entrenchment of local hierarchies of privilege, as in the case of customary leaders or the urban elite who can engage with the formal economy and private land regime. It has led to the erosion of social protections towards the kinship-based communities that these local institutions are traditionally meant to provide. Ultimately, this research contributes to the growing bodies of literature that focus on pluralistic procedural planning theories from the Global South – including equity-based planning, insurgent planning, and indigenous planning (Thomson-Fawcett & Riddle 2017).

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Key Words: Landuse, Indigenous planning, Institutional hybridity, Insurgent Planning, Pluralism

THE STRUCTURAL AND FUNCTIONAL EVOLUTION OF RURAL HOMESTEADS IN METROPOLIS FROM 1978 TO 2018：A CASE STUDY OF YONGFENG VILLAGE IN SHANGHAI, CHINA

Abstract ID: 1020
Abstract within Pre-Organized Session 95

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Homesteads, the important part of rural settlements, is a multifunctional compound space for rural residents to produce, live, entertain and communicate (Woods,2004). It occupies the core of the interaction of the Human-Earth system in rural areas. There has been a lot of researches on the spatial characteristics, evolution patterns and rules, driving mechanism of rural homesteads evolution (Halfacree et al., 2006; Long et al., 2009; Sharma, 2016; Qu et al., 2019). However, most of the current studies mainly focus on the macroscopic research of rural homesteads, while the microscopic theoretical study is relatively weak. Besides, the researches about the structural and functional evolution of rural homesteads in metropolis from the perspective of building materials are rare. Considering these factors, clarifying the structural and functional evolution rules of rural homesteads at different stages is crucial for understanding the interaction and coupling of the human-land relationship in metropolis, the aims of this paper are as follows: (1) what are evolutionary characteristics of the structure and function of rural homesteads in metropolis? (2) what are the driving factors and mechanism behind the structural and functional evolution of the rural homesteads?

Taking Yongfeng village in the suburban of Shanghai as a case study, the data included socioeconomic data from the Statistics Yearbook and the Government Work Report on rural operation, land use data extracted from Google Earth high-definition remote sensing image data, spatial information from household survey and field investigation. Firstly, according to the characteristics and changes in the building materials and forms of rural homestead from 1978 to 2018, the rural homesteads were divided into three periods successively, including the brick and wood structure stage, the brick bungalow stage and the concrete house stage. Secondly, this paper applied participatory rural appraisal (PRA), a participatory rural mapping method and a driving mechanism framework to analysis the evolutionary characteristics of the structure and function of rural homesteads in three periods and identifies the characteristics and driving mechanism of the evolution.

The results showed the following. (1) Influenced by socioeconomic development, the production and living needs of farmers in different periods, the structure and function of rural homesteads varied obviously. (2) The structural and functional evolution of rural homesteads in metropolis showed a

typical trend of "single-complex differentiation-diversification". (3) The research of a typical natural village showed that the evolution of the structure and function of homesteads are influenced by factors such as the loose land management policy, the imperfect rural homestead exit mechanism, expanding production, improved living conditions and the promotion of regional economic development, the optimization of building materials. (4) The structural and functional evolution of rural homesteads in metropolis was closely related to economic and social transition and the change of housing strategies.

These results can enrich the theory of rural homesteads evolution with a typical district of rural homesteads in metropolis and provide a scientific basis for the construction of farmers' new villages. Besides, the results can help the government understanding the basic rules of the structural and functional changes of the rural homestead and prudently carry out the rectification of rural homesteads in terms of housing policy implications.

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Key Words: Rural Homesteads, Structural and Functional Evolution, Driving Factors, Metropolis

DISASTROUS DIVISIONS: THE NEED FOR A SOCIO-ECOLOGICAL PLANNING APPROACH TO AMELIORATE URBAN VULNERABILITY
Pre-Organized Session 154 - Summary
Session Includes 1210, 1212, 1213, 1217

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In this session, our goals are two-fold: identify the major socio-ecological challenges exacerbating vulnerability in South Asian cities, and discuss the methods and frameworks being used by scholars today for integrated analysis of these socio-ecological challenges. We seek papers that examine the relationships between people and their environment at one or multiple scales of interaction (individuals, collectives, and institutions), using any combination of quantitative and qualitative methods, any framework for integrated analysis, and focusing on any challenge—flooding, air pollution, natural and man-made hazards, water supply, waste management, and so on. Selected abstracts will define and examine the socio-ecological challenge exacerbating vulnerability, and expound on their methodology. Particular emphasis will be given to papers examining how specific 'instruments' like plans, policies, legislations, interventions, or programs aimed to improve environmental outcomes have exacerbated the social, economic or ecological vulnerability of marginalized populations.

Objectives:

- Identify the major socio-ecological challenges exacerbating vulnerability in South Asian cities
- Discuss the methods and frameworks being used by scholars today for integrated analysis of these socio-ecological challenges

"THIS WETLAND IS GOLD": THE PLANNED PRODUCTION OF URBAN VULNERABILITY FOR WETLAND DWELLERS IN DHAKA

Abstract ID: 1210
Abstract within Pre-Organized Session 154

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Dhaka, surrounded by 4 rivers and crisscrossed by over 60 canals, is a city of wetlands. Though, a UNDP study found that permanent wetlands within Dhaka reduced from 14 percent to 4 percent of total land between 1967 to 2010 (RAJUK, 2016) following an alarming global trend where 67 percent of wetlands which store carbon, purify wastewater, and act as buffer against flooding have been lost to urban and rural development (Ramsar, n.d.). Existing studies on urban wetlands quantify wetland loss (Istiaque, Mahmud and Rafi, 2014; Alam, 2014), highlight the ecosystem services wetlands provide and ways to valuate them (Bolund & Hunhammar, 1999; Gomez-Baggethun et al., 2013), and analyze formal institutional pathways for conserving wetlands (Ahern, 2011; Liao, 2012). The wetland literature that looks at the vulnerability of marginalized wetland dwellers tends to focus on social dynamics at the expense of the ecological, while studies that look at wetland restoration often focus on ecological dynamics at the expense of the social. In other words, there's a gap in understanding growing urban wetland loss and rising wetland dwellers' precarity as a coupled socio-ecological phenomenon. Based on a year-long ethnographic fieldwork in two different wetland areas of Dhaka – Korail (urban) and Baothar (peri-urban), I posit that the socio-ecological precarity of Dhaka's wetlands and dwellers is the result of Dhaka's dominant planning processes since the 1980s. Here socio-ecological precarity includes filling-up, displacement, pollution, loss of livelihoods and homes and so on. More specifically, I will argue that starting from the 1980s, the planning process has been refashioned to serve the purpose of land development as opposed to the more traditional purpose of land use regulation. The emergence of planning as a land development strategy has relied on deepening the epistemic disjuncture between wetland ecology and dwellers' life-making practices as planners set out to transform the wetlands into residential and industrial plots for direct as well as indirect sale in the market.

In this paper, I trace the disjuncture between wetland ecology and dweller lives in the planning process through content analysis of policies and masterplans that were developed through collaborations between local authorities such as the City Corporation and Capital Development Authority as well as supranational organizations such as the World Bank and Asian Development Bank. I supplement the content analysis with data from interviews with official planners, planning consultants, and other stakeholders who were part of the planning process in the two major masterplans of the past decades (Detailed Area Plan 1995-2015 and Structure Plan 2016-2035) as well as in the planning and construction of major infrastructure such as roads on the wetlands.. I show how the planning process treated the wetlands as terra nullius, downplayed wetland socio-ecology, and converted the wetlands into residential and industrial zones. Where these policies, zoning laws, and capital investment hit the urban wetlands, they produced a social and political landscape of displacement, exclusion, pollution, and differentiated access. After all, these wetlands were not empty and the fishing and agricultural communities as well as informal settlement dwellers and long-term residents of these wetlands contested the plans to retain their kinships, social bonds, livelihood and home-making practices. Understanding the planning processes underpinning the material conversion of Dhaka's wetlands centers the need for an integrated socio-ecological approach in planning.

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Key Words: Global South, Political Ecology, Urban Resilience, Urban Vulnerability

SOCIO-BEHAVIORAL FRAMEWORK FOR ECOLOGICALLY STRAINED URBAN ECOSYSTEMS EXPLORATORY INSIGHTS FROM NEW DELHI AND MUMBAI, INDIA
Abstract ID: 1212
Abstract within Pre-Organized Session 154

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Polluted urban rivers in cities are a barometer of environmental degradation, more prominently manifested in developing regions. While several technocratic engineering solutions are incessantly underway to remediate these strained urban ecosystems, decision-makers invariably underestimate approaches that mobilize human behavior at the individual, collective, or organizational levels. Possibly because there does not exist a comprehensive framework or method that provides a platform to assess the entire range of solutions from planning, design, engineering, policy, and behavioral interventions. This study aims to deploy the pro-environmental behavioral framework in the context of urban river pollution in select cities in India, New Delhi, and Mumbai. Examining two research questions (1) How are various planning practices engaging in issues of urban water management to influence the local-decision making processes? (2) What interventions for water resource management in the urban environments impact systemic (or incremental) behavioral change at the individual, group, and organizational levels?

Situated in Environmental Psychology, Pro-environmental Behavior (PEB) aids in the sustainability of the natural environment, alleviate harmful effects, or positively benefit the environment. Interventions to encourage pro-environmental behaviors is realized through Behavior Change Techniques, which focus on the individual or household as well as groups, organizational and policy level. This study builds upon Capability, Opportunity, Motivation as the essential condition to understand environmental behavior and vice versa, called the 'COM-B model' or 'behavior system' framework, proposed by Michie, et.al (2011). This behavioral framework is most effective in structuring the board range of findings, from hard engineering solutions to public engagement. Categories for behavior change are classified as restructuring the physical environment; regulation; service provision; disincentive; shaping knowledge & training; reward; social support/ relations; comparisons; identity & self-belief; goals, planning, and monitoring. The PEB framework is used to systemically analyze the depleting urban river condition in two rapidly developing cities of New Delhi, and Mumbai. New Delhi is situated along the Yamuna river, while 2% of river transects the city straining the entire river ecosystem by picking 70% total pollution load. In Mumbai, a coastal city, urban rivers like the Mithi, Goregaon and Dahisar perform the critical role of regulating urban drainage while navigating through densely populated suburban Mumbai and emptying into the Arabian sea. The Mithi river was the primary cause of the intense flooding and life-loss in the city in the July 2005 deluge. While the focus has been on the river cleanup and displacement of informal settlements, there have been no mechanisms to address the pro-development projects contributing greater harm like the BKC reclamation and the river diversion to accommodate an airport runway. Data sources for this study are mainly secondary sources and preliminary field visits to the cities in Oct 2018 and Jan 2019.

Integrating the socio-behavioral approach with urban environmental planning attempts to address the complexity of environmental problems as social problems, and aid in the effective management of human-dominated systems or urban eco-systems. The behavioral analysis outcome presents insights into unexplored opportunities and underinvested efforts, a diagnostic approach meant to inform engaged fieldwork and design interventions. A comparative study of the two cities is helpful in understanding a riverine and coastal urban context in urban water management, expanding the discourse on incremental

opportunities influencing human behavior and decision-making. As we systemically think through the potential to influence human behavior at different levels, there is an opportunity to understand how different groups of the society can equitably be approached, specifically the vulnerable through contextually informed interventions. With the understanding of human agency at its core, as individuals and collective, the socio-behavioral approach can be highly responsive to societal needs in prioritizing research and action.

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Key Words: strained urban ecosystem, environmental degradation, socio-behavioral approach, pro-environmental behavior, urban rivers, developing cities

AN ECOSYSTEM OF ORDER: THE EAST KOLKATA WETLANDS AND THE INDIAN PLANNING IMAGINARY
Abstract ID: 1213
Abstract within Pre-Organized Session 154

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Kolkata's wetlands have always loomed large in its' planning. The East Kolkata wetlands, as they are now popularly called, are a series of marshes, lakes and fishing ponds that buffer the metropolis from the Bay of Bengal. Once seen as the source of pestilential vapours, the wetlands are now known to provide valuable ecosystem services to the city and its residents. Importantly, scientists now understand that the East Kolkata wetlands are central to the city's adaptation to sea-level rise and other effects of global climate change.

How have the evolving perceptions of the East Kolkata Wetlands shaped the city's planning imaginary? That is, how have city plans – from the early colonial period to the present – perceived the wetlands, and how have those perceptions influenced the city's planned spatial and economic order? This paper explores these questions through an analysis of plans and other primary source materials from multiple eras of Kolkata's development, beginning with the hygiene plans of the early 19th century and continuing through the climate resilience plans of the early 21st century. It shows that the wetlands have served as an object of elite fascination, and that each era's paradigm of urban development has been the lens through which the wetlands are understood. Notably, the inhabitants of the wetlands, many of whom are subsistence farmers and fisherfolk, have never featured strongly in planning's view of the wetlands' ecological order. The paper concludes by speculating whether grassroots movements in Kolkata and other Indian cities have the potential to again shift the planning imaginary about wetlands and other vital ecosystems that are increasingly threatened by urban development.

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Key Words: India, Resilience, Climate, Wetlands, History

SOCIO-ECOLOGICAL SUSTAINABILITY: A SOCIAL-ECOLOGICAL SYSTEMS FRAMEWORK ANALYSIS OF WASTE, WATER AND INFRASTRUCTURE IN DELHI 'SLUMS'
Abstract ID: 1217
Abstract within Pre-Organized Session 154

SYAL, Shruti [University of Colorado Denver] shrutisyal7@gmail.com, presenting author

Case

In Delhi, India, 22 large nullahs (stormwater drains) serving as supplementary sewerage empty into the severely polluted river Yamuna. The Interceptor Drain Project aims to intercept non-point source sewage entering nullahs, redirect it to treatment plants, and reuse treated water. However, existing and planned infrastructure is unprepared to handle the additional sewage volume and fecal coliforms from ~1.5 million people living in nullah-adjacent jhuggi jhopdi clusters or JJCs ('slums') that are not factored into land use, infrastructure, and remediation plans (Syal 2021a) (ecological$_{regional-scale}$↔ecological$_{site-scale}$). JJCs lack infrastructure because an institutional framework disincentivizes regulatory agencies from providing durable facilities and consistent service (Syal 2021b) (social$_{site-scale}$↔social$_{regional-scale}$), resulting in waste cycling between toilet, drain, and public space (Syal 2020a) (ecological$_{site-scale}$↔social$_{site-scale}$). With open defecation and waste disposal becoming a justification for evictions (Ghertner 2015), despite nullah pollution occurring upstream of JJCs, due to 'formal' facilities like dairies, industrial areas, and even residential areas (Syal 2020b), this is an issue of environmental remediation and social (in)justice.

Theoretical Framework & Methods

Environmental planning for the Delhi stretch of river Yamuna is clearly interwoven with lack of sanitation and waste disposal infrastructure in drain-adjacent JJCs. How does studying these multi-scalar human-environment dynamics (ecological$_{regional-scale}$↔ecological$_{site-scale}$↔social$_{site-scale}$↔social$_{regional-scale}$) improve planning?

While dynamics and causality are challenging to predict in complex systems, the Socio-Ecological Systems Framework (SESF)– developed for natural resource management- can be used to thoroughly document the variables describing the system (hence 'framework', not 'model'), and qualitatively describe the myriad interactions between social and ecological components. In an SESF, first-tier variables (Resource System, Resource Units, Governance System, Actor Groups) interact to produce outcomes at the SES level, second-tier variables are characteristics that describe the first-tier variables, and third-tier variables are sub-categories of second-tier variables. For instance, Rules are a second-tier variable describing one aspect of the Governance System, a first-tier variable, and Rules can be sub-categorized as Constitutional, Operational, or Collective-choice, making those three third-tier

variables. Expanding on existing versions of the SES Framework (McGinnis & Ostrom 2014, Hinkel et al 2014, Hinkel et al 2015), I created a blueprint framework to analyze the Interactions occurring between Resource System (drain), Resource Units (clean drain water), Governance System for infrastructure/service provision, and Actors (JJC residents, regulatory agencies, NGOs). To describe the variables in my framework, I used data on drain water quality, land use, policy and legislation on infrastructure and service provision as well as regulations on environmental quality and 'slum development', and data from in-depth semi-structured interviews with JJC residents, regulatory agencies, and nongovernmental and community-based organizations involved in sanitation and/or environmental remediation in Delhi. Then, I analyzed how the Interactions between these first, second, third-tier variables produce the Outcome (waste disposal into drains).

Findings

Using SESF analysis to compare the typical form of infrastructure/service provision in JJCs vs. a settlement with community-managed decentralized wastewater treatment systems (DEWATS), I found that the latter system had Interactions that improve social and ecological Outcomes (decreased flooding and improper waste disposal): there was higher Investment (waste removal activity), lower Harvesting (waste disposal activity), and higher density of Information Sharing, Deliberations. While this analysis was conducted at settlement-scale, and not across multiple settlements with DEWATS interventions, it suggests that 'slum' upgradation and environmental remediation are intertwined. Delhi's proposal for river and drain cleanup could thus benefit greatly with a concurrent effort to scale up DEWATS infrastructure in drain-adjacent JJCs.

SESF is a critical tool to untangle complex human-environment interactions in a notoriously data deficient context: urban informality. Once such interrelationships are identified, planning for interventions, policies, and partnerships occurs with clearer, accurate expectations of the outcomes.

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Key Words: social-ecological systems framework, urban informality, sanitation, water pollution, infrastructure/service provision

PLANNING IN THE FACE OF COMMUNITY DISPLACEMENT, CLIMATE DISRUPTION, AND INEQUALITY
Pre-Organized Session 157 - Summary
Session Includes 880, 881, 882, 883

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This session brings together scholars examining how planning and planners can affect and deal with community displacement in the context of changes in economic disruption, induced migration, rising inequality, and climate-based disruptions. The session involves a series of international case studies, from the United States (Louisiana), Japan (Tokyo), Lebanon (Beirut), and Bangladesh (Dhaka). It examines in each case the policies that both helped create or exacerbate community displacements, as well as the policies and planning tools that have or could be used to ameliorate community displacements.

Objectives:

- to understand the contours of community displacement in different international contexts
- to understand how policies have exacerbate or ameliorated community displacement, including environmental planning policies
- to understand how planners can respond better in the face of community displacement

PLANNING CLIMATE REFUGE: THE CASE OF LOUISIANA
Abstract ID: 880
Abstract within Pre-Organized Session 157

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In 2018, the World Bank reported that in the next thirty years, the impacts of climate change could force more than 140 million people worldwide to move within their own countries. In 2017 alone, an estimated 1.5 million Americans migrated to other (mainly urban) parts of the country in response to climate-related disasters. Against this backdrop, there is growing interest in planned resettlement projects—that is, projects that move entire communities threatened by climate change away from vulnerable areas—as a form of progressive 'climate resilient' planning (Arnall, 2019). However, there are significant uncertainties surrounding: (1) the benefits and disadvantages of planned resettlement projects for the groups they are meant to serve, particularly in the Global North, where resettlement has not been widely implemented; and (2) the implications of planned resettlement for wider questions of environmental justice, inequality, and marginalization.

This paper addresses these knowledge gaps through an empirical investigation of the first official planned resettlement project in the United States: the Isle de Jean Charles Resettlement Project. Funded by the U.S. Department of Housing and Urban Development (HUD) and led by the State of Louisiana, the project aims to move the residents of Isle de Jean Charles, Louisiana from their low-lying island community to a new inland settlement (Maldonaldo & Peterson, 2018). We focus on the Isle de Jean Charles case because it has been framed as a national test case for planned resettlement, and because the case allows for a nuanced analysis of the intersections between racial inequality, environmental (in)justice, and resettlement planning in the U.S. context: the island is home to the Biloxi-Chitimacha-Choctaw Tribe, a group that has a long history of forced displacement, dispossession, and social and economic marginalization. Two research questions guide our analysis: (1) How has the Isle de Jean Charles resettlement project been governed and rationalized by public actors at the local, state, and national levels? And (2) How does the project meet the needs of local residents, particularly in light of historic and ongoing processes of marginalization?

To answer these questions, we conduct an impact assessment of the resettlement planning process. We draw on policy documents and interviews with policymakers and planners to examine the governance objectives guiding the project and the official discourses surrounding the costs, benefits, and challenges of planned resettlement, and compare these to the grounded experiences, needs, and priorities of the residents of Isle de Jean Charles and other stakeholders, which we capture through qualitative interviews, focus groups, and participant observation at community planning meetings. This analysis yields two main findings. First, it illustrates that policymakers and planners have outlined clear theoretical benefits to

resettlement for community members—including the maintenance of community ties and access to state assistance for housing and land provision—alongside a vision of resettlement as a key component of Louisiana's overarching climate resilience framework. Second, however, the impact assessment reveals significant challenges surrounding meaningful participation: in particular, residents emphasize a 'hijacked' planning process that fails to address cultural needs, social and emotional ties to place, and the historic legacies of colonial planning and environmental racism (Pulido & De Lara, 2018).

Internal displacement represents a significant challenge to planners: in the coming years, planners will need to prepare for a wave of climate-induced rural-urban migration, not only in practical terms (for example through the development of housing and other physical infrastructures), but also in equitable and just ways, as the dynamics of internal displacement often intersect with larger patterns of social inequality and exclusion (Sassen, 2014). In analyzing one empirical case of resettlement planning, the paper highlights key obstacles to—as well as opportunities for—just outcomes in the resettlement planning process.

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Key Words: Climate resilience, Resettlement, Environmental justice, Participatory planning

GLOBAL DEVELOPMENT GOVERNANCE: A POLITICAL ECONOMY ANALYSIS OF DEBT, HUMANITARIAN-DEVELOPMENT LOANS AND WATER INFRASTRUCTURE PLANNING IN LEBANON POST-2011
Abstract ID: 881
Abstract within Pre-Organized Session 157

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The refugee influx into Lebanon after the 2011 Syrian conflict has made it the largest proportional recipient of refugees, increasing pressure on its already strained ecological resources, like water, and limited public finances. In addition to a water sector that suffers from massive institutional and infrastructural problems, making water storage poor and its supply and quality unreliable, Lebanon's debt, already at 134% of GDP in 2011, spiked at 152% in 2019 (World Bank 2019). During this period, debt further weakened the government's capacity to manage dwindling resources and deliver services. In response, Lebanon has increased its reliance on foreign aid, the latest indication being the Economic Conference for Development through Reforms with the Private Sector (CEDRE) in Paris (2018), where governmental, private and international organizations pledged to support Lebanon address these overlapping challenges. Against this backdrop of Lebanon's debt and deteriorating economy, and their ramifications on the ground (including an ongoing uprising that began in October 2019), this paper analyzes multilateral donors' role and interests in financing what they term "humanitarian-development" solutions to Lebanon's challenges. Taking the World Bank's Bisri Dam loan as its case, this paper adopts a critical political economy/ecology lens (Peet, Robbins and Watts 2011; Hanieh 2013) to explore the power dynamics and shifts in global development paradigms in relation to water governance in Lebanon.

Relying on semi-structured interviews with key donors, government officials, academics and opposition movements in Beirut, it explores the focus on massive and expensive infrastructural projects as the solution to Lebanon's water problems. It investigates which projects are prioritized and funded, what types of policies they introduce and planning they leave behind, and what their impacts are on local populations. Questioning donors' interests, this paper problematizes the social, (geo)political and power relations of these monetary flows and deconstructs discourses presenting them as sustainable and equitable long-term solutions to a nexus of challenges. While the literature has discussed aid as a power relation, problematized its technical solutions and role in perpetuating market policies (i.e. Mosse 2005; Li 2007; Eid-Sabbagh 2015) and emphasized debt as a social relation (Soederberg 2014), this paper builds on these insights to contribute to scholarship on global governance and development. It uses the Bisri Dam to situate post-2011 loans within Lebanon's longer history of aid relations, positing that, in addition to being a monetary and social relation, this aid is also a form of global governance of development in accordance with the demands and structures of the global capitalist economy. Accordingly, it explores the geographies of access and benefit inequality these projects leave behind.

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Key Words: global governance, development finance, debt, world bank, global political economy

TAMING THE POST-GROWTH CONDITION? NEIGHBOURHOOD DECLINE, OBSOLESCENCE AND DISPLACEMENT IN TOKYO
Abstract ID: 882
Abstract within Pre-Organized Session 157

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Japan's population is projected to decline from 127 million in 2015 to 88 million in 2065, such that even Tokyo – world's largest urban agglomeration – is expected to take a demographic downturn from 2025. This unprecedented shrinkage, coupled with a prolonged recession and rapidly aging population, indicates a transition to "post-growth Japan" (Hirayama & Izuhara, 2018). Political and institutional foundations that supported economic development and redistributive measures during the high growth period are being dismantled through neoliberal reforms, resulting in growing inequality (Machimura, 2009). While massive urban restructuring of central Tokyo is underway to address limits-to-growth challenges, both suburban public housing estates and east-end working-class downtown areas witness Tokyo's major challenges with decline: the concentration of low-income seniors, inadequate housing and social care, and lonely death.

Against this backdrop, my paper examines forces and processes of neighbourhood decline, as well as political rationalities of neighbourhood revitalization in the time of post-growth Japan. In particular, this paper investigates how neighbourhood decline is framed in association with the concentration of seniors, what forms of displacement are experienced by vulnerable tenants through the process of decline and revitalization, and how revitalization initiatives intend to address persistent social issues such as poverty and inadequate social care. To this end, I take a case study approach focusing on two Tokyo's

neighbourhoods in decline. First, Sanya is an east-end downtown neighbourhood known for the density of marginalized day-laborers during the high growth era. Second, Tama Newtown is Japan's largest suburban public housing estate built to accommodate post-war population growth in Tokyo. These two neighbourhoods were once crucial to sustaining Tokyo's rapid economic growth, and yet now they confront neighbourhood decline through government-led and market-driven revitalization initiatives.

Drawing on semi-structured interviews, document analysis and participant observation, this paper reveals that dominant narratives of decline are reproduced among revitalization planners and the media in a way that fails to analyze structural forces and public policy choices that have led to neighbourhood decline and residential segregation by age and income. Rather, neighbourhood decline is regarded as a natural outcome from the obsolescence of the social functions that these neighbourhoods performed in sustaining rapid economic growth (i.e. the day labour market and mass-produced housing for a growing number of urban workers). I argue that this blind spot in revitalization planning could risk naturalizing and even intensifying exclusion and displacement pressures that vulnerable tenants already face. Based on these analyses, I intend to examine possibilities for equitable development in the face of decline. In particular, Tokyo's experience illuminates lessons and challenges in responding to political and physical legacies of the high-growth period in the wake of radical demographic changes, which offer insights for other cities facing similar socio-spatial and economic transformations.

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Key Words: neighbourhood decline, urban shrinkage, revitalization, post-growth, Tokyo

FOLDING A FLOOD AND PUTTING IT IN A DRAWER? ANALYSING URBAN PLANNING, DISPLACEMENT AND INEQUALITY IN DHAKA, BANGLADESH
Abstract ID: 883
Abstract within Pre-Organized Session 157

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This paper draws on extensive field work on urban planning and governance in Dhaka Bangladesh to discuss the city's chief natural hazard: flooding and drainage. It asks: how do Dhaka's two municipal governments and national state agencies plan and manage urban flooding? Further, what are the relations of power shaping urban flood and drainage management in Dhaka? It argues that although flooding and drainage are cited by policymakers as two key salient factors shaping present-day governance in Dhaka, the fundamental driving factor behind urban planning in Bangladesh remains market-based development by means of foreign capital investment and real estate speculation. As a result of the prioritization of economic growth, sustainable flood and drainage management are discursively 'pulled in and out of the drawer' when valuable for discursive purposes yet are materially undermined. As a result, governance actors benefit from appearing to value environmental sustainability, while the effects of inadequate physical protection from flooding are disproportionately felt by marginalized groups along class-based and ethnic lines in Dhaka.

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Key Words: Land, Urban Development, Flooding, Drainage, Dhaka

TRACK 7 – ROUNDTABLES

DISASTROUS DIVISIONS: THE NEED FOR A SOCIO-ECOLOGICAL PLANNING APPROACH TO AMELIORATE URBAN VULNERABILITY
Abstract ID: 1041
Roundtable

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In an era of justifiably heightened anxiety about environmental catastrophes and ecological resilience, the removal of marginalized populations premised on environmental degradation, resource consumption, or disaster risk is fairly prominent. Removing 'informal settlements' housing the poor were justified as a way to protect fragile ecosystems—floodplain protection in Delhi (Bhan 2009), ecosystem protection in São Paulo (Millington 2018), disaster risk management in Manila (Alvarez & Cardenas 2019)—or protect scarce natural resources, as in the case of Mumbai, where the state resorted to revanchism to deal with water 'pilferage', overlooking a stratified water supply that forced the urban poor to pilfer (Graham et al. 2014). Such a separation of *social* and *ecological* has exacerbated vulnerability, be it in Mumbai, or São Paulo, where the one-dimensional definition of 'risk' as purely ecological (sanitation, flooding) rather than also socio-economic (subsidized housing deficit or livelihood prospects) resulted in the failure of these plans. Even when the social and ecological seem intertwined—Delhi and Manila's court-ordered evictions—it is a social construct—like "nuisance" (Ghertner 2015) and "danger zone"—that is given ecological meaning by experts and powerful stakeholders, without any ecological evidence (Syal 2019).

Planning is a dominant factor in the siting of marginalized populations in precarious environments in the first place. Bullard (1990) cataloged the siting of incinerators, landfills, and pollutive and extractive industries in Black communities in the American South, while predominantly minority neighbourhoods in LA are still embroiled in battles against oil and gas drilling in their communities (Srebotnjak & Rotkin-Ellman 2014). Planners in Kolkata and Mumbai used eco-sensitive plans towards cynical ends, deploying urban resilience plans to secure national/international legitimacy *and* resources, while in reality pursuing a growth model of urbanization that destroyed both ecological zones and urban poor settlements (Weinstein et al. 2019).

Lack of integration of social and ecological aspects has increased vulnerability of the urban marginalized. The delinking happens in varied ways—one-dimensional conceptualization of risk as ecological (São Paulo), institutionalized exclusion in water supply that compelled the poor to procure water through "water mafia" and "illegal connections" (Mumbai), state or expert co-optation of environmental concepts to declare causality between ecological conditions and human activity without actually analyzing *human-environment interactions* (Delhi, Manila). Unlike urban political ecologists pushing past human/environment dualism (Heynen et al. ed. 2006; Graham & McFarlane ed. 2014), the planning profession—despite its normative bent and focus on practice and centuries-old debates on sustainability, inequity, and environmental justice—hasn't yet systematically adopted *integrated* social-ecological analyses. This limitation in planning practice will have significant repercussions in the context of rapid urban population increase, growing land/resource scarcity, and extreme climate vulnerability.

How do specific 'instruments' like plans, policies, legislations, interventions, or programs aimed at improving environmental outcomes exacerbate the social, economic, or ecological vulnerability of marginalized populations? Panelists examine these issues using their research, which ranges from precariously-located informal settlements in Asian cities to environmental gentrification in U.S. cities, from sanitation behaviors to household disaster recovery efforts.

How do we develop a socio-ecological approach to planning, to better address vulnerability of the urban poor? Panelists identify the socio-ecological challenge—flooding to sanitation—they tackle, their scale(s) of analysis, combinations of quantitative and qualitative methods, and theoretical frameworks (from vulnerability indicators to systems analysis) for integrated analysis. Drawing from these cases, methods, and frameworks, we consolidate approaches to better examine human-environment relationships at one/multiple scales of interaction (individuals, collectives, institutions), and better align social, economic, ecological goals of planning interventions.

note: We define vulnerability broadly, as an individual/group's structurally diminished capacity to anticipate, cope with, or resist and recover from the impact of a natural/man-made hazard. By socio-ecological, we mean the bio-geo-physical unit and its associated social actors and institutions.

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Key Words: human-environment relationships, integrated analysis, (social/economic/ecological) vulnerability, socio-ecological system

EXAMINING THE IMPACT OF IN-SITU INFRASTRUCTURAL UPGRADING ON SUSTAINABILITY IN INFORMAL SETTLEMENTS: THE CASE OF ACCRA, GHANA
Abstract ID: 46
Individual Paper Submission

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Approximately one billion people live in urban slum conditions today, primarily in informal settlements. Providing basic services and improving quality of life in these settlements is a growing challenge that policymakers, researchers, and developers must address. However, more research is needed to understand the impact of past infrastructural interventions because this experience will contribute to the formation of future practices; moreover, the specific objectives will be exploring what critical improvements were and how they have affected the settlements. Aside from settlement eradication, an in-situ upgrading approach, which entails providing local services and infrastructure to informal settlements, has been advocated by many researchers over relocation or resettlement. The outcomes derived from this approach, however, are still understudied making it a substantial gap in the research.

This research elaborates on the impact of in-situ infrastructure provision and how this approach has adaptively responded to the trend of informal urbanization, especially by exploring the occurrence of "self-help" efforts led by neighborhoods. The site of investigation, Accra, Ghana, is a city with a significant informal economy, difficulty in enforcing laws, and dysfunctionality of spatial planning. The city now employs in-situ upgrading to help its underserved areas catch up; it therefore provides a helpful case study. In asking what the impact of in-situ infrastructural upgrading is on informal settlements, this research adopted a mixed-methods approach to conduct both quantitative and qualitative investigations.

First, the research investigates how sustainability performance of informal settlements is correlated with different phases of infrastructural interventions based upon a quantitative lens. It examines the sustainability performance of Accra New Town, Shukura, and Madina-Zongo, three informal settlements that have experienced in-situ upgrading in a typical fashion (often granted with land tenure, provided with public taps for fetching water, and connected to the electrical grid based upon individual households). Through a household survey approach, the research quantitatively reveals the correlations between sustainability performance (including social cohesion and the general satisfaction of residents with different infrastructure service) and their contemporary infrastructure conditions. Secondly, finding that one universal challenge to these informal settlements is the drainage system, the research focuses further on one mega drainage project, the Nima Drain, asking how its implementation has affected the households. The research employs in-depth interviews with community representatives, spatial planning officials, and adjacent residents to interpret the origin, political movement, process of implementation, and impact of Nima Drain on Accra New Town.

The preliminary findings indicate that the perception of and satisfaction level of infrastructural interventions are varied not only because of different locations and stakeholders (involving informal dwellers, local opinion leaders, and local officials), but also due to the comprehensiveness of interventions, the fulfillment of maintenance and repair, and the timely upgrades of infrastructure and services for settlement expansion. "Self-help", or smaller, supplemental drains built by residents that connect houses off the primary infrastructure to the drain, have been catalyzed by the Nima Drain Project. The introduction of this mega project has promptly improved its waterfront interface for pedestrians while arousing many life-changing experiences in the neighborhood, such as redesigning their building frontage toward the drain for businesses. In sum, the approach of in-situ upgrading is fundamental to Accra, Ghana as it represents as not only a basic guide to urban development, but an opportunity to the existing households for "bottom up" responses, which have both benefited the neighborhoods for their common goods and shaped the settlements as they stand today.

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Key Words: Informal Settlement, Accra, Sustainable Urbanism, In-situ Upgrading, Infrastructural Intervention

THE FISCAL EFFECTS OF VENEZUELAN IMMIGRATION TO COLOMBIA
Abstract ID: 77
Individual Paper Submission

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The effect of immigration on public finances is an important issue on the public opinion. A majority of natives sees immigration as a burden for the economy. Part of these concerns are based on the belief that immigration is a drain on the public budget. We investigate the fiscal impact of Venezuelan immigration on the Colombian economy from 2013 to 2018 using an accounting approach. In other words, we estimated the difference between the taxes and other contributions migrants make to public finances and the costs of the public benefits and services they receive. This paper contributes to the existing literature twofold. First, by studying a large, sudden, and unanticipated variation in immigrant inflows in the context of a developing country with large regularization policies for immigrants. Second, by disaggregating the effects on public finances at the local level. Our findings indicate that immigrants are on average less costly in fiscal terms relative to the native-born population. In addition, immigrants tend to have less access to, and make lower use of, the different public services. At the same time, the net fiscal cost decreases with skill level and labor market participation. When assigning expenditures for services such as education and health care on a pro rata basis—as the total cost of provision is roughly proportional to the number of recipients, and using the marginal cost of provision on congestible and "pure" public goods, the ratio of fiscal burden by immigrants to natives' decreases. Now, the fiscal impact of immigration at the local level is lower than at the National level, suggesting a higher dependence on central government's transfers and lower consumption of local public goods.

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Key Words: fiscal impact, immigration, developing country

VERTICAL AND FRAGMENTED URBAN GOVERNANCE: A STUDY OF SOME OF MEXICO'S LARGEST METROPOLITAN REGIONS

Abstract ID: 377
Individual Paper Submission

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Despite decentralization efforts in Mexico during the late 20th century, federal and state-level policy has continued to supersede local governance. Most local governments in the country have limited financial and institutional capacities and are seldom able to guide, for instance, urban development processes, which tend to be particularly problematic in metropolitan areas comprising multiple municipalities. Following mass housing development along the peri-urban fringes of many Mexican cities in the 2000s, the previous federal administration (2012-2018) implemented densification strategies, including Urban Growth Boundaries (UGBs) along 394 Mexican cities or towns with over 15,000 inhabitants – including 74 metropolitan areas. This research analyzes the implementation of UGBs in metropolitan areas given their increasing importance and complexity, both nationally and internationally. In Mexico, they have not only grown in number, but perhaps more importantly, they have experienced considerable territorial expansion over the last several decades. Yet, since UGBs were not implemented locally, but rather imposed on cities, this research seeks to analyze the influence of local (public and private) stakeholders, and their experience with this federally mandated urban and metropolitan development policy in terms of how suitable and effective they have perceived it to be. This paper also sheds light on some of the local implications of this densification policy.

The focus of this research is on the 14 largest Mexican metropolitan regions with between 1 and 5 million inhabitants. This study did not include Mexico City in its analysis because it is a case of extreme metropolitan fragmentation that requires its own separate analysis. This paper will begin by presenting a comparative analysis of the population and urban growth trends of all the metros in the last decade, and then move on to a discussion of findings drawing primarily from the responses of local and state planning officials and housing construction chambers in the 14 metros to a semi-structured survey (with quantitative and qualitative questions). These surveys have meant to assess the effectiveness of these boundaries in halting sprawl, promoting sustainable development and affordable housing, guiding urban planning, facilitating institutional coordination, and understanding who has had the most influence in the drawing and implementation of these boundaries. Such semi-structured surveys have been conducted via email or by phone and represent the official or institutional vision of the public offices and the state chambers surveyed. Twenty-two interviewees participated from 12 of the 14 metros. Seven represent local planning offices, 9 represent regional or state-level planning or urban development ministries, and 6 represent state/regional construction chambers.

One of the overarching conclusions of this study is that while the federal rhetorical shift towards promoting densification and compact and connected development may have incentivized some local governments to better guide their urban growth and development, the top-down nature of these new policies and the lack of local consultation to implement the UGBs exposes the political and administrative centralization that is still prevalent in Mexico, as well as the extent to which federal and state-level policies continue to overshadow local administrative and fiscal capacities. On the other hand, local governments have also been very slow at innovating fiscal, regulatory and land use mechanisms to improve their finances and capacities, and to adequately manage matters such as urban development. Furthermore, given initial opposition from private developers, the boundaries shifted in subsequent years, thus continuing to privilege development interests above the production of affordable housing and a more effective strategy to guide development patterns.

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Key Words: urban governance, metropolitan areas, Urban Growth Boundaries, Mexico

HOW URBAN PLANNERS RESIST POLITICAL PRESSURES IN A DEVELOPING DEMOCRACY: A CASE STUDY OF GHANA

Abstract ID: 378
Individual Paper Submission

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In developing democracies, urban expansion is often driven by informal political relationships through which urban residents access land and services, resulting in widespread informal growth. As political power is often predicated on the delivery of strategically targeted patronage, politicians have a disincentive against supporting the implementation of formal planning interventions or regulations which would threaten their established patron-client relationships. As a result, local public-sector planners in such environments often face political pressure to selectively ignore or penalize violations of land use and building regulations in ways that align with the prevailing local political agenda. At times this can help the urban poor in informal settlements avoid evictions and demolitions, but it also limits the possibilities for equitable and sustainable long-term urban planning. In many cases, politicians have enough influence that planners fear that their careers will suffer if they openly resist this political pressure.

How can planning practice adapt itself to this kind of political environment? In order to understand this, it is important to observe what planners are already doing to quietly circumvent these pressures. This paper studies the case of Ghana, a lower-middle-income West African democracy whose politics are dominated by competitive clientelism (Paller, 2019). While planners in Ghana face the political pressures described above (Cobbinah and Darkwah, 2017), interviews with local planners and others reveal that they also sometimes use strategies to resist, including appealing to professional bodies or more politically insulated colleagues in local government for help, involving the media, and using public participation, or the threat of it, as a means of subtly pushing back on politicians. These strategies are only occasionally or partially successful at present, but they point the way towards planning reform that can build on these strategies.

This approach, of unearthing and building on hidden local successes, is likelier to yield practical, context-appropriate lessons for planners than importing "best practices" from elsewhere. It adds to the growing literature which aims to "see from the South" (Watson, 2009) and build urban theory for the global South from the ground up, rather than (mis)applying Northern theory to the South or focusing exclusively on transnational forces acting on Southern cities. The findings and arguments in this paper are likely to be relevant to planning scholarship in other urbanizing clientelistic democracies, e.g. India (de Wit, 2017), Bangladesh (Hackenbroch and Hossain, 2012).

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Key Words: Politics, clientelism, Ghana, informality, global South

THE RIGHT TO MEMORY: HOW CAN HISTORIC URBAN LANDSCAPES BENEFIT INFORMAL SETTLEMENTS?

Abstract ID: 382
Individual Paper Submission

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Urban development of Global South countries in the 21st century has been taking place within a context of neoliberal and fast-paced growth that leaves urban landscapes vulnerable to radical changes in the urban fabric. Informal communities are particularly vulnerable to those changes due to real estate speculation and exclusionary practices driven solely by economic tradeoffs (Chiu, 2003). One of the key issues behind informality is tenure security and how to protect communities against gentrification or to forced eviction due to authoritarian urban interventions (Durand-Lasserve, 2006). Thus, this paper advocates for the rights of informal communities to develop over time and maintain a collective memory. These communities are often a product of historic and organic growth and their constructions reflect unique local values and social dynamics (Rapoport, 1988).

The paper presents a theoretical framework that applies the Historic Urban Landscape (HUL) denomination introduced by UNESCO to protect the 'right to memory' of informal communities. The HUL introduced the importance of safeguarding historic urban areas for their values and cultural significance, not just as a built artifact, which shows a shift in heritage conservation practices. The recommendation seeks to support the productive and sustainable use of urban environments in ways that also respect the wide range of social conditions and activities found (UNESCO, 2010). The framework shows how those HUL goals also converge with the United Nations guidelines for sustainable urban development and with the preservation and management of informal settlements. It presents three standpoints to which the preservation of informal housing can contribute to:

1. The sustainability standpoint: Informal settlement policies can have drastic repercussions to sustainability goals;
2. The architecture standpoint: Informal settlements are vernacular environments with specific built, cultural and social characteristics that could be preserved and improved;
3. The heritage approach: Informal settlements have memory and value to society.

The paper concludes with a case study for the favela of Mucuripe in Brazil, which is one of the oldest settlements in the city of Fortaleza and has undergone severe changes brought by development efforts to host the Fifa World Cup. It presents the HUL as an international denomination with a strong backbone that can be aligned with urban planning tools to support local grassroots actions to preserve urban memory and informal communities.

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Key Words: Historic Urban Landscapes, Informal Settlements, Sustainable Development, Preservation, Cultural Heritage

ACCRA'S OLD FADAMA/AGBOGBLOSHIE SETTLEMENT. TO WHAT EXTENT IS THIS SLUM SUSTAINABLE?
Abstract ID: 430
Individual Paper Submission

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Slum conditions associated with squatter settlements pose major challenges in African cities. The existence of slums is a result of rapid rural-to-urban migration, increasing urban poverty and inequality, insecure tenure and globalization. In the city of Accra, Ghana, municipal officials traditionally addressed squatter settlements through demolition and evictions. In spite of these evictions, Old Fadama/Agbogbloshie, an illegal squatter settlement in Accra, continues to flourish. From a planning perspective, Old Fadama demonstrates some aspects of sustainable development from physical, economic and social dimensions. The slum features proximity to the CBD for business and employment opportunities; this includes an informal economy that interfaces with various formal industries, firms and agents from local to international scales. Compact and higher density residential development provides affordable housing with access to the transport system connecting with other parts of the city. Further, a culture of decision making occurs within Old Fadama at the informal level between tribal leaders, opinion leaders, religious leaders and followers of the community filling a void in community development. Within the context of sustainable principles, this study explores why this slum became embedded. Results are based on a survey of 100 slum residents, 20 city officials and 20 city opinion leaders. Findings suggest that community participation in concert with municipal authorities can potentially lead to slum improvements. Slum improvements can also occur as a form of urban regeneration.

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WHAT DOES DISPLACEMENT LOOK LIKE? CONTEXTUALIZING DISPLACEMENT IN SEOUL, SOUTH KOREA
Abstract ID: 476
Individual Paper Submission

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Despite the ever-expanding definitions and chaotic debates over the concept of gentrification, one factor remains at its core: class-led displacement. Although many gentrification studies hail displacement as a defining feature, there has been a great lack of robust effort to understand in-depth the phenomenon of displacement (Elliot-Cooper et al., 2019), or more specifically the experiences of displaced people and resistance movements that they participate in. In response to such a dearth of empirical studies, this paper uses displacement as the central analytical frame to uncover the impacts of 88' Seoul Olympics. By contextualizing displacement, the paper not only hopes to provide a better understanding of the many different forms and meanings of the process but also uncover the multifaceted impacts of displacement.

Since its first use by the British sociologist Ruth Glass in the 1960s, gentrification has greatly expanded to encompass variations – state-led, new-build, commercial, etc. – that have been identified around the globe. This extended use of gentrification as an analytical tool for understanding urban change has triggered heated debates between those who advocate "gentrification as a global urban strategy" (Smith, 2002), and those who stress a more contextual approach (Ghertner, 2015).

At the core of the debate is the applicability of 'class transition' in the process of urban change. Supporters of a 'global gentrification' paradigm argue that class-led displacement is a defining feature of urban transformations happening in non-Western countries, while opponents argue that different meanings and perceptions of displacement makes it difficult to link class transition with urban change. Without sufficient studies that look into the process and effects of displacement itself, it seems difficult to reach a conclusion.

By systematically analyzing previous works on urban transformations in Korea, the first part of the paper provides a typological analysis on the many different forms of displacement occurring in Korea. Previous English and Korean literature on displacement are robustly analyzed by questioning who the displaced people are, how displacement take place, and what the motivational forces are. Based on such systematic analysis, I modify Marcuse's (1984) framework to offer a typology of displacement that reflects the distinct contexts of Seoul, South Korea.

The second part of the paper examines specifically the development of 88' Seoul Olympics, using the displacement framework derived earlier. The case of the 88' Seoul Olympics was selected due to its large-scale, state-led development approach which triggered massive displacement. By taking on a more context-specific examination, the second part of the paper reveals how different forms of displacement arise simultaneously and sequentially. Also, by consulting newspapers and public records, the experience of displacement is closely examined. The analysis provides a more nuanced understanding of displacement, leading to a contextualized conceptualization of the phenomenon. The paper not only offers better insights to understanding displacement, but also intends to contribute to the wider discussion of gentrification.

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Key Words: Displacement, Gentrification, Olympics, South Korea, East Asia

BRIDGING INSTITUTIONAL CHANGE AND SOCIAL LEARNING FOR TRANSFORMATIVE CLIMATE ADAPTATION: THE CASE OF DAR ES SALAAM
Abstract ID: 482
Individual Paper Submission

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This paper bridges theories of institutional change and social learning by examining efforts by local government, NGOs, and development organizations to build adaptive capacity and climate resilience in Dar es Salaam. Both theories suggest that more complex and diverse governance arrangements, in terms of the mix of organizational types composing them, have more adaptive capacity. Institutions are the formal and informal rules that guide behavior and shape possibilities. Formal institutions are often regulated through governance structures. Some scholars suggest that in order to encourage transformative change to institutions, climate adaptation planning should include designed changes to the structure of governance, such as the creation of new sustainability agencies that can coordinate actions across the whole of government. Despite a low endogenous capacity, many Southern cities, like Dar es Salaam, have been first actors in adaptation planning due in part to high risks of inaction and low institutional inertia (Carmin, Anguelovski, and Roberts 2012).

Climate adaptation planning involves interactions between multiple actor groups, including scientific experts, laypersons, politicians, and bureaucrats. Interactions across organizations and agencies involved in adaptation planning can change their relationships and lead to institutional change and social learning. Studying these interactions in practice presents an opportunity to understand the enabling factors for different types of learning and institutional change. Social learning theorists identify three learning loops (Pahl-Wostl 2009). The third learning loop in the context of climate adaptation corresponds to transformative change to the structures that cause of vulnerability.

Some projects in Dar es Salaam are trying to change institutions concerning data and information services, technical capacity and access to funding, platforms for coordination, and fostering cooperation. This research examines these projects to understand what factors enable structure changes to governance. What endogenous and exogenous factors enable institutional changes in urban governance? Can multi-level learning theories explain changes in the structure of governance? How does the structure of urban governance in Dar es Salaam contribute to urban resilience, adaptive capacity, and disaster risk management?

The structure of governance can be measured using network analysis, and structural change can be measured through the emergence of new actors and groups, shifting power dynamics among existing actors, and new regulations that define the network (Berthod, Grothe-Hammer, and Sydow 2017). A novel network data set allows quantitative and qualitative analysis of the relationships between influential figures in the governance structure. After presenting the network structure, the paper draws on semi-

structured interviews and social network analysis to describe how network structure enables and limits coordination and learning to take place among governance actors.

Preliminary results show that the power to approve informal land transactions is held by local bureaucrats and community leaders at the subward (Mtaa) and neighborhood (Shina) levels, while incentives to pursue resilience in the city are directed toward Wards and Municipalities. Hierarchical structure of government is clearly visible in the network, as well as a non-hierarchical constellation of NGOs and international development organizations. Future research will follow learning outcomes of two ongoing resilience initiatives that utilize community-based data collection. One initiative involves flood modeling experts and a broad urban growth coalition to design a green infrastructure project in the central valley of the city. The other initiative involves local NGOs, community mappers, and Mtaa representatives in Ward-level emergency management planning. Initial observations suggest that multi-level learning occurred between organizations, while only single-level learning occurred within organizations.

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Key Words: Climate change adaptation, Network ethnography, Policy emergence, Organizational learning

REDEVELOPMENT AS A TECHNOLOGY OF SOCIAL CONTROL ----REDEVELOPING URBAN VILLAGES IN CHENGDU, CHINA
Abstract ID: 507
Individual Paper Submission

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Urban villages in the peripheries of Chinese cities have been considered essential for providing rent revenue for the villagers and affordable housing for the migrants. This article discusses the process of the redevelopment of urban villages within the case of Chengdu. Developing urban villages in Chengdu's Jiniu district is part of the Beigai (Redeveloping North Chengdu) project that aims at redeveloping dilapidated urban areas including four clusters of urban villages. The several urban villages in Jinniu district are recently demolished one after another since around 2010, according to the agreement between the local government and village collectives, displaced villagers are compensated by receiving 40 square meters apartment housing per capita in the resettlement housing communities that are built in situ and a monthly stipend during transitory time that spans around two years. The resettlement housing communities are built after the typical model of xiaoqu, similar to the style of gated communities. As most families have received more housing floor space than they can use, some of the families received multiple small to medium sized apartments, the villagers in the three resettlement housing communities now continue to rent their apartments or rooms to migrant workers and receive similar or improved revenue from rent.

The urban entrepreneurialism thesis has suggested that the redevelopment of urban villages facilitates land appropriation for real estate development and contributes to the "demolition and displacement economy", which creates demand for commodity housing consumption. However, in Chengdu's case, villagers are offered in situ resettlement housing as compensation, therefore demand for commodity

housing is not generated, and the vacant land that is produced by displacing villagers remains vacant rather than undergo transaction to developers. Without totally rejecting urban entrepreneurialism thesis, I argue that in some cases like Chengdu the redevelopment of urban villages is primarily a scheme of social control. Both the villager landlords and the migrant tenants are perceived as the impoverished and potentially dangerous Other. The resettlement housing communities are offered as both a benevolent policy to compensate and benefit the villagers, and the same time to put villagers and migrants in an enclosed place where surveillance and control of mobility is easily placed. Following James Holston (2009)'s argument that homeownership is a way of social control, this article explores how the resettlement housing community as a certain type of homeownership serves as a technology of social control in Chinese context. Firstly, the enclosed and gated physical environment of the communities obstructs the mobility of migrant workers, the high rises have weakened previous social relations between villagers, and the village collectives that enjoyed some degree of autonomy and organized collective resistance to redevelopment schemes are dissolved by dividing the member villagers to different housing communities. Moreover, social control and surveillance has been placed by a sophisticated system of "grid management": "gird managers" who work in the residents' committee constantly patrol the public places of the resettlement housing communities, and several resident volunteers are each in charge of one building and report back to the resident committees any abnormal situations from difficulties face certain residents, hygiene issues, to suspicious and criminal activities. Migrants are often the ultimate targets of the system of "grid management".

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Key Words: Urban village, urban redevelopment, social control, gated community, migrant workers, China

POST-NEOLIBERAL PLANNING IN CHINA? SOLUTIONS TO OVERBUILDING IN ORDOS CITY
Abstract ID: 512
Individual Paper Submission

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Overbuilding has been a widespread phenomenon in 21st century China, which engenders adverse socioeconomic and environmental ramifications (He et al., 2016). Despite the burgeoning effort to decipher the causes of China's overbuilding, few studies have explored how planning reacts to and resolves this detrimental phenomenon. On the other hand, the 2008 global financial crisis has popularized the discussions of "post-neoliberalism", which refers to regimes that depart from the hegemonic neoliberal regime, and "on-the-ground" governing practices and policies aiming to combat neoliberal governance (Peck et al., 2010; Yates & Bakker, 2014). However, few discussions on post-neoliberalism have been devoted to China.

This study strives to fill the abovementioned gaps. Under the conceptual framework of post-neoliberal planning, which is inspired by the notion of post-neoliberal governance (Yates & Bakker, 2014), this

study explores how planning practices resolve overbuilding in Ordos City, China. As a mid-sized inland Chinese city with abundant natural resources, Ordos has attracted tremendous attention for its unprecedented overbuilding and real estate boom-bust cycle in the 21st century. Although studies have investigated the causes of the spectacular overbuilding in Ordos, few have probed the reactions of local planning practices in relation to this disastrous phenomenon.

By employing qualitative research methods including in-depth, semi-structured interviews and document analysis, this study yields several key findings. First, there is a transformation from an extreme pro-growth and deregulated mode of planning in the real estate boom period to a more rigorous and socio-environmentally inclusive approach to planning in Ordos City since the burst of the real estate bubble in late 2011. To resolve overbuilding, the Municipal Government of Ordos (MGO) revised its pro-growth Urban Master Plan in 2015 to a more rational and socio-environmentally inclusive one. The MGO has also proactively initiated welfare- and redistribution-oriented plans such as the "Housing Exchange Program" that allows homeowners of dilapidated houses in urban areas to exchange their shabby dwellings for unsold new apartments (purchased by the MGO from developers at below-market prices) for free, which has simultaneously promoted housing conditions and affordability for many medium- and low-income households, reduced the vacancy rate, and alleviated the financial pressures of many developers facing bankruptcy. Second, although curtailed, market-friendly and growth-chasing planning practices were still actively adopted by the MGO to boost economic development and resolve overbuilding, including place marketing and branding (e.g., hosting mega-events), deregulation and preferential policies for investors (e.g., tax and fees exemption/deduction and subsidies), and active state planning to foster the tertiary sector such as innovation and tourism. Empirical findings indicate that although a complete departure from a neoliberal planning modality has not been realized in Ordos City's post-crisis period given the intensified inter-city competition and the requirement for growth under the entrenched and hegemonic market rule, neoliberal planning practices have been restrained through rigorous governance and welfare- and redistribution-oriented plans under the timely and strong state intervention. This study verifies the resilience of neoliberal governing practices in post-crisis period (see Brenner et al., 2012). It also adds empirical insights to the global policy repertoires in tackling overbuilding and neoliberalism (e.g., Kitchin et al., 2012). Finally, it argues that strong state capacity can be a double-edged sword in promoting and constraining neoliberalism, calling for rigorous and effective governance.

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Key Words: Post-neoliberal planning, Post-neoliberalism, Overbuilding, China, Ordos City

TITLE: OUT OF SIGHT, OUT OF MIND: THE CHALLENGE OF ENSURING EQUITABLE ACCESS TO URBAN SANITATION
Abstract ID: 566
Individual Paper Submission

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In the context of rapid urban population growth and an uncertain climate future, it will be increasingly challenging for cities in the global South to keep pace with demand for water as well as sanitation services. In the dramatic context of a narrowly avoided "day zero" in Cape Town, South Africa—where there was expected to be no water in the pipes—the challenge of providing urban water access has received global attention. In comparison, the international community has largely ignored how households are handling their sanitation (particularly the disposal of human waste). According to SDG target 6.2, everyone is entitled to access to adequate and equitable sanitation by 2030. Global monitoring efforts, however, have resulted in an underestimation of the urban sanitation crisis and the risks to public health, the economy, and the environment. How can cities in the global South ensure access to safe, reliable, and affordable disposal of human waste?

In the absence of reliable and comparable city-level data, a new data set was compiled based on existing secondary data and new data from 15 cities located in Sub-Saharan Africa, South Asia, and Latin America. The 15 cities are Kampala, Uganda; Lagos, Nigeria; Maputo, Mozambique; Mzuzu, Malawi; Nairobi, Kenya; Bengaluru, India; Colombo, Sri Lanka; Dhaka, Bangladesh; Karachi, Pakistan; Mumbai, India; Caracas, Venezuela; Cochabamba, Bolivia; Rio de Janeiro, Brazil; São Paulo, Brazil; and Santiago de Cali, Colombia. Data were obtained from publicly available data sets, administrative records, websites, project documents, and key informant interviews. City-level data was augmented with fieldwork in one informal settlement in each city.

New analysis of 15 cities in the global South shows that on average, 62 percent of sewage and fecal sludge is unsafely managed somewhere along the sanitation service chain. Despite resistance from vociferous environmental lobby, water borne sewers are convenient, safe, sanitary, and work well in dense urban environments. The data also demonstrate that from the perspective of the household, sewer connections and services are often less expensive than on-site sanitation options. The paper concludes that in the absence of universal access to sewers, cities need to find an optimal combination of off-site and on-site sanitation options. On-site sanitation systems place enormous responsibility on households and private providers, and thus require strong government capacity to regulate and enforce sanitation standards to ensure public health and safety. Citywide upgrading of informal settlements can improve low-income households' access to urban sanitation.

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Key Words: planning, sanitation, infrastructure, fecal sludge, global South

FROM CAMPS TO THE CITY: URBAN REFUGEES AND THE SHIFTING POLICIES OF INTEGRATION THE CASE STUDY OF BEIRUT, LEBANON
Abstract ID: 588
Individual Paper Submission

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The world today faces a refugee crisis of unprecedented proportions, with over 70 million displaced people representing the severest the crisis has been since World War II. During the last decade, the Syrian civil war alone displaced millions to neighboring Lebanon, Jordan and Turkey. While any mention of refugees usually invokes images of long rows of tents in camps, more than half of the world population of refugees today self-settle in urban areas, giving rise to the newly acknowledged concept of urban refugees. As conditions become more protracted, and the apparatus of global governance rallies to update legal frameworks, political agendas, policy guidelines and aid delivery mechanisms to manage this new urban reality, the question of refugee integration has come to the fore.

What is meant by refugee integration? Scholarship on integration shows the capaciousness of the term: integration can be economic, social, spatial, cultural and political, in many permutations. The question of who is involved in integration is loosely defined, although the literature tends to include host communities and migrants, local, national, and international governments, civil society, and nongovernmental organizations (Crisp, 2004; Jacobsen, 2001). While the legal term "local integration" has long been considered one of the three durable solutions - along with repatriation and resettlement (Hovil, 2014) - the concept of integration remains significant both as a stated policy goal and as a targeted outcome for projects working with refugees (Ager and Strang, 2008).

The research operates on two levels. The primary aim of the research is to investigate how policies for refugee integration were shaped at the global level. What are the various origins, conceptualizations and intents behind "refugee integration" policies and what is the relevance to planning scholarship and practice? The 2015 European refugee crisis was a pivotal point in reshaping global refugee policy. In 2016, the UN General Assembly unanimously adopted the New York Declaration for Refugees and Migrants. Member States agreed to a shared international responsibility of managing crises of displacement, paving the way for the adoption of the first Global Compact on Refugees in 2018. This section of the research argues that this shift discouraged the camp and encouraged thinking of integrating the displaced into the processes of urban production.

The secondary aim of the research looks for concrete and qualitative actions on behalf of relief agencies, civic societies, and host communities in aiding – or hindering – refugee integration in the case of Beirut, Lebanon. How is integration defined in the field, measured and evaluated? Within the shifting framework from refugee "management" in camps to "integration" in urban host communities, the research looks to the refugee population that fled Syria to Lebanon between 2013-2019 and settled in high-poverty peripheral neighborhoods contouring the capital Beirut. This section of the research examines the challenges of how this vulnerable population negotiates access to housing, tenure and employment in a city that is not always welcoming, and questions whether there are qualitative actions that could be highlighted and transferred to other contexts.

Finally, the essay aims to provide critical insights for those thinking about how to re-tool institutional and scholarly responses to refugee issues and to forced migration more broadly.

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Key Words: Urban Refugees, Integration, Displacement, Forced Migration

KEEPING MAYORS IN LINE? FINANCIALIZATION, PPPS, AND THE POLITICS OF URBAN WATER AND SANITATION PROVISION IN BRAZIL
Abstract ID: 590
Individual Paper Submission

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Despite all the ink spilled in the last three decades over the merits and demerits of private participation in the provision of public infrastructure services (Trebilcock and Rosenstock, 2015), we still have a poor understanding of what shapes the behavior and strategies of private actors engaged in urban infrastructure provision in developing countries over time. Existing literature tends to explain what attracts the "private sector" and what shapes its behavior in terms of either institutional incentives (Guasch et al., 2014)—the dominant political economy and policy lens—or of processes of capitalist development—the more critical view (Swyngedouw, 2005). But both perspectives remain handicapped by a generic and essentializing treatment of private participation that precludes the exploration of how private capital is variously organized—and, ultimately, of how this heterogeneity matters for service provision. In contrast, this paper aims to open the "private sector" black box to examine the role of business ownership and organization in shaping the political behavior of private infrastructure providers and their participation in public-private arrangements for service delivery.

Specifically, I explore variation in business organization in the context of what has been described as the "financialization of urban infrastructure," or the increasing role of the financial industry in the financing and governance of urban infrastructure assets and services (O'Brien and Pike, 2017; Torrance, 2008). While financialization may occur through various vehicles, I concentrate on the acquisition of ownership stakes in infrastructure service utilities by financial actors such as private equity firms and institutional investors—what I call "financialized ownership." Focusing on the Brazilian water and sanitation market, I draw on economic and sociological theories of the firm, studies of business politics, and the anthropology of finance to develop an interdisciplinary framework for explaining how changes in ownership affect private operators' political strategies and relations to local governments. I examine this question through qualitative, field-based comparative case studies of the five largest private water and sanitation providers in Brazil. These are holding companies that own private subsidiaries across the country. While they used to share a common DNA—ownership and control by family-owned, domestic business groups specialized in construction—three of them have recently transitioned to financialized modes of ownership, providing an opportunity to explore changes to business organization and strategy both temporally and across firms operating in the same macro institutional environment.

Through historical analysis and techniques from organizational ethnography, the paper argues that financialization shifts relations to public partners and the local politics of service provision by reducing operators' local political embeddedness. This occurs through two channels. First, operators with financialized ownership maintain weaker and more formalized ties to local public officials relative to domestic business groups. Second, financialized operators afford less decision-making autonomy to private subsidiaries on the ground. Lower political embeddedness results in less flexibility in handling local political issues and increases the potential for conflictual relations with local governments, posing challenges to the sustainability of public-private collaborative arrangements over time. In Brazil, financialized private water operators have been, to borrow the words from one interviewee, struggling to "keep the mayors in line."

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Key Words: Financialization, Public-private partnerships, Urban politics, Water and sanitation, Brazil

THE ENVIRONMENTAL IMPACTS OF UGANDA'S NEW REFUGEE SETTLEMENTS ON BOTH REFUGEES AND THE HOST COMMUNITY: THE BIDI BIDI CASE
Abstract ID: 652
Individual Paper Submission

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Globally, the number of persons displaced by persecution, violence, or natural disasters is rising. Currently, 70.2 million people are displaced from their homes with a subset of 25.4 million people also displaced from their country. As the number of displaced persons increases, so does the length of their displacement. From 1993 to 2016, the average time spent in asylum in foreign countries increased from 9 to 21 years. According to the United Nation's High Commission for Refugees, the international entity that oversees displacement, approximately forty percent of displaced persons will live in a refugee camps or settlements. With increasing populations and length of time spent in refugee camps, costs are rising and robust solutions for refugees are becoming more challenging.

The Ugandan government's new policy for settling refugees shifts the focus from seeing refugee camps as a humanitarian obligation to an opportunity to expand existing settlements in ways that benefit and integrate both refugees and the host communities by increasing infrastructure and amenities (schools, health clinics, roads, etc.). The general approach targets 30% of the humanitarian aid, programs, and infrastructure to benefit local hosting communities. Additionally, the settlement approach is intended to empower refugees to become "self reliant" where refugees are no longer fully reliant on humanitarian assistance and can begin to provide for themselves (e.g. subsistence agriculture). Theoretically, integration with host communities can provide economic and social benefits that contribute to host nations. However, the integration of new residents can also be coupled with competition for resources (e.g. employment), environmental derogation and strain on existing infrastructure.

The Bidi Bidi refugee settlement, located in North Uganda near the border of South Sudan, was established in 2016 under this new policy and is now believed to be one of the largest refugee camps in the world with approximately 290,000 residents. The author worked in humanitarian aid in South Sudan and Uganda from 2012 to 2018 and in 2019 returned to conduct 15 semi-structured interviews with United Nations High Commissioner for Refugees site planners, Ugandan local and national governmental authorizes and NGO employees. In light of the new policy, this research investigates, 1) the environmental impacts of the new integrated settlement approach, and 2) the role of planning in mitigating these impacts. Based on these interviews, there are three major findings. First, site preparation (settlement pattern and construction) contributed to deforestation. Secondly, insufficient energy sources (firewood) worsened the conditions of the most vulnerable. Lastly, the problematic concept of subsistence farming limits the ability for refugees to achieve self-reliance. These findings suggest lessons for how to blend local and technical knowledge to identify and design suitable places that better meet the needs and mitigate the environmental consequences for both new and existing residents in the spirit of this policy.

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THE ROLE OF THREE CHRISTIAN DENOMINATIONS IN MINORITY COMMUNITY DEVELOPMENT IN ROMANIA: ADDING TO THE DISCOURSE OF YIFTACHEL'S ETHNOCRACY
Abstract ID: 676
Individual Paper Submission

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This study investigates the roles of three Christian denominations in minority [Székely-Hungarian] communities after the collapse of communism in Romania, and through its transition to the European Union. This thirty-year period [1989-2019] was marked by many community destabilizing changes including waves of emigration to Western-Europe, loss of labor, aging, and globalization. In many villages, public institutions were closed, or were integrated into larger units. The Székely-Hungarian ethnic minority perceives the larger national context to be threatening and oppressive. Many of these communities are now predicted to disappear. Against this backdrop, the church has historically played a substantial role in these communities and their fight to 'remain intact' through the reinforcement of ethnic identity.

The planning literature urges to reposition, reintroduce, and reconstitute faith into secular planning approaches (Greed 2020, Schwenkel 2018, Beaumont 2008), but approaches vary by state and by the dominant economical and institutional structures (Davis 2009). The role of faith and religion in scholarly discussions usually focus on a national majority and their respective refugee or immigrant minorities. However, the same issues need to be discussed in the case of minorities who have a historic roots in a region, but find themselves in a modern minority. This is the case with Székely, Palestinian, and other peoples. Behind a 'democratic façade', constant conflicts emerge between the Hungarian minority and the Romanian majority that resonates Yiftachel's theory on ethnocracy (2006). Meanwhile minority groups are also capable of threatening and oppressive behavior towards 'others', such as Hungarians towards the Gypsy.

Planning approaches rooted in democratic and neoliberal principles frequently align with and support the voice of the national majority. Planning in Romania is still an uncharted territory. In Western nations, planning scholarship and practice has a long-established history, and assumes planning to be a democratic process. Democracy in Romania is only three decades old. Planning, and the role of the planner are still developing. Communities do not separate themselves from their own ethnicities, whether they are in the majority or minority. Many communities are still 'closed' and remain unchallenged by recent global changes, such as the migrant crisis, or the influx of foreign labor. Romania was unattractive for migrants and foreign labor up until recently. The lack of labor in agriculture, construction and many other industries is now forcing local business owners to bring in foreign labor. These changes cause local discord among community members due to a general fear and distrust of religious and cultural differences (White-non-White, Muslim-Christian).

This qualitative study used content analysis to systematically review thirty years [1989-2019] of Christian denominational publications, newspaper articles, and other archival sources. We examined (1) the cross-

scale roles (village to region) of denominations, (2) the role of priests at the village level that translates into community and/or spatial aspect changes within the village, such as community building, social capital, and community cohesion. Finally we looked at what (3) bridging activities or processes are present between the church and local formal institutions.

We present the church's engagement over the past three decades and draw conclusions for integrating the work of religious entities into community development planning efforts. We also present the geocoded thematic results, focusing on gender differences and village decline over the three decades.

While many issues are currently in flux, our findings can:

- inform scholars interested in bridging secular-religious collaboration in minority groups by highlighting three decades of religious work by three major regional denominations
- mark where collaborative processes can be initiated between secular and non-secular institutions for promoting local sustainability
- provide insights regarding relations between minority groups, both new and existing
- contribute to the discussion on Yiftachel theorization on ethnocracy

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Key Words: faith, minority, community development, international planning, Christian denominations

CLIMATE ACTION, INFORMAL URBAN PRACTICE, AND THE POLITICS OF INCLUSION: CASE OF BHUBANESWAR CITY, INDIA
Abstract ID: 685
Individual Paper Submission

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In this paper, we attempt to bridge the gap between climate resilience thinking and planning practice in the context of Indian cities. We aim to offer valuable insights into the complex relations between local urban politics and urban planning and governance of informal settlements in the context of climate resilience actions. Southern cities are now increasingly conscious of integrating climate resilience policies with existing urban development plans; yet studies have observed that informal settlements continue to be ignored and excluded from the process, making inclusive and equitable re-imaginations of urban spaces more challenging in the long term (Chu, 2015). In the context of India, many municipal and state governments have a key challenge of maintaining environmental sustainability and social equity, while facing complex path dependencies of urban planning and development in the face of climate change.

State Climate Action Plans in India play a critical role in the materialization of climate resilience policies in urban areas through multi-level governance frameworks. However, most discourses on urban climate resilience assume largely formal institutional structures in cities, ignoring the realities of many Indian

cities that are rooted in informal urbanization patterns as well as local decision making. In the absence of this recognition, many urban initiatives continue the old inertia of profoundly disregarding citizen participation; and are not inclusive of informality, both as a process and context (Bhan, 2009, Bahadur & Tanner, 2014; Roy, 2009).

We contend that the application of resilience initiatives in its current form, without accommodating the aforementioned realities in Indian cities is problematic. Through a detailed single case study approach, we theorize the planning process within the context of entanglement of resilience theory and informality-driven planning practice in the provincial capital city of Bhubaneswar in India, which is rapidly transitioning from a temple town to a large contemporary urban center. The guiding research question is how do informal urban communities negotiate the climate resilience plans and actions in the city?

We employ a qualitative methodological framework that draws on participant observation, discourse and document analysis, and semi-structured interviews of city residents of informal settlements (such as slums), professional city planners, elected political leaders, municipal officials, academicians, and local non-governmental organizations at local, state and national level. We employ the Dispositive analysis based on Jäger & Maier, (2009) and narrative analysis to document various discourses that emerge from the climate action plans and relevant documents, as well as the stories from the streets that describe its materialization in the city.

Our findings are three-fold. Firstly, discourse analysis of the state climate action plans reveals that slums and informal settlements are projected as climate risks by the state and municipal governments, by objectifying and profiling them using multiple discursive entanglements. Secondly, residents in informal settlements attempt to get enlisted as regularized slums to get access to basic urban amenities, while attempting to balance it with the risk of the increased threat of evictions by the state (as part of its climate action). Finally, the existing political networks (based on local contestations between stakeholders) in the city influence the conceptualization, planning, and materialization of climate resilience discourses and initiatives, contributing to the lower possibility of equitable and inclusive climate-based frameworks in the future.

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Key Words: Climate Resilience, Inclusion, Social equity, Urban Informality, Governance

RETHINKING DEBT RELIEF PROGRAMS AND INSTITUTIONAL ADAPTABILITY AT THE GRASSROOT: A GHANAIAN TWIST
Abstract ID: 705
Individual Paper Submission

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Africa, like many developing regions, has long suffered from international aid gaps. This has contributed to its lagging development. In search of ways to boost domestic capital stock and wellbeing, a number of scholars have recommended increasing financial flow through foreign aid sources. For example, some scholars have advocated for a reasonable and sustained flow of development aid in order to help these countries meet and surpass that threshold necessary for the takeoff into self-sustained growth. Others have embraced the debt relief programs as an additional policy tool for tackling the poverty problem in these countries and consequently, increasing the domestic savings rate. In some African countries, such efforts have only resulted in greater volatility, with consequences for local capital outflows and institutional bottlenecks. It is against the aforementioned that this paper provides a more nuanced means for understanding a locality's evolving developmental patterns and performance in times of international development models and programs. This article first seeks to explain why previously adopted developmental models diverged in their performance and capacity. It further presents Ghanaian case studies on institutional adaptability -cases that explores factors that facilitate or impede such adaptability within the context of foreign development models and interventions. Ultimately, our analysis makes the broader observation that in a dynamic environment, factors that promote economic success at one point can become barriers later on. Its novel contribution lies in its multifaceted analysis and exploring some of the nuances that are often ignored in the traditional econometric analysis of international aid programs.

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Key Words: econometrics, Ghana, poverty, consequences, Aid

BICYCLE TRADES, STREET REDESIGN, AND THE MARGINALITIES OF URBAN REVITALIZATION POLICIES IN MEXICO CITY'S HISTORIC CENTRE.
Abstract ID: 718
Individual Paper Submission

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Urban revitalization relies on the redesign of streets as a key strategy for fostering desirable citizenries. While urban revitalization can be lauded for pursuing global sustainability agendas, such as the promotion of walking and bicycling, Mexico City's policies on the matter have paradoxically precluded informal public life from its streets, most notably street vending in its Historic Center. My research examines the tensions between the mobility needs of the global elites and the everyday livelihoods of undesirable street actors. Geographers and urban scholars have studied these tensions as part of a dichotomy of gentrification and resistance (e.g. Delgadillo, 2016), but I concur with recent scholarship that conflicts between formal and informal practices are not irreconcilable (Rios, 2014), and can even occupy the same bodies. Such is the case of the bicioficios[bicycle trades]: itinerant vendors and deliverymen that use cargo tricycles or bicycles as their primary mode of transportation, as their vending stall or storage space, and as an indispensable tool for their work.

Straddling the line between street vending and "world class" cycling, the existence of bicioficios begets the questions: how have the authorities resolved their ubiquitous presence with Mexico City's images of revitalized, pedestrian- and cycling friendly streets? What are the implications of this hybrid street actor in the aesthetics and ethics of urban revitalization policies?

In answering these questions, this central doctoral dissertation chapter draws on fieldwork conducted between 2017 and 2018. In addition to participant observations of bicioficios in Mexico City's Historic Center, I conducted 12 in-depth interviews with key informants from government institutions, bicycle retailers, and cycling advocacy groups. By way of a case study, I focus on the urban revitalization policies that have taken place in the Alameda Central area. The Alameda serves as a nexus between the Historic Centre and Paseo de la Reforma, Mexico City's most important financial corridor, and was thus the first area to attract foreign investment for redevelopment. As such, I also base my analysis in its various urban redevelopment plans, as well as the scholarly research that has been published about them in the last two decades (e.g. Giglia, 2016). Local scholars have focused on the urban and public space renewal processes of this area, pointing to processes of renovation, securitization, gentrification, and (re)appropriation. However, few have studied how sanctioned and unsanctioned activities still coexist in the same urban space, and none have noted the perplexing presence of bicioficios.

The contradictions spurred by the bicioficios reveal unconventional forms of spatial appropriation while also pointing to the incongruencies of Mexico City's urban revitalization policies. My findings show that despite complying with normative views of urban sustainability, the bicioficios are constant subjects of targeted policing and unequal enforcement of regulations intended to replace street vendors with amenable pedestrian and cycling traffic. These contradictions have been heightened by the introduction of street redesign efforts, which add pedestrian and bicycling facilities (see Whitney, et al., 2020) but reinforce urban inequalities by restricting their use to tourists and commuters. I argue that these street redesigns do not necessarily displace street informality; rather, it is pushed to the administrative, social, and spatial margins of the streets. In this sense, informal street actors such as the bicioficios of the Historic Center experience various forms of "marginalities", understood as the multiple conditions by which their access to the city is hindered (Geraghty & Massidda, 2019). Grounded in this theoretical framework, this article answers the need to contextualize marginality as a way to assuage universal revanchist responses to complex issues of urban informality (Rios, 2014) and, ultimately, to address class-based struggles that take place in public space.

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Key Words: urban revitalization, street vending, street redesign, marginality, Mexico City

FINANCING CLIMATE-RELATED RESETTLEMENTS IN UNEVEN GEOGRAPHIES OF RISK: LESSONS FROM BOGOTA
Abstract ID: 719

Individual Paper Submission

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With the growing prominence of climate change in development discourse, the practice of resettling households vulnerable to disasters is increasingly promoted as a strategy for climate adaptation. (Hino et al. 2017, McAdam and Ferris 2015, Olshansky 2018) This study focuses on Bogota's development plan between 2012-2018 in which the city, a regional leader in resilience planning, first tied its resettlement policy to a broader adaptation strategy. Specifically, the study analyzes the creation of a new municipal subsidy to finance resettlements in the context of Bogota's complex and uneven geography of risk.

The emergence of resettlements as a global strategy for climate adaptation raises important questions of how local political and economic factors might condition its application across diverse urban geographies. Given the centrality of housing to the resettlement strategy, especially important is understanding how this new approach to resettlements articulates with existing systems of housing provision. That is, how does it interact with policies in place for the financing and production of resettlement housing? And, how do development challenges such as housing deficits and widespread informality shape the strategy's outcomes?

Data for the study was collected through a household survey of program participants, interviews of city officials, site visits in Bogota and a review of Colombian census data. The study finds despite the unprecedented size of the city's investment in resettlements during this period it largely failed to meet the plan's goals. Its uniform financing and large-scale resettlement strategy failed to account for varying levels of risk produced by informal development. Consequently, Bogota Humana's climate resettlements resulted in an inconsistent process generating resistance among residents. These findings hold important implications for how cities mobilize their risk reduction and housing policies to confront climate change through housing strategies such as resettlements.

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Key Words: Climate adaptation, Housing, Resettlements, Informality, Latin America

HOUSING SINGLE WOMEN: GENDER IN CHINA'S SHARED RENTAL HOUSING MARKET
Abstract ID: 739
Individual Paper Submission

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Globally, the sharing of housing among unrelated individuals is on the rise. This paper makes use of a rare data opportunity to uncover the role of gender in an extreme form of shared housing, the case of bed space rentals in Shanghai, China. I employ a mixed methods approach that combines data from more than 33,000 web-scraped online advertisements, a field survey, and ethnographic fieldwork.

I find a market catering to young, educated migrants, driven by high demand. While all bed space renters engage in difficult trade-offs between personal space and spatial access to opportunities, women face

additional constraints. Landlords' express strong preference for young male tenants, both online and in conversation. "Difficult" and "older" women clash with a patriarchal belief system that expects women to be demure and domestic. While female renters do not face overt rent price discrimination, they do pay a price premium of almost 10% to rent in less crowded environments with better conditions, but in worse locations. The female price premium is driven by concerns for personal safety and the need to conform to societal expectations around female appearance.

The findings demonstrate a clear gap in the planning literature. As a consequence of changing demographics, cities everywhere are facing shifts in housing market demand. In the absence of planning solutions, young and single people are responding by increasingly reconfiguring space informally, including through shared accommodation. Importantly, this study suggests that these informal practices disadvantage women and potentially put them at risk. While the focus of this work, bed space rentals in Shanghai, is uniquely shaped by China's socio-cultural and economic context, sharing accommodation among unrelated individuals is a growing trend globally, demanding serious planning consideration.

The findings presented in this article inform a gender-conscious planning research agenda. Future work is needed to investigate how gender operates in the shared housing market as it has been documented in the Global North. Particularly pressing is the question of whether safety concerns are also an issue in less crowded shared housing arrangements. More broadly, this study challenges planners to contemplate what a gendered definition of housing needs could look like.

This paper also adds to the growing literature that uses web-scraped online advertisement data to analyze rental housing markets, which are perennially understudied. As this work demonstrates, using new online data sources such as online advertisements can be crucial in identifying hidden housing phenomena, but the picture is often incomplete. To uncover the more subtle but no less powerful dynamics of gender, for instance, investment in qualitative fieldwork was centralto gettingat the social embeddedness of the bed space rental phenomenon.

Finally, this study hopes to encourage planners to take seriously the intensifying struggle for space – of which the growing shared housing trend is a symptom. People now share housing for longer and across a widening demographic. The trading of personal space for locational access suggests a link to access to economic opportunity. If women commonly experience additional constraints, then this has important equity implications. Given that planning has been restricted by implicit gender biases in the past, how can future planning counter the reproduction of gender disparities in housing as it engages with the housing needs of the growing urban demographic of young adults?

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Key Words: Gender, Shared Housing, Rental Housing, Web Scraped Online Data, Urban China

DISCIPLINING SPATIAL PRACTICE: FLEXIBLE ZONING AND MIXED USE IN SEOUL, KOREA
Abstract ID: 812
Individual Paper Submission

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Zoning codes are techniques for disciplining spatial practice. They function by more or less strictly limiting use and bulk. Though use and bulk regulations are typically combined, they are conceptually distinguishable. Traditional Euclidean zoning, for instance, is dominated by concerns about strictly separating uses, while at the other extreme, form-based zoning codes are almost entirely concerned with strictly regulating bulk, including the shape, height, setback, and design. While use-oriented zoning is agnostic and flexible about form, bulk-oriented zoning allows for a diversity of uses. In practice, of course, use-oriented zoning incorporates some regulations on bulk and bulk-oriented zoning often implicitly limits the uses that can effectively occupy specified forms. Though Western zoning tends to lean toward one extreme or the other, the existence of such a continuum of spatial discipline invites the possibility of more intermediate forms.

However, instead of adopting intermediate forms of zoning that would reduce the strict control over allowable uses, Western cities have increased the discipline of spatial practice through various forms of mixed use zoning. The large-scale single-use districts often employed in the US have been rejected for New Urbanist, transit-oriented, and mixed use developments. Such strategies invoke a highly refined control over the use (and often bulk) of planned space in the quest for a predetermined and idealized spatial arrangement. It has been observed, however, that these highly disciplined spaces are not always successful in creating viable neighborhoods, which has led to calls for more flexible mixed use zoning.

Seoul, Korea's zoning regulations offer one such possibility for producing mixed use neighborhoods through an intermediate form of use regulation. Some of the city's residential zones permit a wide range of as-of-right commercial uses. While many Western cities seek viable mixed use neighborhoods by employing highly detailed commercial overlays in residential districts or highly refined mixed use zoning maps that strictly control the location of all uses, Seoul's zoning allows for the free and flexible spatial mix of commercial and residential uses. This offers a sort of natural experiment for examining whether flexible zoning allows for the viable organic emergence of the more tightly controlled mixed use districts employed elsewhere.

This study explores this question through an examination of one of Seoul's intermediate zoning districts. First, land use data was collected from the Seoul Municipal Government's public records for the 133 superblocks designated as General Residential District 2, which is a medium density zone that allows for both residential and commercial uses. Land uses were then sorted into seven categories: (1) pure residential use, (2) commercial only use, (3) office only use, (4) residential and commercial use, (5) residential and office use, (6) commercial and office use, and (7) residential with commercial and office use. Then, three districts were selected as representative of different mixtures of commercial and residential uses: primarily residential, balanced, and primarily commercial. GIS was then employed to map out the super blocks and their commercial uses in detail and to place them in their institutional context.

Findings indicate that a more flexible use zoning does indeed allow for the organic emergence of mixed use neighborhoods that resemble those idealized in the West. It also appears to support a range of local equilibria between commercial and residential use. However, in some cases, the emergence of commercial uses reaches a tipping point that leads to the commercial gentrification of these districts and the displacement of residential uses. Though it is not clear that such neighborhood transition is de facto undesirable, it suggests that preserving a mixed use neighborhood under such flexible zoning may require additional flexible regulations, like caps on commercial-residential ratios

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Key Words: zoning, mixed use, Seoul, flexible zoning

REDESIGN OF LAND PROPERTY RIGHTS: UNDERSTANDING THE LAND DEVELOPMENT PROCESS OF STATE-OWNED ENTERPRISES IN SHANGHAI, 1990-2010

Abstract ID: 819
Individual Paper Submission

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During the planned economy period, China's urban land was a non-productive investment factor to support the industrial production of State-owned Enterprises (SOEs). The national redistribution of industrial surplus value was the capital source of urban land development. After the economic reform, private and foreign capital had weakened the capital dependence of urban development on SOEs. But in fact, a considerable part of the capital in China's transitional economy was still controlled by SOEs, the most significant of which was the cost free and indefinitely land held by SOEs. SOEs not only held the socialist land-use rights almost equal to the land ownership, but also had authoritative influence on the land development rights held by the local governments. Using the qualitative analysis method of property rights theory, it is discovered that the land development of SOEs in Shanghai from 1990 to 2010 was a process of continuous recombination of the government, SOEs and private developers, which had experienced three main stages of land property rights redesign following the trial-and-error process of institutional transition.

(1) The absence of land development rights in the 1990s. On the one hand, the intergovernmental competition for liquid capital under the decentralized governance and the tax-sharing reform in the 1990s led to a significant decline in the financial self-sufficiency rate of Shanghai government, which urgently needed to expand the tax base and income through the non-state economy. Therefore, the SOEs' soft budget was gradually hardened. On the other hand, most of the land in the advantageous location was controlled by SOEs, so Shanghai government tried to push the SOEs' land into the land market through the reform of SOEs. At this stage, the land development rights of Shanghai government was absent, and the SOEs' land was traded by SOEs and private developers in the land secondary market.

(2) The checks and balances between land use rights and land development rights in early 2000. In view of the large loss of state-owned assets caused by rent-seeking in the SOEs' land development in1990s, the central government and Shanghai government issued a series of policies after 2002 to restrict the legal way of SOEs' land development only through land purchase reserve system. In this stage, the SOEs' land was developed by the combination of Shanghai government and private developers in the land primary market. The socialist land use rights of SOEs and the invisible monopoly land development rights of the government were mutually checks and balances, resulting in two results: first, the compensation cost of SOEs' land was far lower than the income of independent development, so that SOEs would not give up land to the government. Second, due to the huge gap between demand and supply of land purchase reserve system, lots of SOEs' land left unused.

(3) The coalition of land use rights and land development rights after 2005. As the legal development approaches were not feasible, the state-owned enterprises leased the abandoned factory buildings to the private developers to transform them into creative industry parks. The informal development way was a

kind of informal institution of land development rights which did not involve the transaction of land use rights. Therefore, Shanghai government changed from default and tolerance to assistance and encouragement to the informal development after 2005. In this stage, the land use rights and development rights reached a coalition, which released the land lease rights and land usufruct. The SOEs' land was traded by the combination of SOEs, the government and private developers in the land lease market.

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Key Words: State-owned Enterprises, land property rights, land development rights, Shanghai

COMMUNITY SELF-GOVERNANCE IN SÃO PAULO'S INFORMAL SETTLEMENTS THROUGH THE PAA FRAMEWORK
Abstract ID: 858
Individual Paper Submission

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This comparative case study examines community self-governance initiatives in two informal settlements in the city of São Paulo, Brazil through the policy arrangement approach analytical framework. In the wake of mass urbanization and urban inequality in Brazil, people residing in self-produced informal settlements called favelas engage in different modes of social and political mobilization to improve their environments and lives despite the scarcity of resources and the stigma surrounding favelas. Self-governance is a process that involves making decisions, managing community affairs, and self-regulation. The self-governance literature has been broadly disconnected from the Global South and contexts of informality. Yet, understanding self-governance in low-income communities is a means to understand the heterogeneity of residents' realities, needs, and empowerment to improve their living conditions from the bottom-up.

Utilizing participant observation, semi-structured interviews, and document analysis, this study finds significant differences in self-governing efforts in these two informal settlements. While in the smaller and most vulnerable community, self-governance focuses on supporting basic necessities and politically advocating for the right to housing, the bigger and less vulnerable community initiatives currently concentrate on managing and maintaining space. There are significant contrasts not only in actions, but in the discourse of community self-governance in these informal settlements. This study extends the self-governance literature to informal settlements and the Global South. It contributes to the field, overall, by discussing the scope, diversity, and constraints of self-governing community initiatives in contexts of informality.

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Key Words: self-governance, informal settlements, communities, Global South, policy arrangement approach

ENABLING LEGAL ENVIRONMENT FOR MEETING THE RATIONAL NEXUS PRINCIPLE: INSIGHTS FROM THE USE OF DEVELOPMENT CHARGES IN INDIA
Abstract ID: 913
Individual Paper Submission

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Central theme or hypothesis

Governments at all levels—national to local—are fiscally constrained, especially in the developing countries of the Global South. The local and state governments in particular are in a fiscal bind in this region because, among others: a) a large proportion of tax and fee revenue typically accrues to national governments and b) local and state governments have very little authority to levy new taxes. In such a scenario, these countries urgently need additional revenue sources to fund urban development projects, especially due to their rapid rate of urbanization. Development charges are a potential revenue source.

Among all the countries in the world, India is projected to increase its urban population the most—404 million between 2014 and 2050. In India, property developers typically pay development charges at the time of seeking government approval to change/institute the use of their land parcels and/or to improve them. The revenues from these charges are used to develop the infrastructure/services needed to service the proposed development. From a legal standpoint, these charges are considered a fee, not a tax. Accordingly, the courts in India, like those in the US, require these charges to meet the "nexus" and "rough proportionality" principles. The nexus principle stipulates that there should be a connection between the charges and the impacts caused by the charge-paying development. The rough proportionality principle calls for the charges to be in proportion to the cost of mitigating the impacts of the charge-paying development. Combined, these two principles constitute the "rational nexus" principle.

As India seeks to increase development charges or to levy them, there is an urgent need to investigate how these charges can meet the rational nexus principle; otherwise, they can be successfully challenged in court. Indeed, the rational nexus principle was cited to legally challenge the state of Tamil Nadu's Infrastructure and Amenity Fee. This paper seeks to begin to fill this research gap by reviewing several pieces of state-level enabling legislation to: a) show how the legislation hinders or promotes the rational nexus principle, and b) identify major insights that can help India and potentially other developing countries craft or amend legislation that can withstand legal challenges.

Approach and methodology

Using a recently published report by the Government of India, this study identifies development charge-related state-level legislation for 22 states. Next, using the strategies to promote the rational nexus principle identified in Mathur (2016), this study examines whether/how these pieces of legislation hinder or support this principle. Finally, the study findings are synthesized to highlight how legislation can support or hinder the rational nexus principle.

Findings and relevance of work

Through a summary and synthesis of India's development charge-enabling state legislation, this research advances the strand of applied research that seeks to examine ways to make development charges legally

defensible by showing how these charges can be designed to meet the rational nexus principle. The extant research in this line of inquiry has been largely US-focused and calls for data-intensive studies as inputs for designing the charges. However, conducting such studies is often not feasible in many developing countries. Therefore, this study uses India as an example to examine whether: a) context-sensitive exemplars of how enabling legislation is promoting or could promote the rational nexus principle in a developing country already exist; and b) what are some of the ways these pieces of legislation hinder the rational nexus principle and how the hindrances can be removed. Finally, the study provides several key insights that jurisdictions in India and potentially in other Global South countries can use as they adopt/amend development charge-enabling legislation.

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Key Words: Development Charges, Municipal Finance, Infrastructure Finance, Global South, Impact Fee

EMERGING URBAN PLANNING INSTITUTIONS IN MEXICO AND THEIR ROLE IN THE DEVELOPMENT OF MEXICAN CITIES
Abstract ID: 936
Individual Paper Submission

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Mexico has a long history in planning both its territory and the distribution of resources, however, urban planning has followed a much slower process and the professional practice of planning is much more recent (Garza,1989). As part of this professionalization process, the first Municipal Planning Institutes (known as IMPLAN) were created in the mid-1990s in the context of decentralization, democratization, and the increasing need for municipal level planning following a period of incremental urban expansion fomented in part by the massive expansion to housing finance (Monkkonen, 2012). IMPLAN are semi-autonomous agencies responsible for developing complementary urban planning activities which are sometimes parallel to the efforts of government agencies. Among the primary objectives that distinguish IMPLAN from municipal planning agencies, are its goal to ensure continuity of planning in the face of governmental change, facilitate collaboration between government and civil society, and the inclusion of social and economic aspects into city planning (Peña, 2012).

Yet not all cities have created an IMPLAN, and for those who have, some appear to have developed more effective institutions than others. There are now over 70 IMPLAN across the country but little has been written about them, much less about its effects on the development of Mexican cities. We present an analysis of the work, results and limitations of IMPLAN based on a survey conducted with 49 institutes. We find a great variation both in their activities and in the attributions of the institutes, which shows a lack of standardization at the national level. Additionally, the IMPLAN concur that their capacity to decide the future of cities is limited: while most of the institutes have as their attribution the creation of the Urban Development Plan of their city, many of them lack control over their changes or implementation . Likewise, IMPLANs have a very limited participation in the creation of urban policies

at the state and federal levels. In addition to these challenges, we find that insecurity in the permanence of the institutes and uncertainty in the allocation of budgets also limits their capacity.

Our results provide evidence of the relationship between local economic and political conditions and the practice of urban planning in Mexico. While our analysis highlights only some aspects of the practice of urban planning in Mexico, it sets the groundwork for the creation of an evaluation framework to understand and measure the effects of urban planning, specifically the work of IMPLAN, on the development of Mexican cities.

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Key Words: Planning capacity, IMPLAN, Mexico

WHO'S LEARNING AND GAINING IN COMMUNITY PARTICIPATION? ORGANIZATIONAL LEARNING IN INTERNATIONAL DEVELOPMENT
Abstract ID: 946
Individual Paper Submission

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Frequent discussions in planning research have explored the participation of local communities in planning and development projects. Much of the long-standing conversations surrounding participation often frame the effects of these engagements in a one-way or one-dimensional manner. For example, studies frequently center on how participatory exchanges initiated by organizations, governments, and larger institutions impact communities. This often includes a minimal focus on the way communities may be affecting the external bodies leading these participatory exchanges.

Alternatively, in practice, there appear to be instances of two-way exchanges surrounding participatory activities, where community members are not merely beneficiaries but have essential impacts on the external individuals and organizations guiding these participatory engagements. The case of small non-profit organizations uniquely brings this other side of engagement into view. These groups are often less connected to international development institutions and frequently lack the requirements and structure, that may influence the activities of larger organizations. As such, they often experiment with how they connect with local communities, incorporate ad hoc ideas, and approach development activities in their day-to-day operations. In many instances, these organizations are uniquely positioned to be affected by their work and their relationships with community partners.

In this study, we assess the work of small non-profit organizations that falls outside the one-way outcome framing of participation and appear to reassemble something more of two-way exchanges between organizations and community members. We examine reciprocal engagement dynamics through a case study analysis of a group of small non-profit organizations working on built environment projects with communities in the Global South. Through in-depth interviews with organizational representatives and observations of professional development events, we find that small organizations exhibit forms of two-way exchanges due to their unique and nuanced relationships with community partners. Our findings highlight key aspects of two-way knowledge exchanges, including variations in approaches towards organizational learning, difficulties in implementing knowledge from communities, and conflicts surrounding broader impacts and beneficiaries in organizational learning and community knowledge

sharing. The results of this research aim to enrich planning scholarship by expanding our understanding of participatory engagements in an effort to improve how engagement activities with local communities in developing communities are framed and implemented in practice.

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Key Words: Participation, Knowledge exchange, Organizational Learning, Non-profit organizations, International development

MODERN URBAN FAMILY: AN OUTCOME OF ROAD DEVELOPMENT IN MOROCCO AND VIETNAM (AND THE INSTRUMENTAL ROLE OF COLONIALISM)
Abstract ID: 950
Individual Paper Submission

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Much has been written about the co-movement between urban and economic growth and the drivers of urbanization in developing countries (Annez & Buckley, 2009). Yet, the economic development literature generally tends to overlook the role of transportation networks in the spatial distribution of jobs and population (Duranton & Turner, 2012). Furthermore, transportation research has never really tackled the consequences of transportation investments in terms of structural transformations of society.

To address this gap, at least partially, this project focuses on two developing countries in particular, Morocco and Vietnam. The research questions are the following: What is the relationship between transportation infrastructure and the modernization of the socio-spatial structure? In particular, are road investments a cause for the agglomeration of modern families in metropolitan areas?

One premise of this research is the hardly contested fact that development brings about "the passing of traditional society" (Lerner, 1958), where modernization of the family unit is one of the fundamental changes. Sociologists and anthropologists have defined modern families in terms of household size and composition, gender roles and responsibilities, divorce rate, religion, access to media, educational attainment, equipment and appliances, income, employment sector, among others. Drawing on urban theory and sociological understandings of modernization, a series of hypotheses guide this research, such as, the larger the stock of roads connecting a metropolitan area to the countryside, the larger the share of single-mother households in urban population. Each hypothesis states a different measurement of "family modernity" as the outcome of the stock of outbound roads.

Data on household characteristics were extracted from IPUMS-International, the online repertory of micro-level census data funded by the NSF. Three census years were considered in each country: 1982, 1994, and 2004 in Morocco, and 1989, 1999, and 2009 in Vietnam. OpenStreetMap data served to measure the contemporary stock of roads in GIS.

A two-stage least square regression model is used to test the hypotheses at the city level. The model relies on instrumental variables to overcome the reverse causality between transportation infrastructure allocation and population growth. Following Baum-Snow (2007), Duranton and Turner (2008), and Garcia-Lopez (2014), digitized and geocoded historical maps of transportation networks – in this case, colonial maps from the 1950s at the end of French domination in both countries – serve to instrument for contemporary road networks. The validity of the instruments is rooted in the fact that, arguably, the French's primary motivation for building roads was to extract natural resources, not to modernize and urbanize society.

The first stage OLS regressions show strong and positive associations between colonial and contemporary road stocks. Therefore, the instrumental variable should reliably predict the effects of road infrastructure on the shares of modern households in different urban areas of Morocco and Vietnam, which also means that the French still shape the Moroccan and Vietnamese societies.

Preliminary results provide support for the hypothesis that higher road connectivity between urban and rural areas leads to larger shares of "modern families" in the urban population. A tentative explanation is that outbound road infrastructure enables modern families to locate near urban jobs and amenities while keeping a connection with traditional communities. Such findings encourage transportation planners to carefully consider the social costs and opportunities of infrastructure investments given their "longue durée" consequences.

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Key Words: Urbanization, Modernization, Transportation infrastructure, Developing countries

MUDDLING THROUGH THE MIDDLE-INCOME TRAP: BUILDING GROWTH COALITIONS TO OVERCOME STRUCTURAL CLEAVAGES IN MEXICO, 1994-2015
Abstract ID: 981
Individual Paper Submission

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Scholars portray Mexico as caught in a "middle-income" trap, with large swaths of its economy too unproductive to compete with advanced countries, yet also too high-cost to effectively challenge lower-wage developing countries (e.g. Hanson 2010, Gallagher 2011, Levy 2018). However, this portrayal obscures significant subnational variation of Mexican states, which may shed light on the means to overcome such traps. By exploiting this variation, this article examines the extent to which local actors – state governments, local and foreign business elites, organized labor and other representatives of civil society – formed "growth" coalitions in four Mexican states with diverging economic performances in the post-liberalization period. It further analyzes the types of policies that those coalitions enacted in their efforts to transform local industries and labor markets, and propel their states out of the middle-income trap.

In examining these political-economic dynamics, this article builds upon an ongoing debate in the literature on the middle-income trap between the "voluntarist" and "structuralist" camps. On one hand, the voluntarist perspective suggests that, to escape the trap, states must adopt an appropriate set of policies, which may include state support for industrial diversification, state-private sector dialogues to diagnose market bottlenecks, and investments in public goods and infrastructure that enhance human capital and foster research and development (Hausmann and Rodrik 2003, Gill and Kharas 2015, Paus 2017, Rodrik and Sabel 2019). On the other hand, the "structuralist" perspective points to the prior need for strong coalitions that effectively represent broad constituencies and build consensus around the policy programs of voluntarist arguments (Foxley and Sossdorf 2011, Doner and Schneider 2016). Yet, insofar as it holds that countries' transition from low- to middle-income status increases economic diversification and foreign capital entry, which in turn generate deep structural "cleavages" – between domestic and foreign, formal and informal, large and small economic groups, classes, and/or organizations – this structuralist perspective remains pessimistic on the prospects for such coalition formation (Doner and Schneider 2016).

In building upon this scholarly work, this article deploys a comparative study of four Mexican states – Querétaro, Jalisco Baja California Norte and Coahuila – where the structures of the local economies, political alliances, institutional landscape, or geography at the time of the country's economic liberalization cannot account for the stark divergence in state-level economic performance. Instead, by examining the membership, formation, and experiences of local coalitions that promulgated state-level policies for economic transformation, we identify two conditions that distinguish successful responses to the structural challenges of the middle-income trap.

First, effective growth coalitions expand by inviting actors who do not overwhelm the power base of existing coalition members, thereby remaining "balanced." Such a "balanced" composition, in which no key group within the coalition overpowers the rest, creates the opportunity for the broad consensus that the structuralist approach establishes as a precondition for effective policy intervention. To distinguish between "balanced" and "imbalanced" coalitional expansions, we introduce measures of power – including indicators of resource bases and degree of internal organization for coalition members.

Second, as they expand, successful coalitions increase their knowledge of the "problem space" (Farrell and Shalizi 2015) pertaining to the long-term challenges of economic diversification and upgrading. That is, new coalition members offer novel information on production processes, public goods delivery, market opportunities, and/or sources of innovation. Lack of this varied information hampers coalitions' ability to identify and resolve the key bottlenecks that are the locus of voluntarist policy intervention. Our process-based state-level analyses reveal that coalitions which select for such "epistemological diversity" – e.g., by expanding into new institutional sectors, or across social, class, or geographic differences –further their ability to make locally appropriate selections from the voluntarist policy menu.

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Key Words: Middle Income Trap, Mexico, Industrial Policy, Growth Coalitions

REINTERPRETATION FROM BELOW: LAND GOVERNANCE IN URBAN AND PERI-URBAN GHANA

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Rapid urbanization and urban expansion in Ghana are leading to rising levels of land scarcity, high land values and instances of land-related conflict. To address these challenges, the Government of Ghana developed the National Land Policy in 1999, followed by a program for land administration reform in partnership with the World Bank. The Land Administration Project (LAP), launched in 2003, sought to reduce poverty and enhance economic performance through improving clarity, transparency and efficiency in the land sector. Institutional reform constituted a core pillar of the project to address the multiple land sector agencies, while recognizing the critical role played by customary authorities in land governance in Ghana. LAP sought to harmonize the customary and statutory sectors through the institutional innovation of customary land secretariats. In this context, the paper addresses the following questions: How does institutional change in the land sector redefine local governance and the balance of state-society relations? How do varied societal organizations influence the implementation and outcomes of land reform?

To address these questions, the study employed a mixed-methods approach that examines land governance organizations, while identifying the preliminary outcomes of institutional change. The selection of Ghana was purposive, given the prominence of the customary sector and the limited knowledge regarding how these organizations impact state-driven reform processes, highlighting complex institutional arrangements around land. The study focused on the two largest metropolitan regions of Ghana: Ashanti and Greater Accra, and selected eight customary areas, with a balance of internal variation in types of customary organization and a mixture of urban and peri-urban land. Methodologically, the study employed semi-structured interviews with the project implementation unit, the statutory land sector agencies at the national and regional levels, as well as interviews with customary authorities and their representatives in the customary land secretariats. In addition, the study deployed a survey in the customary areas to discern the preliminary outcomes, as experienced by local residents, along three dimensions: access to land, tenure security and incidence of land conflict.

While LAP utilized an integrative approach to institutional reform – whereby the government of Ghana sought to incorporate customary authorities into a logic of the state – the findings suggest that this approach was flawed as it downplayed the heterogeneity of these organizations. The research demonstrates that institutional change is mediated by these organizations, requiring deeper understanding as a necessary component of any theory of change. Rather than resorting to collective action, customary authorities leveraged institutional reforms through strategic behaviors according to their own interests, characteristics and capabilities. The study proposes a categorization of customary actors as societal organizations and a typology of their behavior in relation to the state.

This research is relevant to international development planning along several dimensions. First, this work contributes to the literature on institutions and change, providing a deeper analysis of societal organizations that exist in between the formal/informal binary, and yet have significant authority over land as a valuable resource. Second, this research demonstrates that the land reform process itself offers an opportunity for societal organizations to contest or renegotiate the balance between themselves and local and regional government, in some cases disrupting the logic of the state. Finally, this work is significant to understanding the intensifying competition over urban land and who captures the value in Ghana and Sub-Saharan Africa more broadly. This is critical as local and national governments increasingly see land value capture in urban areas as a potential strategy to finance costly urban development and infrastructure projects. Such questions regarding access to land and who extracts the value are central to land governance and critical to urban and peri-urban communities.

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Key Words: Institutional change, governance, urban land, state-society relations, Ghana

COMMUNITY PARTICIPATION, POWER DISPUTES AND CONFLICTS IN THE UPGRADING PLAN OF FAVELA DA ROCINHA FROM THE POINT OF VIEW OF ITS DWELLERS (2007-2018)
Abstract ID: 1105
Individual Paper Submission

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This paper examines how community participation took place in the upgrading plans proposed by PAC-UAP for the favela da Rocinha, according to the perception of its residents. It also aims to analyze the role of different institutional and social actors during the different phases of the proposal, and the power disputes and conflicts that emerged during the process. The analysis encompasses the period between 2007 and 2018 when the main slum upgrading program for squatter settlements in Brazil occurred in Rocinha: the Program for the Acceleration for the Development - Urbanization of Precarious Settlements (PAC-UAP). PAC-UAP was a federally funded program for slums in Brazil that included projects for urbanization, mobility structures, basic infrastructure, social housing, and educational and health care facilities. Community participation was part of the project through the Social PAC, which intended to involve residents in the formulation, implementation, administration and evaluation phases of the proposals. The upgrading schemes generated new expectations towards public safety, better infrastructure and quality of life demanding a more effective public response and encouraged new forms of participation. I am trying to investigate in this paper if the mandatory institutional participatory process of PAC-UAP contributed to strengthen community participation as well as actions of grassroots organizations. I also want to explore how residents responded to this new framework of participation, how they view the participation of other stakeholders, their own role in the process and if they considered that participation influenced new urban practices. The case study focuses on the community of Rocinha, the largest slum in Brazil, with an estimated population of 100,000 inhabitants. This community, which received funds and construction works from the program mentioned above, has an impressive number of grassroots organizations, a history of community involvement, and has been the stage of many violent conflicts. The main data for this research comes from interviews with dwellers, community leaders, NGOs participants and grassroots activists. Other data comes from local newspapers and bulletins, and official statistics. My theoretical departure point is anchored on three basic concepts: the right to the city (Lefebvre, 1974), dialectical utopia (Harvey, 2012) and autonomy (Freire, 1996). Preliminary results show that grassroots organizations and NGOs were very active during the PAC-UAP project in Rocinha, finding new arenas of manifestation and action. Nevertheless, power disputes between residents and neighborhood representatives occurred during the process, reflecting internal power struggles within the different stakeholders. At the end, it seems that, despite the institutional and rigid framework of the participatory process of PAC-UAP, residents could somehow participate in the process and express their opinions. I hope that this case of a participatory planning process in a low-income squatter settlement may contribute to the debate about community participation, grassroots organizations and empowerment within the planning realm.

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Key Words: Participatory planning, Slum Upgrading, Empowerment, Grassroots organizations, Squatter settlements

NEGOTIATING IDEOLOGY AND REGULATION: THE PLANNING AND GOVERNING OF PUBLIC SPACE IN BOGOTA, 1988-2018
Abstract ID: 1115
Individual Paper Submission

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Someone once told me "public spaces are like pandas: everyone likes them and advocates for them." Far from being a joke, this statement points to one of the key findings of my research, the importance of ideological narratives surrounding the planning and governing of public space. Many scholars, policy-makers, politicians, practitioners and common citizens refer frequently to the democratic and collective 'nature' of public space. But, how does this 'nature' translate into urban policies and planning practice? To answer this question, I studied the planning and governing of public space in Bogota between 1988 and 2018.

From the 1990s on, Bogota became visible at the global level thanks to a series of urban transformations, and the implementation of urban policies to improve the quality of life by transforming the city's urban infrastructure. Public transportation and public space became the focus of public sector investment. The transformation of public space included the production of new spaces and the recovery of existing ones. In both cases, the initial aim was to ensure an effective collective use of public space by providing physical quality, defining a proper functionality, and controlling interventions and activities that put collective use at risk. This move was not unique to Bogota, but rather was part of a broader trend that placed public space closer to the core of urban planning, urban politics, and the urban debate globally.

I argue that the increasing importance of public space in urban planning and politics is fundamentally transforming it into a tool of governmentality, that is, a technique of government used to promote specific types of conduct. Throughout this work I show how ideological narratives as well as regulatory concerns, and the relationship between and within them, are central to the contemporary construction of public space as a public problem and its conformation as a policy field. This is important because there is increasing evidence of the contradictory roles of public space as a space of politics and as a space of leisure, in other words, between the collective and democratic nature of public space and the drive for more entrepreneurial forms in its governance.

My findings suggest that ideas and ideals about public space need to be operationalized and, to do this, society has constructed it as public problems granting governments the authority to regulate it. This process involves the negotiation of ideological narratives and regulatory concerns which creates a tension that is constantly under negotiation within processes of governing. In this process agents and institutions as well as politics and knowledge are continually balancing and accommodating both aspirations to

innovate and the requirements of routine daily practices.

Using examples, I illustrate how local practices of planning and governing of public space in Bogota embrace these processes of negotiation to demonstrate that an important part of the struggle over public space is taking place in the policy arena but, because every-day assemblages and governing practices are subtle and embedded in "motherhood and apple pie" idealistic rhetoric, they often go uncontested, and their consequences may go unnoticed. In the end, this work shows that governing public space today is not only a matter of infrastructure provision, but also of the construction of an urban vision, with a particular city model and model citizen in mind. It calls for recognition that the negotiation between ideological narratives and regulatory concerns is deeply transforming public space in both its urban form and its role in urban politics.

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Key Words: Public space, Planning practice, Governing process, Bogotá

ALIGNING LOCAL INDICATORS, NATIONAL PRIORITIES, AND GLOBAL GOALS: DEVELOPING AN INDICATOR SYSTEM FOR CHENGDU'S "PARK CITY" PLANNING
Abstract ID: 1127
Individual Paper Submission

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In pursuing urban sustainability many cities derive their sustainable development visions by aligning local advantages with national priorities. The City of Chengdu's "Park City" vision can be thought of as such an ambition, which aims at embracing China's ecologically-conscious new urbanization approach while taking advantage of the city's natural endowments, culture heritage, and economic strength. The City's Park-City aspiration also reflects its branding and marketing strategy in the increasingly competitive global urban arena (Chengdu Institute of Planning and Design, 2019). Seeing the need to monitor and evaluate its progress toward the "Park City" goals the City has partnered with the UN Habitat to develop a Park City Indicator System based on international experiences and trend (Qiu et al., 2018)

This article uses extensive literature review to identify methodology that helps a city use an indicator system to address its unique goals and needs, such as in Chengdu's case. Indicator systems that are practical and effective to a city should be firmly grounded in well-accepted international principles and practices and the same time be responsive to the city's history, reality, and visions. More importantly, the structure of an indicator system and the selection of specific indicators need to be well aligned with the city's strategies and actions. However, many existing indicator systems used to monitor and evaluate sustainable urban development tend to be general and comprehensive (Lynch et al., 2011; United Nations, 2007). Literature is limited on how to develop an indicator system uniquely suited for a city's planning framework and process.

This article first elaborates on the concept of Chengdu's Park City by connecting it with China's ecological civilization campaign and the United Nation's Sustainable Development Goals (SDGs), which helps identify environmental, social, and economic goals specific to the Park City concept and planning. Via a systematic review of international experiences in using indicator systems to assess and evaluate urbanization the article then summarizes a series of indicators consistent with practices adopted internationally and in China. It further identifies indicators most applicable and suitable for Chengdu City after taking into consideration the City's specific goals, its ongoing planning efforts, and data availability. The article concludes with a discussion on methodology of indicator system building that uses place-based, context-specific indicators to address specific local needs and objectives.

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Key Words: Indicator System, Sustainable Urban Development, Park City, Chengdu

POLITICS OF URBAN DETRANSFORMATION: PRECARIOUS SPACES AND THE INSTITUTIONAL BOTTLENECKS FOR STATE-LED URBAN RENEWAL
Abstract ID: 1143
Individual Paper Submission

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State-led urban renewal has been a "modus operandi" for transforming city parts to serve various objectives, including the reproduction of built environment, maximizing returns to real estate, or changing the socioeconomic profiles of neighborhoods. However, large-scale urban renewal agendas do not necessarily unfold as projected. Despite the abundance of research on the governance of urban transformation, there is limited research on why several projects stagnate for years and become a part of the urban landscape epitomizing precarious spaces in form and substance. This paper introduces the term "the politics of detransformation" to define the socio-political nature of this multifaceted and complex process of urban change that diverges from the intended outcome and creates the "unplannable" spaces (Roy 2005; 2009). By conducting a comparative analysis of three extreme cases of urban renewal operations from three major metropolitan cities in Turkey (Mamak-Akdere in Ankara, Fikirtepe-Kadikoy in Istanbul, and Karabaglar in Izmir), this study explores the inherent institutional, political, and administrative mechanisms that impede the intended redevelopment outcomes. We use qualitative case study methods to analyze data from semi-structured interviews and documentary evidence as well as the secondary data from the literature. We identify the socioeconomic and legal dynamics that lead to the institutional bottlenecks in redevelopment planning and conclude that the reckless urban renewal implementation generates exceptions to the order of formal urbanization. This study also contributes to the efforts to move beyond theoretical claims to global applicability to better address the realities and idiosyncrasies of urbanization in the global South (Lawhon and Truelove 2020, Schindler 2017).

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Key Words: Urban renewal, detransformation, precarious spaces, urban governance, Turkey

DOES RURAL-TO-URBAN MIGRATION ERODE MIGRANTS' TRUST IN LOCAL GOVERNMENT?
Abstract ID: 1157
Individual Paper Submission

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Rural-to-urban migration has been phenomenal and a driving force behind the rapid urbanization in China during the past four decades and likely to remain so in the near future. As of 2018, there were 288.4 million rural-to-urban migrants living and working in Chinese cities, making up more than one third of the entire working population. Moving from the countryside to cities inevitably affects a wide variety of life domains of migrants. Among these, migration's socio-economic consequences have received most attention. For example, migrants are expected to have higher incomes, better employment opportunities, and better educational resources for their offspring than their non-migrant peers.

Scholars who are attentive to migrations' socio-economic consequences for migrants often overlook the fact that migration is also politically consequential for migrants. Migrants' experiences with the polity and government are expected to be significantly different from those of their non-migrant peers who choose to stay in rural areas. These distinct experiences, in turn, have spill-over effects on migrants' orientation toward government. On the one hand, migrants' improved material well-being and economic status are likely to increase their assessment of government economic performance, then lead to a more positive perception of government. On the other hand, migrants-targeting regulation and controls such as policing, surveillance, demolition of migrants' neighborhoods, eviction, and mandatory registration policies can contribute to migrants' sense of liminal and marginal political status, and in turn, lead to a negative perception of government. In either way, the act of migration is likely to change migrants' perceptions of government.

Despite these expected political consequences of migration, there has been no systematic, direct study of whether and how the act of rural-to-urban migration affects migrants' perception of government in literature. To respond to the absence of this scholarship, we use individuals' trust in local government as an indicator to discuss the effects that migration may be having on migrants' perceptions of government in China. Using 2016 Chinese Family Panel Survey (CFPS) data (N=32,413), we adopt a counterfactual causal inference framework and Propensity Score Matching (PSM) methods to conduct a comparison in political trust between rural-to-urban migrants and their rural non-migrant counterparts. We answer two questions through this comparison: (1) Relative to their rural non-migrant counterparts, do migrants tend to hold a different level of trust in local government? (2) If migrants do hold a different level of trust, what parts of their migration experiences explain this difference?

Through this statistical examination of the migration effects on individuals' trust in local government, we find that the political consequences of migration run deeper than one might expect. We find significantly lower levels of trust among rural-to-urban migrants, which highlights migrants' general negative

perception of government. After controlling for socio-demographic features of individuals such as age, gender, marital status, income, educational attainment, political party affiliation, parents' levels of trust in government, and household size, we find that migrants' lower levels of trust are primarily a reflection of their unpleasant political experiences in the city. These include having conflicts with government officials, being charged unreasonable fees by government agencies, being treated unfairly by government officials, and being treated unfairly by government agencies because of a rural household registration (*Hukou*) status.

Rural-to-urban migrants comprise an increasing percentage of population in many urbanizing countries and the erosion of their political trust provide an accurate thermometer of their unpleasant political experience in cities. Migrants' lower levels of trust are also evidence of their belief that governmental performance and motivation are failing in some way. This study suggests that migration policies should emphasize political inclusion and integration of migrants into urban society.

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Key Words: Rural-to-Urban Migration, Trust in local government, Political experience, Propensity Score Matching, China

EXPANSION, INTERIORIZATION, DEMOCRATIZATION: REGIONAL LABOR MARKETS AND THE SPATIAL DISPERSION OF EDUCATION INSTITUTIONS IN BRAZIL
Abstract ID: 1177
Individual Paper Submission

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During 2004-2015 the Brazilian federal government, led by the Worker's Party administrations of Presidents Lula and Dilma, initiated a set of reforms to the country's technical and higher education systems (Almeida et al 2016, Schwartzman et al 2015). These policy changes, which overlapped with a period of declining inequality and rising real wages, were guided by three objectives: 1) expansion, or increasing the number of enrollments; 2) interiorization, or creating education services in peripheral locations that lacked them; and 3) democratization, or enabling access to groups facing historical barriers (Brito 2014). New public and private schools appeared in all parts of the country, including urban, peri-urban and rural areas as well as more- and less-developed regions, and enrollments in both technical and higher education systems tripled in the period of a decade. These outcomes are especially significant because, for the first time in the country's history, new enrollments became racially and socio-economically diverse in a way that reflected the composition of Brazilian society.

In the context of aggregate trends towards lower inequality and growing wage rates, how, and to what extent, did this transformation of the Brazilian education system contribute to equitable labor market outcomes? What is the relationship between expanding educational enrollments and different trajectories in the occupational composition of regional labor markets and especially the share of wages captured by workers in low- and medium-skill occupational categories? How do these relationships vary across richer versus poorer regions of Brazil? On the one hand, expanding access to skills and knowledge may increase

workers' marginal productivity of labor in a way that is income-distributing in a broadly-based way. On the other hand, an increase in the supply of skill along the lines of Brazil's education expansion might retard wage growth among affected occupations.

I address these questions with a focus on the occupational structures of regional labor markets (Markusen 2004). Specifically, I examine how changes in the supply of skills and knowledge, as measured by variation in the rate at which education enrollments expand, are associated with different occupational To this end, I construct a dataset for the years 2007-2015 that combines labor market data from the Brazilian Ministry of Labor's Annual Report of Social Information with enrollment figures from the Ministry of Education's School Census and Census of Higher Education. I add additional demographic variables from the national census agency. Using the micro-region (Census-defined regions of typically five to eight municipalities that correspond with a labor market area) as my unit of analysis, I take advantage of broad variation in year-on-year changes in enrollments at the basic, technical and higher levels of the education system to examine the relationship between the supply of educated workers and labor market outcomes with respect to the distribution of jobs and wages across occupational groups. In interpreting the results, I draw on insights from fieldwork in schools and firms in Pernambuco, a less developed state in Northeast Brazil, and Rio de Janeiro, a more developed state in Southeast Brazil.

I find that the expansion of enrollments in technical and higher education is associated with positive, though modest, outcomes with respect to job creation and wage growth at the aggregate level. By disaggregating findings by occupational category and by geographic region, I show that those who most benefited were workers in middle-skill occupational categories, as well as workers in poorer regions. I conclude the paper with some implications for education policy and labor market planning in other developing countries that are expanding education systems.

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Key Words: Education, Labor markets, Brazil, Occupations, Equity

VENEZUELA'S RADICAL PLANNING EXPERIMENT: LESSONS FROM THE WATER SECTOR TWO DECADES ON
Abstract ID: 1203
Individual Paper Submission

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In response to the limitations of top-down planning approaches, participation has been embraced as a prerequisite for efficient and equitable planning processes and outcomes. While participation and decentralization have often accompanied inequitable neoliberal reforms (Hickey & Mohan, 2005), participation is also a key tenet of 'radical planning'. Seeing planning as a tool for social emancipation, radical planning seeks to challenge the status quo by transforming the social, political, and economic structures that sustain marginalization (Friedmann, 1987). It also uproots planning from the offices of experts and bureaucrats to consider the institutionalized and 'insurgent' spaces where citizens envision and enact better futures (Miraftab, 2009).

Given the inherently oppositional nature of radical planning (Beard, 2003), what happens when it paradoxically becomes state policy? This question is particularly relevant Latin America. Over the past two decades, several of the region's governments have institutionalized participatory planning as part of transformational Left political projects. During Venezuela's "Bolivarian Revolution" (1999-Present), constitutional and legal reforms mandated the creation of participatory bodies in virtually every sector of social and economic life. Initially celebrated by some as potential cases of best practice, observers presciently warned of incipient conflicts between state and community agendas given the programs' governmental origins (see Irazabal & Foley, 2010). Amidst an ongoing political and economic crisis in Venezuela, and turbulence in the region as a whole, it is important to take stock of the successes and limitations of these planning experiments for achieving inclusive decision-making and equitable service delivery, rather than discounting them and moving on to the next potential 'model'.

To that end, this paper discusses Venezuela's participatory water management, based on ethnographic and mixed methods research with Caracas's technical water committees (MTAs) in 2012 and 2016-2018. Part of a wider network of local participatory planning bodies, the MTAs are neighbourhood water committees that work with public water utilities to monitor water services and plan and execute local infrastructure projects. The paper argues that participation initially supported service improvements and encouraged a palpable sense of citizen empowerment, despite growing tensions between communities and state actors. However, these gains were partially enabled by the high oil prices that allowed participatory reforms to be accompanied by pro-poor spending (especially during 2000-2012). This made the programs vulnerable in the long-term. Contradictions associated with this state-led model have intensified during the economic crisis (2013-present). Importantly, while participation supported localized infrastructure improvements, it also redirected public debate from larger structural challenges plaguing the Caracas water system – challenges that are increasingly visible today in a context of widespread water shortages and incomplete mega-infrastructure projects.

The paper concludes with concrete lessons for deepening participation and improving services, based on community organizations' proposals. Conceptually, this account illustrates the importance of situating analyzes of participation within longer historical trajectories of political and economic change, in addition to attending to the institutional features of participatory planning reforms.

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Key Words: Water, Participation, Radical planning, Latin America, Infrastructure

DESIGNING SMART(ER) SUBSIDIES FOR WATER AND SANITATION SERVICES: HOUSEHOLD PREFERENCES FOR SUBSIDIES IN NAIROBI, KENYA.
Abstract ID: 1243
Individual Paper Submission

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The effective pricing of municipal water and sanitation services can play an important role in promoting efficient water use and enhancing utilities' ability to deliver high quality water and sanitation services. Unfortunately, most utilities in the low- and middle-income countries do not price water and sanitation services effectively. The vast majority of utilities in these countries implement an increasing block tariff (IBT) (GWI, 2017) that does not send a clear price signal to customers and does not effectively target subsidies to the poor (Fuente et al., 2016). Nearly all of them also implement tariffs that are not sufficient to cover the cost of providing water and sanitation services. A critical barrier to pricing water and sanitation services better (i.e., moving away from IBTs and implementing prices reflect the cost of service provision) is policy makers' desire to protect low-income customers, which is reinforced by the Sustainable Development Goals call for "safe and affordable" water and sanitation services for all by 2030.

Despite recent global attention to the affordability of water and sanitation services and subsidies in the sector (Acey et al., 2019, Andres et al., 2019; Mitlin et al., 2019), limited attention has been paid to household perceptions of affordability and their preferences regarding the design and delivery of subsidies. This paper examines customer perceptions of affordability, what constitutes "fair" water prices, and household preferences for different subsidy delivery mechanisms in a low-income community in Nairobi, Kenya. We find that households in our sample (n=325) felt that water service provided by Nairobi City Water and Sewer Company was affordable at current prices, particularly in relation to alternative sources (i.e., vendors). However, households felt that water service would put a financial strain on their families if service was priced at full cost recovery levels. We also find that households preferred subsidy mechanisms that provided them some form of autonomy over when and how to access and use subsidies. Overall, this paper contributes directly to global discourse on the affordability of water and sanitation services and the design and delivery of smart(er) subsidies for basic infrastructure and services more broadly.

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Key Words: water, sanitation, subsidies, infrastructure planning

THE SPATIAL ORIGIN OF LABORS IN TOWNS' NONFARM ECONOMY AND THE ROLE OF TOWNS IN THE IN-SITU URBANIZATION: THE CASE OF JIANGSU PROVINCE.
Abstract ID: 1246
Individual Paper Submission

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Rapid urbanization is accompanied by social problems such as large urban-rural gaps, the inequality in cities, and the difficulties faced by the left-behind children, elders, and women in rural households. In this context, the nonfarm development of towns might be able to provide local job opportunities for rural people, achieve a balance between the economy of agglomeration and the equity by job opportunity dispersion, and promote inclusive urbanization.

This research focus on the following questions: Where are the labors in towns' nonfarm economy come from? What are towns' role in providing job opportunities for rural labor, especially those vulnerable groups of people who are not able to migrate to large cities for nonfarm jobs?

We used qualitative and quantitative methods in the research, and did the analysis with multiple data sets. We used anonymous individual-level data about the employee of typical industrial firms and the residents of typical towns in Jiangsu Province of China, which contain the employees' personal attributes, location of birthplace, residence, and work. These data were geocoded and spatially joined with other social-economic statistic data about the cities and towns of Jiangsu Province, such as the town-level data from the third National Agricultural Census. Qualitative data are the archives about the development of the towns and other information that comes from the interview with local informants.

We categorized the employees according to their origin and the distance with their firms, such as locals, inter-town migrants, inter-county migrants, and inter-provincial migrants. Then we analyzed the composition of employees in firms of different industries and in towns with different economic development levels. After that, we used logistic regression to analyze the relationship between the personal attributes of employees and their spatial choice of nonfarm jobs.

The research found that firms in less developed towns have a larger proportion of employees that come from the local town or adjacent towns, while firms in developed towns have less employees from adjacent towns but more employees from inter-provincial migration. Firms of labor-intensive industries have a higher percentage of local employees than firms of tech-intensive industries, while firms in industries with relatively poor working conditions such as metal products or non-metallic mineral products have a small percentage of local employees and a larger percentage of long-distance migrants. Inside each firm, a higher proportion of ordinary workers come from the local towns, while a smaller percentage of technicians or managers are locals. The female, elder, or less educated labors have a higher tendency of local employment instead of long distance migration. We explain the spatial origin of employees by combining the neo-classical micro economic theory about migration and the dual labor market theory of migration.

The nonfarm development of towns attract labor from the rural villages, other towns, and even the county centers or cities, which lead to town-to-town migration and city-to-town migration. As a result, the towns become the place of in-situ urbanization and another choice of urban living in addition to large cities. By providing local economic opportunities to the rural people, especially the disadvantaged groups, the development of towns can improve the accessibility of resources and jobs, and is beneficial to inclusive urbanization.

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Key Words: towns, nonfarm job, rural labor, migration

MAKING CITIES INCLUSIVE: INVESTIGATING THE ROLE OF PUBLIC SPACES IN EMPOWERING URBAN POOR
Abstract ID: 1335
Individual Paper Submission

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Urban slums are often caused by unplanned and unchecked urban growth. Urban dwellers in India represents about one-third of the total population of the country. As per Census 2011, there are 53 urban agglomerations in India with a population of a million or more, a rise of 50% in 10 years.

Most of the 53 urban agglomeration in India with a population of a million or more are experiencing a rapid growth of slums due to a massive influx of rural population in cities. This large scale rural to urban migration has created several problems such as housing shortage, congestion, and poor sanitation. The expansion of informal settlements in cities is directly related to affordability and the shortage of housing stock.

Slum population in India has risen between 2001 and 2011 and is expected to further rise in near future. According to some estimates, slum population in 2025 may cross 100 million compounding the already complex set of problems. The Government at every level (Federal, State, and Local) understands the complexities of the problem and has constantly tried to connect with the targeted audience with very little success. Successive governments have launched massive programs targeting the urban poor in last 2 decades. In 2014, the Government of India launched Swachh Bharat Abhiyan or Clean India Mission at a projected cost of $30 billion. There are at least 5 more urban poor centric projects which were launched by the Government in last 4 years at a projected cost of upward of $200 billion. However, governments at every level have been struggling in disseminating the information to the intended population.

This research aims to understand the role of public spaces in the overall development of slums. This study investigates the relationship between the presence of public spaces and the amenities of the slums. I argue that the public spaces play a vital role in spreading the knowledge about the public policies among slum dwellers. There is a plethora of research suggesting the linkages between the informal information network and the amenities in informal settlements.

This research utilizes primary data of 215 households (1200 individuals) from 16 slums in Patna. Apart from the detailed household survey data, I utilize slum profile of all 16 slums to identify existing infrastructure provisions within slums. They survey was carried out in 2017 using multistage random sampling in Patna, Bihar. This study utilizes regression analysis to understand the impact of presence of public spaces on the amenities of the slums. Preliminary findings suggest that slums with public spaces are more likely to have more amenities compared with slums where there are no public spaces. Further, we find significant differences in the provisions of drinking water facilities and the per capita toilet availability. There are also basic demographic differences in the education attainment and formal employment.

This understanding will help policymakers to increase the effectiveness of policies aimed at informal settlements. The provision of public spaces should be an integral part of urban planning objectives and the findings may inspire planners, policy makers, and civil society to formulate and implement measures in this regard to achieve more inclusive and sustainable cities. This research has a huge policy implication and it establishes the importance of public open spaces in information dissemination.

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Key Words: Urban slums, Informal Settlements, Inclusive Cities, Information Networks

TWENTY YEARS OF THE US AFRICAN GROWTH AND OPPORTUNITY ACT (AGOA): POLICY LESSONS FROM KENYA'S EXPERIENCE
Abstract ID: 1362
Individual Paper Submission

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The African Growth and Opportunity Act (AGOA) is a United States (U.S.) law that provides beneficiary countries in Sub-Saharan Africa (SSA) liberal access to the U.S. market. It seeks to diversify the region's export production, expand trade and investment with the U.S., and accelerate its economic growth. Since its inception in May 2000, AGOA has had a significant impact on stimulating SSA-US trade and employment. However, export increases under AGOA in non-oil-exporting SSA countries has come from the textile and apparel sector, with relatively tepid responses from the non–textile and apparel sectors. This paper examines whether AGOA is achieving its objectives and what, if any, African countries can do to improve their AGOA implementation, diversify their exports and markets, and develop their long-term trade strategies.

Kenya is a good case study for assessing the impacts of AGOA on U.S.–Africa relations. Like many SSA countries, Kenya faces immense challenges in diversifying its trade beyond textiles within the AGOA framework. Using publicly available data from Kenyan and U.S. governments, and international agencies, we explore Kenya's AGOA trade, achievements, and socioeconomic impacts. We then offer recommendations for the effective implementation of AGOA, identify Kenya's capacity gaps, and suggest capacity imperatives for optimizing AGOA's benefits.

Results show that while overall U.S. imports from and exports to Kenya have fluctuated, they increased since AGOA's introduction. A large share of U.S. imports from Kenya and exports occur under AGOA. Textile and apparel products have dominated Kenya's exports to the U.S. This sector's growth has also been accompanied by diversification within the sector—with a mix of growth in existing product lines and in new product lines. The U.S. has replaced COMESA countries as the dominant destination for Kenyan textiles and apparel products. Although the non–textile and apparel sectors have also grown under AGOA, their rate of growth has been less impressive. For instance, while coffee exports to the U.S. were significant before AGOA and continued to do well under AGOA, tea exports have not. Nuts and cut flowers have experienced the fastest growth. And these non–textile and apparel exports weathered the storm of the U.S. recession in 2009 reasonably well. AGOA's economic impact, in terms of private investment and employment is also noteworthy. However, foreign ownership of most AGOA-related enterprises has led to questions on who benefits from AGOA. AGOA has also had significant social impacts through wages, and entrepreneurship opportunities for women and youth. Yet, the wage gap between Kenyan and expatriate workers, the concentration of women and youth employment in the garment and agro-processing sectors, and the conditions of their work environments have raised concerns.

We offer the following recommendations for Kenya and other SSA countries that wish to benefit from AGO. First, we call for institutional restructuring to allow for increased coordination of trade and industrial policies and for the strengthening capacities for policy formulation, monitoring, and evaluation.

Second, governments should seek to benefit more from AGOA by strengthening their trade negotiation skills. Third, Kenya should work towards a multi-sectoral and globally competitive trade and industrial policy to move the country past the dependence on AGOA and the U.S. market. Moreover, Kenya should make its apparel industry globally competitive and diversify its exports to include high value-added products. Fourth, countries must invest in better infrastructure, including transportation and electricity systems, to help reduce the cost of production. Finally, we call for policies to ensure that AGOA benefits Kenyans, including supporting local entrepreneurs through low-interest loans, training and capacity building initiatives, ensuring domestic supplies of cotton and other raw materials, and improving working conditions in AGOA firms, especially those that predominantly employ women and the youth.

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Key Words: African Growth and Opportunity Act (AGOA), export processing zones (EPZ), US-Africa relations, industrialization, Africa

USING LAND READJUSTMENT AND DENSITY BONUSES TO SELF-FINANCE URBAN DEVELOPMENT AND INTRODUCING POPS AND BIDS FOR QUALITY PUBLIC REALM–A CASE FROM SURAT CITY, INDIA
Abstract ID: 1369
Individual Paper Submission

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This paper presents multiple stages and tools of land value capture as used in creating market-based mechanisms of self-financing urban development in Surat city. The paper is based on a case study focuses on two parts : first, a unique case of outer ring road of Surat is presented, where land readjustment (LR) technique was used and strategic land bank was created, and additionally, FAR density bonuses were offered to land developers, to self-finance planned urban development in the fringe areas of Surat. The primary goal was to develop a metro scale major urban infrastructure project of outer ring road by utilizing market-based mechanisms and create planned urban development. The second part identifies key challenges in the LR case, and prescribes Privately Owner Public Spaces (POPS) and Business Improvement Districts (BIDS) as tools to enhance quality of the public realm, and land value capture. POPS and BIDS would preserve property values and enhance property values in the study area. POPS are used in Manhattan, New York City that allow sharing ground level lands for public access and owners receive incentives such as FAR bonuses, higher air space and development rights.

Land readjustment (LR) has been in use in Surat, India for some time. It involves participatory, multi-year, multi-step planning process, and with a new layout, provides geometrically shaped land lots with direct access, installs urban infrastructure and public amenities, and crates coherent planned urban development. The LR plans are neighborhood scale plans and result in partially self-financing manner. In Surat, planners created an outer ring road by stringing together multiple LR plans and planned to carve

the right of way (ROW) of the outer ring road (ORR) encircling the metro area. The city in addition to utilizing LR technique to create the right of way (ROW) for the ORR, also offered higher FAR bonus option to the landowners on charge basis.

The first part will focus on a unique application of LR as practiced in city of Surat, highlighting stages involved in land value capture (for example: at the time of converting agriculture to non-agriculture use, assigning use zone, declaration of the outer ring road, at the time of planning LR plans, and after plan implementation. This case of Surat also offers FAR density bonuses to participating developers on a charge basis. The second part highlights challenges of the LR planning, as they exist today, and then prescribes new solutions to improve the quality of the public realm by introducing concepts of privately owned public spaces (POPS) and managing those via creating business improvement districts (BIDS) to the planned areas of LR. This case study presents opportunities for planning professionals who face the challenge of supplying infrastructure and addressing transportation deficiencies in financially constrained and rapidly growing cities, especially those in developing countries.

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Key Words: Land Readjustment, Land Value Capture, Self-Financing Urban development, Privately Owned Public Spaces (POPS), Density Bonus

TRACK 7 – POSTER ABSTRACTS

DESIGNING NATURE IN NEW TOWNS: LANDSCAPE PLANNING IN BINHAI AND XIONG'AN, CHINA
Abstract ID: 247
Poster

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New town practices in China became a widespread national public policy to accommodate millions of migrants moving from rural areas to cities, but not all of them managed to achieve their initial goals. Meanwhile, the land cover has changed dramatically alongside the heated construction of new towns, which raised severe environmental degradation, such as habitat fragmentation and resource pollution, resulting in ecologically-failed new towns. This paper focuses on the role of landscape planners in China's unique planning system and examines how the design transform or preserve the nature of Chinese new towns.

This research adopts the method of a comparative case study assessing both Binhai and Xiong'an, two national new towns in Tianjin and Hebei, respectively. Data includes both primary and secondary sources:

the planning and design documents, key informant interviews, and journal critics. Even though Chinese new towns differ case by case, scholars conclude two various political intentions behind: development-driven and deconcentration-driven. Binhai New Area was initiated in 1994 by the Tianjin municipality as a new harbor district attracting national and global investment. Accommodating nearly three million residents today, Binhai also significantly pushed the shoreline toward the sea with many reclamation projects. Recently in 2017, the central government announced to relocate the non-capital industries of Beijing to the newly established Xiong'an New Area. Adjacent to the largest inner lake of north China, Xiong'an is also likely to impact the fragile natural system.

This paper argues that the designs showed limited validity controlling urban expansion and stewarding nature, even though the planners managed to preserve the ecological system upfront. In the case of Binhai, the local government amended land use plan many times, converting natural wetland and tidal zones to industrial ports, to promote economic growth. Meanwhile, the case of Xiong'an indicates the limit of design and planning culture in China, because planners working on public projects tended to fall in the trap of following the politicians rather than leading them. In conclusion, the ecological failure of development-driven new towns resulted from economic pressure, while the politic-following culture in the planning profession puts nature at risk in deconcentration-driven new towns. This research criticizes the validity of the existing landscape planning practice, reveals the process of designing nature in China's new town movement, and suggests a more rigid and rational professional culture in the planning field to steward nature.

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Key Words: new town, landscape planning, ecological degradation, China

GENERATIONAL DIFFERENCE AND SPATIAL MISMATCH OF CONCENTRATED RESETTLEMENT COMMUNITIES IN CHINA
Abstract ID: 575
Poster

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The triumph of China's rapid urbanization (from 18% in 1978 to 60% in 2018) is at the cost of millions of farmers' displacement due to the land expropriation entailed by urban expansion. The concentrated resettlement communities (CRCs) are initiated by the local authority as one component of the resettlement project and developed by real estate developers who are in collation with the government through contracts. Prior literature has paid much attention to the social dimension of CRCs, exploring their role in consolidating territorialization and neighbourhood identity, functioning as transitional neighbourhoods for rural-urban migrants, reshaping the social relations of resettled rural residents, and regulating the resettled. However, research on the spatial-temporal dimension of the adaptation process of the displaced villagers in CRCs regarding the generational difference and the spatial location's impacts on employment

opportunities remains limited.

The spatial mismatch theory is originated from North American but has been introduced to China in recent years. Empirical studies have reported that the resettlement communities for displaced residents are mostly located in the urban fringe areas with some in proximity to the original place of the displacement. This distinctive location choice made by the government has a profound influence on the displaced residents' adaptation process to the urban milieu. The "spatial barrier" of the CRCs can also spawn other side effects such as residential immobility and residential segregation, and the relations among these aspects are under-examined in the current body of literature.

This research aims to respond to the following questions: 1) How has the Hangzhou local CRCs evolved since the 1990s and what are the distinct generational differences and structural changes among CRCs established in different periods? and 2) What are the employment patterns of the displaced villagers during their adaptation process and how the planned spatial location of the concentrated communities affect the adaptation of the displaced villagers regarding the spatial-mismatch hypothesis? To respond to these questions, this research uses the City of Hangzhou, China, as the case on the account that the city has established over 50 concentrated resettlement communities since the 1990s amid the massive wave of land-led urbanization. Semi-structured interviews will be carried out in tandem with questionnaire surveys among sample CRCs. To facilitate the interpretation of generational differences, the sample CRCs are selected from three distinctive periods, namely from 1990 to 2000, 2001 to 2010, and 2011 to the present. Data on various factors such as demographics, educational attainment, employment, income, and social welfare conditions will be collected, and descriptive statistics and regression analysis will be implemented to reveal the relevant findings.

This research contributes to the existing discourse on CRCs by providing a new perspective which conceptualizes the displaced villagers' adaptation process in a spatial-temporal lens. Based on the findings, this research advocates further people-oriented and humanistic planning policies on CRCs.

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Key Words: concentrated resettlement community, displaced villager, generational difference, spatial mismatch

WATER DIARIES: A TOOL TO RECORD WATER ACCESS AND USE IN CITIES WITH HYBRID WATER INFRASTRUCTURES
Abstract ID: 659
Poster

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Hybridity is a feature of water infrastructures and governance in cities of the global South (Acey, 2016). Rapidly urbanizing places as well as small cities and towns, in particular, rely on hybrid infrastructural systems as they lack adequate coverage of centralized pipe networks. In these places, small-scale, decentralized, community-managed systems help residents make up for the gaps in piped network coverage (Cheng, 2014; Das, 2016; Spencer, 2019). Similarly, groundwater might offset the paucity of treated surface water. A nuanced understanding of the operations of hybrid infrastructures and governance is important if we are to improve water governance, reduce disparities in access by mobilizing various inter-operating systems, and realize the human right to water for all across the global South. However, there are few methods that help us uncover how urbanites practically access water from hybrid systems while navigating the different dimensions of access that produce disparities.

This poster describes and critically appraises an ethnographic, action-research tool: water diaries, which was developed to understand the spatial, temporal, infrastructural, and gendered dimensions of domestic water access and use in urban conditions with hybrid water infrastructures. The diaries were developed in partnership with a community-based NGO and were used to collect household-level water access and use data in Tiruppur, India between June 2019 and January 2020. Tiruppur is located in a water-scarce region and has hybrid water infrastructures. As the city's piped network only covers two-thirds of the households and supplies water no more than once a week, residents have developed complex storage practices and strategies to obtain water from bottled sources, public taps, open wells, and borewells to meet their daily needs.

110 women, who were purposively sampled to represent different social backgrounds, tenancy arrangements, migration status, and place of residence, maintained water diaries for a month to track their households' water access, storage, and use practices from across hybrid infrastructural systems. They also recorded the gendered dimensions of water collection-storage practices in their households as well as the economic and social costs that they incurred in the process of procuring water for domestic uses. An exit survey helped the research team note demographic details about the household and their living arrangements. It also allowed us to clarify the efficacy of the tool for recording water access, storage, and use practices in the specific context of the participant household and their neighborhood.

In contrast to materially-focused ethnographic methods developed to study water networks (cf. Anand, 2017), the diaries take an embodied, feminist, intersectional approach (Truelove, 2019) and utilize participating households' daily water access and use practices to map Tiruppur's water governance. The tool enables us to trace the hybrid configurations that the households interact with, the scales at which they do so, the politics of their engagement, and the insecurity that they face at the intersection of multiple dimensions and infrastructures to chart out possible solutions for reducing disparities through equitable water provisioning.

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Key Words: water infrastructure, hybrid governance, inequalities, engaged research, ethnography

TRACK 8 – LAND USE POLICY & GOVERNANCE

TRACK 8 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS FOR SESSIONS

SHRINKING CITIES – POLICY RESPONSES AND NEW PLANNING APPROACHES
Pre-Organized Session 22 - Summary
Session Includes 202, 265, 266, 283, 405

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The shrinking city phenomenon is a multidimensional process, comprising cities, parts of cities or metropolitan areas that have experienced dramatic decline in their economic and social base. Shrinking cities can be defined as 'urban areas that have experienced population loss, economic downturn, employment decline and social problems as symptoms of a structural crisis'. Urban decline and the loss of employment opportunities are closely linked in a downwards spiral, leading to an out-migration of population. The complexity of factors enhances the need to embed policies that address shrinkage into local planning instruments and regulations. Applying the 'right' strategies when it comes to the future development of a shrinking city seems to be crucial. The realities of shrinking cities show a diverse picture of how shrinking cities are perceived in the respective locales and which policies or revitalization strategies are applied. Papers of this pre-organised session will showcase differing responses at municipal level to the challenges of shrinkage from different countries.

Objectives:

- Will shrinking cities be the new spaces for creativity and productivity, or will the downwards spiral prevail?
- In how far do these contested spaces offer new modes of revitalization, and what seem to be the options?
- What kind of planning approaches are needed when facing the specific realities of shrinking cities?

CHALLENGES AND OPPORTUNITIES OF WELCOMING REFUGEES IN SHRINKING CITIES
Abstract ID: 202
Abstract within Pre-Organized Session 22

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Some European shrinking cities made headlines for welcoming refugees in the course of the so-called "European refugee crisis". Examples are the Italian town of Riace [1] or the German town of Altena [2]. Similarly, larger shrinking cities in the U.S. show how entire neighborhoods were revived through the resettlement of refugees [3]. These are examples for how shrinking cities – often in desperate need for inhabitants – can help themselves by helping refugees. However, while the argument of sufficient vacant housing for refugees is strong in times of rising refugee numbers, long term considerations must go

beyond mere accommodation (Meier 2018): What are the contextual factors that influence whether or not refugees can help revitalize shrinking cities (e.g. labor market, political climate, availability of social services)? A systematic analysis of the opportunities of and challenges to revitalization processes through refugees is missing thus far. The paper focusses on the actors involved in the integration of refugees and their perception of refugees as 'placemakers' in a German and U.S. shrinking city.

Shrinkage and forced migration will be understood as social processes which are of global and local character (see for example Swyngedouw 2004; Fol/Cunningham Sabot 2010; Massey 1995; Glick Schiller/Çağlar 2015, 2018). This allows for an understanding of the multi-level processes linked to shrinkage and forced migration in an unevenly globalized world, where not only some peoples, but also places are 'left behind'.

The paper will focus on the local processes connected to shrinkage and their impact on refugees. It contributes to a growing body of research which emphasizes the spatial dimensions in refugee research and the meaning of place and belonging connected to it, as well as to a growing body of literature on the social dimensions of urban shrinkage in shrinking cities research.

The results of the paper can be of interest for the fields of urban planning, critical geography, and refugee studies, as well as for urban planning and refugee integration practitioners.

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[1] See The Guardian "In Italy's 'hospitality town', migrants fight to save mayor who gave them a new home" (07/10/2018), online: https://www.theguardian.com/world/2018/oct/07/migrants-fight-save-riace-mayor-who-gave-them-home, last accessed 03/03/2020.
[2] See UNHCR "'Zum Wohl der Flüchtlinge und seiner Stadt': Bürgermeister von Altena ist europäischer Finalist des Nansen-Preises von UNHCR" [,For The Wellbeing of Refugees and his City'. Mayor of Altena is European Finalist of the UNHCR's Nansen Price], online: https://www.unhcr.org/dach/de/25640-zum-wohl-der-fluechtlinge-und-seiner-stadt-buergermeister-von-altena-ist-europaeischer-finalist-des-nansen-preises-von-unhcr.html, last accessed 03/03/2020.
[3] See for example Cleveland's Dream Neighborhood (Day 2017).
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Key Words: Shrinking cities, Refugees, Diversity, Urban Development, governance

RACIALIZED POVERTY: THE LIMITS TO PLANNING THEORY AND PRACTICE IN AMERICAN DISTRESSED CITIES
Abstract ID: 265
Abstract within Pre-Organized Session 22

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Racialized poverty, a correlate of vacant land, abandonment, and disinvestment, is a constant occurrence across declining and growing cities in North America. Yet conventional planning history and theory typically neglect its importance or deals with it as a special problem of central cities, and more recently of inner suburbs, with particular focus on the Great Lakes Region and the Midwest.

Suburbanization, deindustrialization and racialization have been identified as major factors in explaining land abandonment in American and Canadian Rustbelt cities, but Hackworth (2016) finds racialization to be the major factor explaining differences between the two regions. "In the United States, these processes focused on containment of African Americans and directly contributed to land abandonment by undermining the equity of African- American cities, neighborhoods, and people. In Canada, these processes focused on exclusion of Blacks (and other visible minorities) from the country. They were motivated by similar logics but led to policy outcomes that had a very different impact on land abandonment" (p. 282).

Drawing on points raised by Roy (2011)Porter (2010) and others, emphasizing unlearning the colonial cultures of planning, this paper historicizes aspects of American settlement planning, often absent in conventional planning history, and also reviews scholarship on racial capitalism (Harris 1993 and Leong 2013) as well as recent research on the racial wealth gap interpreted as the most recent example of how homeownership, under racial capitalism, fails to provide inter-generational wealth accumulation for Black people the way it always has for white people" (Markley, Hafley, Allums, et al. 2020:15). The paper claims that viewed through the lens of racial capitalism, land abandonment, disinvestment and concentrated poverty, these hot spots of inequality clearly pervade both declining (Rustbelt) and growing (Sunbelt) American cities, the latter vividly illustrated by the case of Dallas, TX (Igoufe 2018). It closes with an assessment of the challenges that the these hot spots of inequality pose to equity planning (APA 2019).

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Key Words: racialized poverty, land abandonment, disinvestment, racial capitalism

POST-SOCIALIST RESPONSES TO SHRINKING CITIES: COMPARATIVE LESSONS
Abstract ID: 266
Abstract within Pre-Organized Session 22

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Without exception, post-socialist countries are experiencing urban shrinkage in varying degrees. Urban shrinkage is the norm in most EEC countries. In Russia, urban shrinkage and westward drift of its population is seemingly entrenched. China, a high growth economy, has also experienced urban shrinkage which was finally acknowledged by its State Council in April 2019. Urban shrinkage in post-socialist countries have resulted from the transformation of their economies towards more market-oriented policies and concomitant social and political changes. These challenges are exacerbated by their diverse socialist

legacies and available opportunities post transformation (Haase et al., 2016, Li and Mykhnenko, 2018). Most post-socialist countries adopted a range of responses to manage urban shrinkage. Their responses and the context of their responses challenge us to reconsider the literature on how and why policies towards shrinking cities evolved (Pallagast et al., 2017). Drawing on case studies from China, Russia and several EEC countries, this paper explores four key lessons. First, not all local governments in every country consider out-flow of population as a negative development. There are notable examples of local governments actively engaged in encouraging outmigration without concern about the potential impacts of shrinking populations. Second, it is necessary to understand the legacy of post-socialist countries in order to comprehend why some policies applicable elsewhere may not be relevant. Third, knowledge of the prevailing governing system in a specific country is crucial to understand the limitations that are imposed on local officials confronted with urban shrinkage and what, if any, avenues for action are conceivable. Forth, innovative responses towards return migrants and the opportunities they represent to restructure the local economy are new and different approaches that deserve attention. These lessons have the potential to broaden our understanding of shrinking cities and policy responses beyond the experience based on industrialized economies of western Europe and North America.

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Key Words: shrinking city, post-socialist city, China, Russia, Central Europe

MITIGATION STRATEGIES TO IMPROVE RESILIENCE IN SHRINKING CITIES: ENERGY INFRASTRUCTURE LOCATION IN NW AND NE ENGLAND
Abstract ID: 283
Abstract within Pre-Organized Session 22

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This paper considers the question of resilience to climate change-related events in the context of shrinking cities. Such cities are very commonly encountered throughout the world; typically, they display symptoms of economic crisis in conjunction with demographic decline (Pallagst et al 2014).

With respect to global climate change, cities face a complex set of choices about how best to pursue environmental sustainability in parallel with other goals (see for example Caparros-Midwood et al 2019). Shrinking cities in particular must often work with a highly challenging situation, with a decline in location taxation receipts constraining their options (Mulligan 2012).

We ask the question whether the special circumstances of shrinking cities may however also present new opportunities to pursue mitigation and adaptation measure to improve their resilience in the face of climate change. We focus on the re-planning of energy infrastructure, for example to redevelop ex-industrial sites as locations for renewable energy sources such as hydroelectric plants, wind and solar farms.

Case studies in northern England – Greater Manchester in the north-west, and the Humber area in the north-east (comprising parts of Lincolnshire and the East Riding of Yorkshire) – are used to examine

situations where new renewable energy infrastructure is planned, or has already been installed. Population and economic figures are taken from recent census data. Information on existing and new infrastructure is taken from municipal and commercial sources, and semi-structured interviews with key stakeholders.

This forms part of an ongoing programme of study, with the objective of producing tools to support policy making at the municipal level. This aims to help shrinking cities to mitigate climate related crises, to respond appropriately when they occur, and to recover from them with vigour.

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Key Words: Shrinking cities, resilience, climate change, mitigation strategies, energy infrastructure

EQUITABLE INCLUSIVE SUSTAINABLE CULTURAL PLANNING IN SHRINKING CITIES AND THE CRITICAL ROLE OF TECHNOLOGY AND DATA IN URBAN INNOVATION
Abstract ID: 405
Abstract within Pre-Organized Session 22

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This paper considers the question of alternative approaches to equitable cultural planning for sustainable economic development, and the critical role technology, digitization and data can play in a community-driven strategic framework plan, through alternative politics and through a bottom-up approach in the context of shrinking cities. Such cities are commonly encountered throughout the world; typically, they display symptoms of economic crisis in conjunction with demographic decline (Pallagst et al 2014).

Case study: East Saint Louis in Illinois and Saint Louis in Missouri

East Saint Louis in Illinois and Saint Louis in Missouri case studies are examples of how a process for an equitable cultural planning and development can take shape. East Saint Louis could potentially capitalize on its unique, rich history and cultural legacies as a catalyst not only for reconciliation but also for equitable, sustainable economic development, by building infrastructure to support its unique arts and cultural assets, through place-making, and through making space for creative sector entrepreneurship. Policies supporting the community initiative will play a critical role during the implementation phases.

The findings of the case study could potentially act as a benchmark and contribute to the discourse on "Equitable Cultural Planning and Development" making a case for the necessity of transforming cultural development's existing role as an "engine for growth' and elevate it to a tool that can not only spur economic activity but also effectively contribute to the abatement of existing social and economic imbalances within our communities (Richardson – equitable cultural development 2015

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Key Words: Shrinking Cities, Equitable Cultural Planning, Creative Cities Creative Economy, Digital Civil Society, & Digital Governance, Urban Technology

SHRINKING CITIES: INTERNATIONAL EXPERIENCES – LEARNING FROM JAPAN?
Pre-Organized Session 53 - Summary
Session Includes 54, 192, 269

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Demographic change is a global phenomenon affecting all countries worldwide. Japan is facing a massive ageing and shrinkage of its population due to low birth rates and a restrictive immigration policy. The population of Japan has been decreasing since 2005, in what has been described as a "depopulating society". Japan is, for instance, thirty years ahead of the development in ageing European countries. The research on shrinking cities in Japan gives insights into the future of our cities and provides a set of innovative solutions to issues that have to be addressed in many countries in the near future.

Objectives:

- What are the specificities of shrinking cities in an international context?
- What can we learn for shrinking cities from international comparisons?
- What kind of planning approaches are needed when facing the specific realities of shrinking cities?

SHRINKING CITIES - NEW REQUIREMENTS FOR PLANNING CULTURES
Abstract ID: 54
Abstract within Pre-Organized Session 53

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Various institutional and cultural settings have shaped spatial planning systems with comparable features; however, such systems have been adapted to specific cultural, normative, and spatial conditions. In line with the growing demand for international knowledge exchange in urban and regional planning, planning cultures have recently come into sharper focus (Sanyal, 2005; Knieling and Othengrafen, 2009; Levin-Keitel and Othengrafen, 2017). Moreover, it has become widely acknowledged that many cities in Europe and the US have to deal with challenges posed by long-term demographic and economic changes (Wiechmann and Wolff, 2013). This also holds true for Japan (Uemura, 2015).

As regards instruments and policies, Pallagst and Wiechmann (2005) hypothesize that planning for shrinking cities does not work under the preconditions of urban growth, but requires a slightly different paradigm shift. For international comparative research, it remains to be seen whether this change in planning culture will be a general trend or a notion driven by local and national specifics.

The purpose of this presentation is to discuss planning cultures and shrinking cities, the interconnectedness of which has not yet received a substantial amount of attention. The presentation will feature the results of a research project tracing changes, modifications of policies and strategies in shrinking cities.

The objective of the research presented here is to comparatively investigate changes in planning cultures in view of shrinking cities in the USA, Germany and Japan. The cities used in the case study (Cleveland, Bochum and Nagasaki) were selected based on the most similar systems approach (according to Pierre, 2005). This choice was also motivated by the results of the EU COST Action Cities Regrowing Smaller (CIRES), which showed that, of all the European cities with more than 10,000 inhabitants, those with a population between 300,000 and 500,000 are most often affected by shrinkage (Wiechmann and Wolff, 2013). All three of these cities have similar population levels, shrinkage patterns and industries. Additionally, all three cities have applied major strategies to find innovative solutions to shrinkage-related problems.

The case study research applied a contextualized comparative approach to find variations, and common features and differences were put at the center of the investigation (Booth, 2011). The findings allow us to detect interdependencies between changes in planning cultures and societal changes in the wake of shrinkage, and finally to derive hypotheses for both the future-oriented development of shrinking cities, and the development of planning cultures based on the comparison of cultural settings.

While the lasting effects and successes of the policies and strategies applied in shrinking cities remain to be seen, their influence on a broader knowledge exchange, contextualization and innovation in the sphere of planning cultures became evident (Pallagst et al, 2019). Case-study-based empirical research sheds light on the complex interdependence of planning, its instruments, challenges and, ultimately, planning cultures.

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Key Words: shrinking cities, planning cultures, revitalization, land use policies, comparative studies

LEGAL AND PLANNING SYSTEMS FOR SHRINKING CITIES IN JAPAN
Abstract ID: 192
Abstract within Pre-Organized Session 53

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Since 2014, the government of Japan has sped up its policy responses to urban shrinkage and developed new special acts, as well as reforming existing acts, in response to the Great East Japan Earthquake and continuous population decline. The effects of such shrinkage are various, ranging from urban development and industry to social care and education. It is difficult to review all related policies and check the progress of policy reforms on issues related to shrinking cities. Indeed, the number of reformed policies is still growing and requires frequent review. The question remains of which policies to monitor and how efficiently to maintain oversight on legal systems related to urban shrinkage.

This study proposes an efficient way to grasp the legal system on specific topics via jurisprudence visualisation using the text mining tools of R, an open-source statistics and graphics software, and MeCab, which provides specifications for Japanese text in Japan, to analyse objectively and completely the interconnections among the related acts and plans related to shrinking city policies, thus preventing

oversights. Text mining requires a good, specific dictionary, which was unfortunately not available for this topic. We therefore had to develop a legal and planning noun dictionary based on information drawn from the government website.

Japan has 8,383 laws and acts as of the end of 2019. This study succeeded in finding the laws and acts related to shrinking cities relatively quickly – within an hour or so. Text mining began with the 'Act on Special Measures concerning Urban Reconstruction', including the 'Location Normalisation Plan', which is a core policy for condensing urban areas within the shrinking cities of Japan. Acts on Special Measures are used for intensive response, for a limited period or purpose, and this particular act focused on urban renewal. The text mining process was repeated four times, which revealed the layered nature of the relationships among the laws and acts. Of the laws and acts considered, 68 have direct links to Act on Special Measures concerning Urban Reconstruction, while 650 had two degrees of separation, 933 had three degrees and 935 had four degrees of separation. These results suggest that condensing urban areas is related to various aspects of society, so the special measure naturally relates to city planning, urban redevelopment, railway services, water supply, waste water management, heat supply, anti-disaster preparedness, urban park, Public Private Partnership/Private Finance Initiative, environmental impact assessment, building standards, road, housing, land scape management, urban green space, solid waste management, property registration, agriculture, social and child care and vocational training.

This approach can be applied in future research to other laws and acts on shrinking cities in Japan to develop an overview on such policies, including the Act on Overcoming Population Decline and Vitalising the Local Economy.

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Key Words: jurisprudence visualisation, text mining, shrinking cities, network graph, R

YOU'LL LIKE IT HERE, CAN YOU STAY? LOCAL STRATEGIES TO ATTRACT NEW HOUSEHOLDS IN JAPANESE AGING AND SHRINKING SUBURBS
Abstract ID: 269
Abstract within Pre-Organized Session 53

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As depopulation in Japan is accelerating, most of its cities is coping with the consequences of urban decline. In 2015, vacant houses represent more than 13.5% of the national dwelling stock. In aging and shrinking suburbs in particular, they contribute to deteriorate the living environment of remaining residents.

Suburban Baby boomers were expected to age where they bought their home. Since the beginning of the Lost Decade (1990s) however, land & real estate values have plummeted around big cities. Without enough life savings to bear the cost of a residential relocation, landowners over 65 must remain in areas with rising vacancy, which may damage their health. To avoid this scenario, maintaining demographic equilibrium in aging neighborhoods has become a priority of local agendas. But the suburbs of Japan's bigger cities, which embodied the newfound affluence of middle-income families in the postwar years,

are less attractive to younger age groups. This phenomenon is linked to changes in labour and housing markets that co-emerged towards the turn of the century, and destabilized the lifecourses of generations following Baby boomers.

Although it does not minimize the severity of suburban decline in Japan, our paper questions the idea that the Japanese "suburbia" is no longer meeting the expectations of young adults as well as elderly. By analyzing the results of field surveys conducted in the Osaka Prefecture, we discuss why and how laudative discourses about the outcomes of "back-to-the-city" movements underestimate the number and motives of households who decidedly stay in the suburbs. And since these residential mobilities are less documented than the "back-to-the-city" movement nowadays, the strategies that shrinking suburbs try to implement to incorporate these outward mobilities more consistently into their revitalization projects remain under-investigated. Through a study of the profiles of the local services and potential home-owners involved in newly created land bank systems, we want to shed more lights on the challenge of maintaining residential stability in hollowing-out, aging suburbs.

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Key Words: Aging, Housing vacancy, Shrinking suburbs, Revitalisation, Japan

COMPARATIVE PERSPECTIVES ON VALUE CAPTURE
Pre-Organized Session 55 - Summary
Session Includes 207, 208, 209, 210, 211

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Value capture refers to the idea that certain public interventions increase the value of undeveloped/re-developable land and thus, the public sector should capture the value increment for the public benefit. However, critical parameters of value capture such as, the magnitude of the value being created, who should capture this value, and for whom, vary considerably depending on the political, legal, economic, and cultural contexts. Existing literature largely ignores such nuance, treating value capture as a concept that could be applied universally. This session explores the variegated meanings and utilities of value capture under different political and economic institutions and cultural contexts. Experiences from various parts of the US and abroad, including Taiwan, Vancouver, Mumbai, and Sao Paulo, are brought together to address questions such as, how value, as an economic construct, gets created, what it means to capture such value, and who has the right to claim it. The comparative perspectives would open up an opportunity to discuss how the benefits of value capture can be distributed more widely and evenly, leading to equitable development outcomes.

Objectives:

- define the concept of value capture and its application under various political and economic institutions and cultural contexts

RECOGNIZING, CAPTURING, AND DISTRIBUTING VALUE: WHEN DOES VALUE CAPTURE TAKE PLACE, WHY, AND FOR WHOM?
Abstract ID: 207
Abstract within Pre-Organized Session 55

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A myriad of public interventions, spanning from direct infrastructure investments to regulatory reliefs, can add value to real estate development projects. When the public sector attempts to reclaim such value, experience from practice tells us that the magnitude of the value that's being created and how the reclaimed value should be distributed are deeply contested issues, answers to which are influenced by politics (McAllister, Street, & Wyatt, 2016; Weber 2019; Wolf-Powers, 2020), culture (Dunning et al., 2019), and legal institutions (Booth, 2012; Muñoz-Gielen, 2014). In the U.S., in particular, value capture opportunities are often left unclaimed by the public sector, partially due to the strong defense for private property rights that defines the country's identity (Calavita & Mallach, 2009).

In this session, I present findings from my investigation of how local politics, planning culture, and regulatory regimes shape the perception of actors engaged in policy discussion around value capture opportunities. Two places in Florida are analyzed as cases. The first is Citrus County, where the Suncoast Parkway is being built through. The Parkway's extension plan has already been projected to uplift the land value around major intersections, presenting an opportunity for value capture. The second case is the City of Orlando, where project-by-project rezoning has been undertaken to increase the allowable density and intensity of uses for real estate development projects. Under these two different contexts, I ask how the actors involved in the respective policy discussion understand the value that's being created and who should benefit from the value increase. I also ask whether these opportunities are being framed as value capture opportunities and if not, why. Ultimately, my goal is to identify the ways in which public discourse around value capture opportunities can be altered so that the value that is being created can be claimed by the public sector and be used for outcomes that can further social justice, responding to Fainstein's call (2010; 2012).

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Key Words: value capture, real estate development, planning gain, developer obligations, land use exaction

CHANGING THE POLITICS OF VALUE CAPTURE: THE CASE OF GOWANUS, BROOKLYN
Abstract ID: 208
Abstract within Pre-Organized Session 55

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In 2018, community based organizations in Brooklyn, New York engaged the real estate consulting firm David Paul Rosen and Associates (DRA) to estimate the increase ("uplift") in value that a much-anticipated up-zoning in the Gowanus neighborhood would generate for those who own land there. Working from this uplift figure (between $108 million and $1.3 billion in residual land value was calculated, varying with the capitalization rate used to estimate the income value of new development), the advocates then urged that the New York City Department of City Planning create a mechanism to sell development rights from New York City Housing Authority campuses into the rezoning area, generating money that would directly fund repairs at Gowanus Houses, Wyckoff Gardens, and Warren Street Houses, three public housing complexes immediately adjacent to the rezoning area. Their proposal, laid out in the 2019 report Public Action: Investing in a just and equitable Gowanus Rezoning, embodies the principles of what the groups termed public value recovery: namely, that the public sector should claim the community land value it creates through regulatory actions and investments, and then deliberately use that value to redistribute resources and benefits to those who are most affected by public disinvestment from social goods.

This paper explores the political environment in which the advocates formulated and pursued this claim on value. In New York and around the United States, municipal policy makers have embraced value capture instruments (tax increment financing, transfer of development rights, impact fees and exactions) as progressive tools for governing and public provisioning under conditions of fiscal scarcity. However, many actual practices of value capture – tax increment financing in Chicago perhaps most notoriously – have exacerbated unaffordability and normalized rent-seeking behavior on the part of property owners. The effort to focus attention on the plight of public housing tenants in the context of the speculative free-for-all surrounding the public conferral of value on property in Brooklyn's Gowanus neighborhood was an effort to disrupt value capture business-as-usual and catalyze a reorientation of public priorities. As one of the authors of the Public Action, Public Value report, I will speak to the practical success of this effort. As an academic researcher, I will speak to the larger political context that brackets it, drawing on the literature on community practice and forms of engagement with and resistance to neo-liberalism.

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Key Words: value capture, public housing, community organizing

WHO DECIDES? THE PROVISION OF SOCIAL HOUSING THROUGH LAND VALUE CAPTURE IN VANCOUVER AND NEW TAIPEI CITY
Abstract ID: 209
Abstract within Pre-Organized Session 55

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In this paper, we situate the use of land value capture more specifically in planners' determination of public good to be financed through recuperated gains from private real estate development. In the existing scholarship, a great deal of focus has been on value capture mechanisms and consequences of their application (Hagman and Misczynski, 1978, Ingram and Hong, 2012). A growing body of work from the political economy perspective examines the global ascendancy of value capture in public finance (Hyde, 2018, Sclar, 2020). One aspect that is less explored is how planners arrive at the particular decision of what public goods should be financed. The importance of this question is highlighted by Laura Wolf-Powers (2010) in her discussion of the conditions under which value is captured as 'just compensation' for the affected communities in the vicinity of a development project or more progressively as 'distributive justice' for disadvantaged populations.

We use a case study approach to tease out planners' roles in leveraging real estate markets to provide social housing in Vancouver, Canada and New Taipei City, Taiwan – two cities experiencing escalating real estate prices and great pressure for affordable housing options. Despite the need, whether social housing should be the public good financed by a development project can often be contested. Who decides whether social housing should be funded by the uplift in land value instead of other public good such as schools, libraries, and community centers? And, what roles do planners play in this decision making?

In Vancouver, a predominant mechanism used to provide social housing is through the city's requirement for Community Amenity Contributions (CAC) as part of the rezoning conditions when additional density is granted to developers. CACs are intended for a range of public facilities, among which social housing is only one competing possibility. The public good funded by CAC is determined through a negotiation process involving the developer, community residents, planners, and city council. In New Taipei City, we observe planners playing a dominate role in prioritizing social housing as the primary public good to be funded through land value capture. Social housing has become an important priority as part of a nation-wide policy response to help quell the social discontent with skyrocketing housing prices. Planners' authority comes from their tremendous approval power that can sidestep community engagement in the upzoning review process. Through the case studies in two different planning cultures, the paper draws attention to the social and institutional basis that enables planners to prioritize social housing over other public goods in exchange for development rights.

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Key Words: Value capture, Social housing, Public good, Vancouver, New Taipei City

FINANCING, EQUITY AND NEIGHBORHOOD REDEVELOPMENT: THE EVOLUTION OF VALUE CAPTURE IN KANSAS CITY
Abstract ID: 210
Abstract within Pre-Organized Session 55

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Kansas City, Missouri is a racially segregated, medium size city in the American heartland experimenting with value capture as a strategy for transit-led redevelopment. Over the past decade Kansas City officials have proposed three value capture districts to build enhanced transit into different neighborhoods. The first value capture district covered the city's downtown core and adjacent arts districts and was approved by voters in 2012 (Fischer 2019). The second value capture district was proposed in 2014 to connect the downtown core with low income and minority communities on the city's east side. Voters rejected this second proposal on equity grounds, challenging the city's claims that the value capture financing protected against gentrification and would produce benefits for the local residents. Learning from both this success and failure, the city put forth a third value capture financing scheme to expand the rail line south to more affluent neighborhoods and the University of Missouri – Kansas City campus that voters approved in 2017.

This paper examines the politics and financing details for these three value capture financing proposals to gain a better understanding of how the critical parameters of value capture can change over time and across neighborhoods within a single city. Based on field work and structured interviews conducted with elected officials, planning staff and local advocates between 2014 and 2018, I showcase the trade-offs, assumptions and equity frameworks employed by value capture supporters and opponents in Kansas City to investigate the extent to which the value capture financing structures align with or challenge abstract equity claims. I also identify how value capture implementation supported beneficial policy outcomes, such as the decision to appoint a directly elected board to manage the third value capture district, and the 2018 adoption of local policies aimed at creating more affordable housing in value capture districts. Overall, however, I illustrate how local policies related to value capture interact with neighborhood development histories, pro-market ideologies and a reductionist state environment to limit the use of value capture as an equitable development tool. The paper concludes with a discussion of how local stakeholders can surmount formal and informal barriers to equitable develop (Wolf Powers 2019) supported by value capture financing based on lessons from the Kansas City case.

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Key Words: Value Capture, Neighborhood Redevelopment, Transport Oriented Development, Governance

LAND-BASED FINANCING: PARIS THEN, MUMBAI NOW
Abstract ID: 211
Abstract within Pre-Organized Session 55

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This paper interrogates the growing popularity of a new land-use planning instrument, the transfer of development rights (TDR). Public officials in varied contexts, from New York and Boston to Mumbai to Taipei, are turning to TDR as a flexible, market-oriented instrument for regulating urban space and urban resources. The TDR program is a form of what planners now call "land value capture," where land and its appurtenant development rights becomes key sources of public finance. The TDR program is a special type of "land value capture" where it is not the increment or surplus from terra-firma land that is in question, but the surplus from development rights which are linked to land via floor area ratios (FAR). In

Mumbai, the rise of vertiginous new skyscrapers is enabled by the TDR program which allows developers to separate development rights from a specific plot of land, to transfer these development rights (or air rights) across space, and then to stack them onto different plots of land. This paper analyzes Mumbai TDR program via a historicized reading of Baron Hausmann's rebuilding of Paris under the Second Empire. The TDR program, as a form of land-based financing for infrastructure, relies on planning institutions and instruments that were first conceived of in nineteenth-century Paris. Notwithstanding their historical continuities, the new TDR program of Mumbai is situated within the post-1980s context of globalization and fiscal austerity, and is a specific response by local governments to the municipal budget crises of the post-1980s and the fiscal pressures to look for new sources of off-budget resources to fund public infrastructure. How does a reading of Mumbai now via Paris then open up new insights on the continuities and contrasts of land-based financing for public services? And how can a historical reading of the post-1980s TDR program enable planners to govern these new markets in air rights more effectively?

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Key Words: Land-based financing, Transfer of development rights, Skyscrapers, Mumbai

SMART(ER) CITY OR BRAVE NEW NEIGHBOURHOODS? PLANNING FOR DENSIFICATION
Pre-Organized Session 160 - Summary
Session Includes 891, 892, 893

WALKS, Alan [University of Toronto] alan.walks@utoronto.edu, organizer

This session explores the rise of density and 'smart city' technologies within the downtowns (and even suburbs) of many contemporary large cities. It especially examines and compares density planning in Toronto (Canada) and London (UK). Papers in this session examine how land-use planners in each city have negotiated density requirements and changes, and how certain developers have sought to use 'smart city' technology in new developments. It examines some of the effects of this in terms of land and real estate speculation, gentrification, and displacement, and in turn the changing ability of such cities to nurture creativity. It theorizes how density, smart(er) cities, and planning are related in these cities, and explores what planners can do to affect more equitable development through densification and land-use planning of smart cities.

Objectives:

- to understand how planning has facilitated densification, with special reference to Toronto (Canada) and London (UK)
- to understand the implications of densification and smart city technologies, including for gentrification processes, displacement, and t
- to understand how planners can affect more equitable development through densification and build smart(er) cities

PLANNING TORONTO THE SMART CITY: SIDEWALK LABS, FINANCIALIZATION, AND "SMART CITY" URBANISM
Abstract ID: 891
Individual Paper Submission

GRISDALE, Sean [University of Toronto] sean.grisdale@mail.utoronto.ca, presenting author

In October 2017, Alphabet's "urban innovation" subsidiary Sidewalk Labs announced its ambitious plans to develop a "smart neighborhood" on an undeveloped 12-acre section of Toronto's waterfront. Years later, and despite mounting criticism from local groups concerned with the projects' very premise (#BlockSidewalk, 2019), the prospect of the project going forward remains a real possibility. Responding to the project's novel and controversial ambitions, this paper historicizes the proposal against both the emergence of the "smart city" as a paradigm in planning discourse, as well as the broader "financialization" that has characterized the Canadian economy in recent decades (Zhang, 2019). First, through a discourse analysis of newspaper articles going back to 1987, I trace the genealogy of this "smart city" concept, situating it amidst a broader history of global (and local) economic restructuring. I affirm that today, the "smart city" is primarily deployed through various forms of "corporate storytelling" (Söderström et al, 2014; Morozov and Bria, 2018) significantly by technology companies increasingly interested in matters of urban planning and governance (Wiig and Wyly, 2016). I also survey that literature in critical urban geography (Hollands, 2008) working to deconstruct the term, to understand its trajectory both theoretically and as a subject of empirical research in the field. Finally, using Sidewalk Toronto as a case study, I investigate how this discourse has been received in the city since its announcement almost three years ago, thereby contextualizing a more local conversation amidst both a historical genealogy of the "smart city concept" and more recent critical understandings of how financialization is structuring the urban process in different jurisdictions.

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- Wiig, A. and Wyly, E. (2016). Introduction: Thinking through the politics of the smart city. Urban Geography, 37(4), 485–493.
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Key Words: Financialization, Smart Cities, Sidewalk Labs, Governance, Privatization

DIY AND PLANNING: MAKING SPACE IN THE CREATIVE CITY
Abstract ID: 892
Individual Paper Submission

MARCH, Loren [Loren March] loren.march@mail.utoronto.ca, presenting author

This paper discusses practices of 'creative place-making' in Toronto and the complex

relationships that are formed between creative practitioners and the places they create. In particular, it examines the impacts of Creative City planning on grassroots communities, and the emergence and increasingly crucial role of more informal and do-it-yourself (DIY) live/work spaces in 'Creative' cities. As geographies and conditions of work have shifted, and affordable, accessible and appropriate workspace has become increasingly rare, creative practitioners from across various fields are forced to find alternative ways to continue their practices while continuing to live in downtown areas, in proximity to the places where their work is seen. I examine the practice of DIY as a form of 'self-provisioning' (Kinder, 2016), a strategic tactic and response to planning that offers the creative practitioner a level of spatial stability in the face of rapid and often arts-led gentrification, development and upscaling in the

urban centres. As important sites of urban creative production, grassroots arts ecologies like DIY scenes receive little attention in Creative City planning frameworks, yet become entangled in arts-led urban development in complicated ways (Bain and March, 2019; Bain and McLean, 2012). This paper makes a comparative gesture, detailing the emergence of DIY scenes in both Toronto, Canada and London, England, cities with unique culture- and arts-led planning contexts. I argue that DIY spaces are increasingly necessary for creative practitioners to 'make do,' and continue their work in changing cities where they have fewer and fewer options, in spite of the deployment of Creative City discourse that might suggest otherwise.

Citations

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Key Words: DIY, urban planning, Creative City, affordable housing, gentrification

PLANNING CONDOISM: THE NEW PLANNING REGIME IN TORONTO AND ITS IMPLICATIONS
Abstract ID: 893
Individual Paper Submission

WALKS, Alan [University of Toronto] alan.walks@utoronto.ca, presenting author

The evolution of an urbanism rooted in Fordist development to one based on post-Fordist restructuring, financialization, neoliberalization, deindustrialization, and gentrification, is highly related to the favouring of condominium tenure and development as a primary driver of contemporary urban growth. The building of 'condos' is now the largest 'industry' in many North American cities, from Miami to Vancouver. Toronto perhaps exemplifies both the relationships between condo development and these other processes (financialization, neoliberalization, deindustrialization, etc), as well as how this affects planning regimes. In this paper, I demonstrate how a new planning regime has arisen in Toronto based around the promotion of 'condoism' justified by arguments around densification, mixed land use, transit accessibility planning, and urban diversity. I explore the contours of this new planning regime, as well as its implications for understanding the evolution of socio-spatial inequalities in the city, and for theorizing the role that planning performs in the restructuring of urban economies more generally. The paper engages with arguments put forward by Susan Fainstein, John Forestor, David Harvey, Ananya Roy, and others, in using this case study to challenge existing planning theory in the pursuit of a fuller understanding of the role of land-use planning in urban development.

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Key Words: land-use planning, condoism, housing, governance, density

TRACK 8 – ROUNDTABLE ABSTRACTS

INDIGENOUS PEOPLES' ENGAGEMENT IN URBAN PROPERTY DEVELOPMENT: THE PARADOXES AND AMBIGUITIES IN SETTLER-COLONIAL CONTEXTS
Abstract ID: 728
Roundtable

BARRY, Janice [University of Waterloo] janice.barry@uwaterloo.ca, participant
THOMPSON-FAWCETT, Michelle [University of Otago] michelle.thompson-fawcett@otago.ac.nz, participant
BERGHAN, James [University of Otago] james.berghan@otago.ac.nz, participant
HOSTOVSKY, Charles [Dalhousie University] charles.hostovsky@dal.ca, participant
AGYEMAN, Julian [Tufts University] julian.agyeman@tufts.edu, moderator

In settler-colonial contexts, property is inextricably linked to Indigenous dispossession (Dorries, 2017; Porter, 2010). But, somewhat paradoxically, property and property development are also an avenue for Indigenous peoples to assert physical, cultural, political and economic presence in the urban environment (Ruske, 2014). This potential is particularly prevalent in Canada and New Zealand, where the examples of Squamish First Nation's proposed 6000-unit housing development in Vancouver and Ngāi Tahu tribe's proposed 350-unit development in the heart of Queenstown have captured the attention of both the national and international media (Halliday, 2020; Price, 2020), as well as the local planning agencies that often lack the conceptual and practical tools needed to respond appropriately to such assertions of Indigenous political and economic self-determination. To date, planning scholars have been noticeably absent from these discussions, with only a very small number of papers published on the topic. The roundtable works to address by this gap by bringing together scholars that are actively engaged in research and community-based teaching on the relatively recent phenomenon of Indigenous-led property development. The panelists will consider how many of the governance categories, identities and divisions of labour that implicitly or explicitly frame the political economy of urban property development are now being called into question. Attention will also be paid to the implications of property and property development in terms of how planning is conceived and practiced in settler-colonial contexts.

Citations

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Key Words: Indigenous peoples, property, urban development, governance

TWENTY YEARS OF SMART GROWTH: PROGRESS AND FUTURE
Abstract ID: 766
Roundtable

LEWIS, Rebecca [University of Oregon] rlewis9@uoregon.edu, participant
KNAAP, Gerrit [University of Maryland] gknaap@umd.edu, moderator
CHAKRABORTY, Arnab [University of Illinois] arbab@illinois.edu, participant

Although its precise birth date remains uncertain, "smart growth" is now more than 20 years old. In this roundtable, we look back at the origins of the smart growth movement, examine the successes and failures of smart growth policies and practices, and envision what smart growth will -- and should look like going forward. Our roundtable summarizes our Handbook on Smart Growth which will be published by Edward Elgar in 2021.

Although definitions vary, the EPA defines smart growth as "development that serves the economy, the community, and the environment and changes the terms of the development debate away from the traditional growth/no growth question to how and where should new development be accommodated" (Smart Growth Network 2002). Before the 1990s, state and local efforts to combat sprawl and manage development were called "growth control" and "growth management" and primarily focused on slowing the rate of urban growth and regulating how growth happened. In the early 1990s, a new growth management movement emerged, focused on policies to control suburban sprawl. The smart growth movement focused on how government investments and incentives could facilitate smarter development on a regional level. This new approach aimed to change the focus from stopping or slowing growth to assuring that growth was "smarter" in location, intensity, and form. Important milestones in the launch of this new approach to growth include the EPA's creation of a smart growth network in 1995, the Natural Resources Defense Council's Tool Kit for Smart Growth (1997), the American Planning Association's Growing Smart Legislative Guidebook (1997), and Maryland's Smart Growth and Neighborhood Conservation Act, also passed in 1997.

The Smart Growth Network – a national alliance of more than thirty private sector, public sector, and non-governmental organizations – continues to advance the following ten principles, which constitute the predominant paradigm in land use planning for the last two decades:

- Mix land uses
- Take advantage of compact building design
- Create a wide range of housing opportunities and choices
- Create walkable neighborhoods
- Foster distinctive, attractive communities with a strong sense of place
- Preserve open space, farmland, natural beauty, and critical environmental areas
- Strengthen and direct development toward existing communities
- Provide a variety of transportation choices
- Make development decisions predictable, fair, and cost effective
- Encourage community and stakeholder collaboration in development decisions\

More recently, however, smart growth advocates have begun to address contemporary challenges such as climate change and social equity. The popularity of the term "smart growth" has faded in favor of the terms "sustainable development" and "urban resilience." These new vocabularies connote many of the principles of smart growth, but they also represent a change in focus and a recognition of new challenges, raising questions around the validity of the 10 principles; whether smart growth achieved goals; failures and omissions from smart growth; updated principles; and the future of smart growth.

The roundtable will describe the key findings of the book, including an overview of the history of smart growth & role of smart growth. Then, we address the original principles of smart growth such as mixing land uses, promoting walkability, providing housing opportunities, providing transportation alternatives, and more. Finally, examines issues that were not addressed in the original smart growth principles but have ostensibly been added to the smart growth agenda. These include climate change, social equity, public health, workforce development, smart cities, and more. Then we offers remarks about how smart growth has succeeded or fallen short, and what smart growth version 2.0 might look like going forward.

Citations

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- American Planning Association. 1997. Growing Smart Legislative Guidebook. Chicago, IL: American Planning Association.

Key Words: smart growth, land use policy, growth management

CRITICAL DIALOGUES OF PLANNING, LAND USE POLICY AND URBAN DEVELOPMENT.
Abstract ID: 807
Roundtable

LIVINGSTONE, Nicola [University College London (The Bartlett)] n.livingstone@ucl.ac.uk, participant
WALKS, Alan [University of Toronto] alan.walks@utoronto.ca, participant
MOORE, Susan [University College London (The Bartlett)] susan.moore@ucl.ac.uk, moderator
SHORT, Michael [University College London (The Bartlett)] michael.short@ucl.ac.uk, participant
BUNCE, Susannah [University of Toronto] scbunce@utsc.utoronto.ca, participant
MARCH, Loren [University of Toronto] loren.march@mail.utoronto.ca, participant

This roundtable will discuss approaches to governance, planning and land use policy in the global cities of London and Toronto, and their impacts upon housing provision and urban development. It draws on perspectives from an edited collection entitled 'Critical Dialogues of Urban Governance, Development and Activism: London and Toronto,' compiled by authors based at the University of Toronto and University College London, published by UCL Press in 2020. The analytical approach of the book builds on recent calls for nuanced approaches to comparative urbanism prompted by the work of Robinson (2016). We consider how urban transformations in housing, land use policy and governance can be understood across a diversity of scales, geographies and relational contexts (Ward, 2010); and through varied methodological approaches (both qualitative and quantitative, primary and secondary, as expressed in each of the 22 chapters). As the first publication to critically consider the urban development and governance processes at play in London and Toronto, the book and this dedicated session are relevant to academics and practitioners alike, contributing valuable knowledge to urban scholarship about planning, housing and governance in global cities.

The focus of the roundtable will be to explore how relational manifestations of neoliberalism (Peck & Tickell, 2002), globalisation (Sassen, 2001) and financialisation (Aalbers, 2016) have influenced land use policies for housing and urban development in twenty-first century cities. Broadly speaking, both London and Toronto have experienced how 'hot' residential real estate markets have become increasingly attractive to institutional investors, whilst their development sectors has been characterised by the dominance of private investors, the growth of the private rented sector and the rolling back of public agencies providing social housing. Regulation and policies are consistently shifting in relation to land use policies for housing, as governance mechanisms attempt to address the challenging nuances when planning for, and managing, urban development patterns. In this vein, authors will reflect on the following questions:

- Can comparisons be drawn between how the planning systems in cities like London and Toronto have evolved in response to neoliberalization pressures, and how they have responded to the ongoing 'housing crises'?
- How effective have policies been in dampening land value escalation, managing viability processes and capturing planning benefits for local authorities and communities?

- What factors have been driving the increasing dominance of the private sector in housing development, and the ever diminishing provision of social housing by local authorities? How might ideas around housing 'affordability' be reconsidered?
- Is there a burgeoning role for global investors in the housing markets of global cities, and if so how can they successfully contribute to urban development?
- How might planning systems potentially develop to benefit local communities, diminish social inequities and support public-private partnerships in such variegated and dynamic housing markets? Concluding discussions will consider the near-universal urban problematics emerging through comparisons of housing markets and planning systems of our two study cities, and meaningfully demonstrate the effectiveness of nuanced comparative analysis in increasing our understandings of neoliberal governance and financialisation in global citie

Citations

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Key Words: housing, crisis, governance, financialisation, neoliberalism

LAND MARKETS, URBAN POLICY, AND SOCIAL EQUITY: AN INTERNATIONAL COMPARATIVE PERSPECTIVE
Abstract ID: 1053
Roundtable

SILVA, Enrique [Lincoln Institute] esilva@lincolninst.edu, moderator
NEDOVIC-BUDIC, Zorica [University of Illinois at Chicago] znb.ucd@gmail.com,
LARSON, Larissa [University of Michigan] larissal@umich.edu, participant
FAN, Yingling [University of Minnesota] yingling@umn.edu, participant
KNAAP, Gerrit [University of Maryland] gknaap@umd.edu, participant

The growth of inequality is one of the most globally pervasive and troubling phenomena of our times. Explanations vary. Some blame globalization, others point to technology, while still others view rising disparities as an inevitable consequence of a global capitalist economy. As inequality has grown, however, so have efforts to understand and address the phenomenon. Research by Thomas Piketty and others demonstrate that the distribution of income has become more unequal not only in the United States but many other nations in the Global North and South. The reasons are uncertain, but a growing body of research by Raj Chetty and others suggests that the social-spatial pattern of development—the geography of opportunity—is a demonstrative contributing cause. Further, according to the United Nations, more than two thirds of the world's population lives in cities that are more unequal today than 20 years ago. In part for this reason, several of the United Nations' Sustainable Development Goals (SDGs) address issues of urban equity—including, Goal 1 (No Poverty), Goal 10 (Reduced Inequality), and Goal 11 (Sustainable Cities and Communities).

Despite this rapid growth of evidence and concern, much remains to be learned.

Critical unanswered questions include:
- How does the geography of opportunity and other measures of urban disparity differ in cities around the world?

- What role do land and housing markets play in perpetuating inequality?
- How can land and housing policies—at the municipal, county, and regional levels—serve to promote social equity?

New insights into these questions are imperative for addressing urban inequity and for progress toward several of the United Nation's SDGs.

To address these issues, the Lincoln institute of Land Policy launched a project titled, Land Markets, Urban Policy, and Social Equity: An International Comparison. The project began with a workshop at the Lincoln Institute of Land Policy in May 2017. At this workshop scholars, advocates, and policy makers from across the globe explored the concept of equitable cities, and how progress toward more equitable cities can be measured and monitored. Most importantly, and intentionally, the workshop established a foundation for research on equitable cities in the US and other nations. This foundation is centered upon the need for measurable and meaningful indicators of equity that are applicable across geographic scales and international contexts.

This roundtable will present exploratory case studies of cities across the globe focused on land markets, urban policy, and social equity. The purpose is to explore how land markets, public policies, and development patterns shape the social-spatial structure of cities, how the social-spatial structure of cities shapes social equity and mobility, and how land and urban policies can be used to create more equitable cities. These case studies will build on insights and methodologies identified in the initial workshop, establish a framework for global measurement and monitoring, and answer the question: how can land markets and policies be used to promote social equity and economic mobility in developed and developing countries and further progress toward the UN's sustainable development goals.

The case study research begins with a focus on cities in North America, Latin America, Europe, and Africa that offer interesting examples of policy interventions and institutional structures from which to gain new insights. Upon the successful completion of the initial case studies we hope to extend the work to include more case studies in subsequent phases.

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Key Words: equity, land use policy, international, sustainable development

TRACK 8 – INDIVIDUAL ABSTRACTS

ANTI-SPRAWL GOVERNANCE: (DUAL) INNER DEVELOPMENT AND NEIGHBORHOOD GREEN SPACES IN TRANSITION IN SIX MIDDLE-SIZED GERMAN TOWNS
Abstract ID: 29
Individual Paper Submission

BILGIC, Pinar [TU Darmstadt] pinbilgic@gmail.com, presenting author

This study emphasizes the significance of neighborhood green spaces in middle-sized towns in the Frankfurt Rhine-Main region in Germany and looks at the transitions these spaces are currently undergoing. According to recent demographic prognoses[1], the region has to activate spaces for the provision of 234000 new housing units until 2030. This can be achieved mainly through densifying the existing built environment, since the national sustainable development goal sets the upper limit of daily consumption of open land to 30 hectares by 2020[2]. This ambitious goal was postponed to 2030, as by mid-2017 the daily open land take still amounted to twice as much. A response to these incompatible urgencies (housing provision vs. open land protection) has been the "dual inner development" policy by the Federal Agency for Nature Conservation. According to this policy, spatial reserves in an urban area are utilized in favor of densification; while at the same time green space qualities are secured.[3] Therefore, this study focuses on the policy conflict between housing provision and open land protection and its manifestation as a land-use conflict emerging from the incompatible functions of green spaces as spatial reserves and natural resources.

Despite being often overlooked, middle-sized towns in growing metropolitan regions might be undergoing the greatest transition, because they can continue to grow, both inwards and outwards, especially when there is a well-functioning public transportation infrastructure to rely on. For the studied case, middle-sized towns (population between 20000 and 100000) in the Frankfurt Rhine-Main region are examined to understand the extent of such transitions.

Based on past years' construction activity data, the study first finds out which middle-sized towns in each of the six districts of the Frankfurt Rhine-Main region have been growing the fastest. Next, a geographic information system analysis is conducted to understand whether this pace in growth is reflected in the land-use change. After that, a detailed land-use analysis is conducted for the six fastest growing middle-sized towns. Finally, the outputs of this three-tier spatial/quantitative investigation are discussed through semi-structured interviews with experts from local administrations. The results are expected to contribute to the ongoing debates on the benefits and shortcomings of administrative responses in towns and their green spaces in transition and show whether current governance conditions are supportive for or restrictive to[4] resolving policy and land-use conflicts.

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[2] The Federal Government (2002). Perspectives for Germany – Our Strategy for Sustainable Development.

[3] Böhm, J., Böhme, C., Bunzel, A., Kühnau, C., & Reinke, M. (2016). From theory into practice: Urban green space and dual inner development: Empirical findings of a survey of major German cities, and resultant recommendations. Federal Agency for Nature Conservation.

[4] Bressers, H., Bressers, N., Kuks, S., & Larrue, C. (2016). Governance for Drought Resilience Land and Water Drought Management in Europe. Springer, Cham.

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PLAN EVALUATION USING THE RESILIENCE SCORECARD AND FUTURE URBAN GROWTH SCENARIOS: A CASE STUDY IN TAMPA, FLORIDA
Abstract ID: 84
Individual Paper Submission

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YU, Siyu [Texas A&M University] yusiyu_1989@tamu.edu, co-author

Rising sea levels and growing coastal populations will endanger more people and assets due to flood risk if land use changes and built environment are not planned adequately. Complex and unpredictable future circumstances necessitate a better and more reliable approach to scenario-based planning in order to enhance decision making processes and better evaluate plausible futures. In urban planning, scenario planning has been limited to pick a single preferred plan (Chakraborty et al. 2011) and impact evaluations limited to singular futurized states of affairs. Though increasing future uncertainty, plans have been evaluated based on current status, and moreover, many ignore future uncertainty. To expand scenario planning for future uncertainty in lieu of urban growth and flood risks due to climate change, this research demonstrates how to incorporate uncertainty (scenario planning) into plan evaluation. Thus, we integrate future urban growth prediction scenarios using Land Change Modeling and the Resilience Scorecard (Berke et al. 2015). The research asks, "How prepared are U.S. coastal cities for future urban growth and flood risks?" The research creates a 3×3 scenario matrix integrating 3 predicted future urban growth scenarios (business as usual, growth as planned, and resilient growth) and flood risk scenarios (floodplain and NOAA low/high/extreme sea-level rise projections) using the Land Transformation Model, a GIS-based Artificial Neural Network land use prediction model. The LTM examines relationships between driving factors of urban growth and land use changes (Pijanowski et al., 2002), and shows one of the highest prediction performances among some of the most used prediction models (Pontius et al., 2008). The resilience scorecard is utilized to evaluate plan preparation for uncertainty in future urban growth and flood risks. The results of the scenario matrix (urban growth and flood risks) delineate where and how much areas would be developed and vulnerable to flood risks in Tampa, 2040. The scorecard results show that Tampa's policies are well-prepared for the static climate condition, but not for changing future climate condition (e.g. extreme rainfall, sea-level rise). Floodplain-related policies are primarily based on the current climate pattern (e.g. building codes based on the current base flood elevation), and no policies consider future sea-level rise. Thus, a new construction between the current and future floodplain will not require a minimum flood protection. Only three social related policies have been assigned, and the incentives for low income neighborhoods and transit-oriented development zones encourage more floodplain development, finally increasing communities' flood vulnerability. Resiliency plan evaluation adopted future growth scenarios and resilience scorecard allows us to identify potential future alternatives and limitations of the current plan policies for undetermined future conditions. It confirms the necessity of contingent plans for specific futures (Chakraborty et al. 2011).

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Key Words: plan evaluation, resilience scorecard, scenario planning, urban land change modeling

MANAGING THE CHALLENGES OF DISRUPTIVE TECHNOLOGY: EXPLORING THE PATTERNS OF LOCAL DRONE POLICY ADOPTION IN CALIFORNIA
Abstract ID: 92
Individual Paper Submission

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Over the past decade, there has been a proliferation of Unmanned Aircraft Systems (UAS), or drones. While drone activities (for both recreational and commercial purposes) are unevenly distributed, the new technology is rapidly becoming part of our everyday lives. As of February 2020, there are over 1.5 million registered drones in the United States and more than 160,000 registered drone operators (Federal Aviation Administration, 2020).

As the number and frequency of drone activities grow, so do safety, security, and privacy concerns over drone operation (Gallacher, 2016). The decentralized nature of drone activities and their operation patterns make it implausible for localities to simply rely on federal and/or state-level interventions. However, despite increasing local drone policy adoption, our knowledge is limited regarding the extent to which individual cities adopt regulatory measures to manage or avoid the technology-driven challenges and factors associated with such policy adoption.

This study examines the local drone policy adoption dynamics with a focus on California where the largest population of drones and drone operators are currently registered among the states. The study provides a conceptual framework based on the technology diffusion and policy adoption literature and attempts to understand what drives the adoption of drone regulations by localities. More specifically, the study employs a Cox proportional hazard model to explore the adoption pattern and its association with each city's exposure to drone risks, socio-economic conditions, governance structure, and surrounding factors. The analysis results show that cities with more registered drones, larger populations, and higher property values, are more likely to adopt restrictive measures earlier, suggesting the importance of fiscal capacity as well as motivators behind the policy adoption.

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Key Words: drones, policy adoption, technology diffusion

WHAT DRIVES HAZARD MITIGATION POLICY ADOPTION? -- FLOODPLAIN PROPERTY BUYOUT PROGRAMS IN VIRGINIA
Abstract ID: 93

Individual Paper Submission

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Flooding is the costliest natural disaster in the U.S. Since 2000, the National Flood Insurance Program (NFIP) has paid out more than $47 billion in insurance claims. About 50% of frequently flooded properties have received total damage payments that exceed the program's estimate of their value (Simon, 2017). After the 1993 Great Midwest Floods, the property buyout program became a hazard mitigation tool to reduce flood risks and repetitive loss (FEMA, 2018). With the buyout programs, residents have an opportunity to sell their properties in a floodplain to local governments. The buyout program is voluntary, and it is usually funded by FEMA (e.g. Hazard Mitigation Grant Program) and other federal agencies but implemented at the local level (Siders, 2013). Despite the federal governments playing an essential role in the hazard mitigation process, the dominant functional responsibility for disaster mitigation is delegated to state and local governments.

Although the buyout program has been around for decades, previous research on it remains limited. Some have examined the buyout program from resident's perspectives (i.e. influence factors of resident decisions and resident experiences during the implementation process of the buyout program) (Binder et al., 2015). However, few have studied the roles of state/local governments in this process. This research will fill this gap in the literature.

This paper presents the internal and external factors that influence the adoption of FEMA's property buyout program in the state of Virginia. Thus far, there are 299 buyout projects implemented in the flood prone communities in the state. The adopters and non-adopters (i.e. communities at risk of flooding but without buyouts) include communities with diverse socio-economic and flood risk characteristics.

Data includes a survey of 296 local floodplain managers and relevant state officials as well as interviews of key floodplain managers in the commonwealth. Data also includes socioeconomic and sociodemographic information from the census ACS datasets, the FEMA Hazard Mitigation Assistance Mitigated Properties database, the Spatial Hazard Events and Losses Database for the United States (SHELDUS) of flood-related damage and repetitive flood loss in Virginia. Both qualitative and quantitative methods were applied to analyze the data.

Our preliminary analysis suggested internal as well as external factors for the buyout policy adoption by local governments in Virginia. The internal factors include flood hazard exposure, property damage, institutional capacity and social demographic as well as economic characters. The external factors include networking, policy diffusion and upper level policy environment. Based on these findings, policy recommendations for future hazard mitigation adoption are discussed.

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Key Words: Floodplain, Hazard mitigation, Policy adoption, Buyout

THE NEXT THING: ARE CITIES PLANNING LAND USE AND DESIGN POLICIES FOR POTENTIAL OF AUTONOMOUS VEHICLES?
Abstract ID: 146
Individual Paper Submission

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Cities have evolved alongside new technologies from Industrialization to the advent and prolific distribution of the automobile. Planners have responded, often after the negative impacts reach a tipping point, with policies and regulations to help guide communities through the changing future. Autonomous vehicles are likely the next thing to impact how cities function through infrastructure needs, land use patterns, and design. Without prior planning, the opportunities to address elements such as curbside management and sprawl may turn into disadvantages the city has to struggle to respond to.

Planners and engineers in transportation have begun to examine the potential impacts on cities from autonomous vehicles(Vaidyanathan 2019; Nappa 2018; Clark 2019; Freemark, Hudson, and Zhao 2019; Duarte and Ratti 2018). The focus on technological aspects related to safety and performance for movement of goods and people for autonomous vehicles continues (Lim and Taeihagh 2018; Taeihagh and Lim 2019; Bösch, Ciari, and Axhausen 2018; Bhavsar et al. 2017; Ilgin Guler, Menendez, and Meier 2014). However, cities are beginning to discuss, and hopefully plan for, impacts on land use, sprawl, curbside management, equitable transportation access, and evolution of transit systems. The hope and goal of contemplating policies now may avert the impacts of increased sprawl, allowing greater usage of streetscape for people over cars, and the potential for more equitable access to transportation for all.

Approximately 75 metropolitan cities in the United States were selected to study for emerging policies or initial planning efforts related to autonomous vehicles. An online survey is being used to gather input from planners, engineers and decision-makers on what policies or planned activities are already being drafted to address the impacts or potential impacts of autonomous vehicles on the urban setting. This paper will discuss why some cities are planning for the potential for this shift in transportation of people and goods. This will include a discussion on land uses policies, growth boundaries or sprawl impacts, design implications within the streetscape, equity issues and planning for future transportation infrastructure. Opportunities to enhance quality of life within cities with better infrastructure for pedestrians, consistent and connected bicycle lanes, and reduced need of parking or number of travel lanes are already in the visions of designers and planners for a future with autonomous vehicles. However, there also are opportunities for policies to create more equitable transportation to all community members using fleets of autonomous vehicles as part of the transit system to enable greater access to housing, jobs and other destinations.

Transportation can and has had a profound impact on land use planning. The impacts of auto-centric city planning continue to have implications on health, use of resources, air quality, sprawl, and segregation. The potential for autonomous vehicles to provide fewer fatalities, fewer accidents, more efficient movement, and use of less land for transportation is attractive for better planned cities. However, without guiding policies to address stages of use of autonomous vehicles (e.g. initial usage, mixed fleet, full fleet), technology could get ahead of the ability of communities to incorporate these advances gracefully.

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Key Words: autonomous vehicles, land use policies, curb management, sprawl, future planning

EXURBAN DEVELOPMENT ACROSS THE UNITED STATES – LONGITUDINAL ANALYSIS OF THE NLCD FROM 2001 TO 2016
Abstract ID: 172
Individual Paper Submission

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There has been a non-linear shift in land development patterns since 2000, with per capita consumption of land in US metros declining almost 60% by the 2011 to 2016 time period (Richter, 2019). In parallel, development in Exurbs – areas economically connected to but physically outside of core urban and suburban centers – has become an important topic of study. Berube et al (2006) find 6% of the population in large metros live in Exurbs, with the South and Midwest regions being the most Exurbanized in the year 2000. Clark et al (2009) find Exurbs in larger metros have greater contiguity and concentration than Exurbs in smaller metros, and therefore should exhibit greater growth. Given the relevance of Exurbs to overall metropolitan development, this paper seeks to answer the following research questions: how has the post-2000 development shift manifested in the Exurban portion of US metros? And how does this trend change over time and across different regions?

To answer this question, this paper uses the National Land Cover Database (NLCD), the US Census Urban Areas (UAs) boundaries, and US Census population data to calculate Expansion per Capita (EPC) and Average Imperviousness (AI) for the Exurban portion of all metro regions in the contiguous US. The NLCD contains spatially explicit, medium resolution (30 meter) land cover data that can accurately classify developed land, including the percent of land that is impervious. UAs are a dynamic census geography that identify contiguous population centers. They contain both core and suburban jurisdictions and expand over time. This paper defines Exurbs as those areas within a Metropolitan Statistical Area (MSA) but outside UAs. NLCD metrics – total developed acreage and AI – are calculated for the Exurban portion of each MSA for 2001, 2011, and 2016. Comparison of developed acreage against 2000, 2010, and 2016 Exurban population data enables calculation of EPC for three periods-of-change: '01 to '16, '01 to '11, and '11 to '16. EPC provides for greater precision in assessing changing development patterns than does population density (Richter, 2019). A common hurdle to using NLCD to study Exurban development is the differentiation between land cover and land use (Irwin et al, 2007). Imperviousness provides some clarity as higher AI is indicative of commercial or industrial uses, with lower AI reflecting greater tendency toward residential use. Single-year and period-of-change metrics are analyzed nationally, and by metro size and geographic region.

As previous studies have found, there are trends in Exurban development across metro size and region. This study finds similar geographic distribution of Exurban development as Berube et al (2006); however, longitudinal analysis yields more complex patterns. Larger metros exhibit greater growth of Exurban development, but EPCs and AIs are highly heterogeneous across metro region and size. This suggests the

complexity of place, for example the presence of high amenity regions, is influential in determining patterns of Exurban development. Future studies might consider agricultural and economic data to better isolate the drivers of Exurban development.

Exurban patterns of development are common not just in the US, but throughout the world (Wheeler, 2015). Therefore, understanding how Exurban development has changed over time provides useful data for planners everywhere. Toward this end, this study makes three contributions. First, it expands on past literature linking metropolitan characteristics to Exurban growth patterns. Second, it provides targeted data that increases understanding of the non-linear shift in development occurring since 2000. Third, its use of the AI metric contributes to an emerging perspective in land change studies – that land is not a binary measured as developed or not.

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Key Words: Land Change, Development Patterns, Exurbs, NLCD, Census Urban Areas

A GREAT PARK AND AN AFFORDABLE HOME: EXAMINING PARKS-RELATED ANTI-DISPLACEMENT STRATEGIES NATIONWIDE
Abstract ID: 179
Individual Paper Submission

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New parks built in low-income urban communities are often associated with the influx of wealthier residents and increased housing prices, a phenomenon described as "green gentrification" (Anguelovski et al., 2018; Rigolon & Németh, 2020). Large greenways (e.g., Atlanta's BeltLine, Chicago's 606) have had particularly strong effects on housing prices and fundamentally transformed the nearby neighborhoods (Rigolon & Németh, 2020). Over time, green gentrification can result in the displacement of low-income households who cannot keep up with increased housing prices. Driven by the belief that low-income communities should not have to choose between health-promoting parks and affordable homes, many planners and park advocates in U.S. cities are starting to address green gentrification proactively (see Pearsall & Anguelovski, 2016). Yet limited research has examined common successes and struggles among projects.

In this paper, we report the findings of an ongoing nationwide study (Rigolon & Christensen, 2019) on parks-related anti-displacement strategies (PRADS), including strategies to increase the supply of affordable housing and of good-paying jobs for low-income residents. We examine (1) to what extent anti-displacement strategies are integrated with plans, policies, and funding for parks and open spaces, (2) and the best practices for the implementation of PRADS, including which political and economic factors facilitate or limit their implementation.

We used a qualitative research design integrating a review of secondary data and interviews with project stakeholders. First, we compiled a list of large new parks and greenways located in low-income communities using nationwide databases (e.g., High Line Network). Second, based on a preliminary review of policy documents, we selected 15 projects in 14 cities for which stakeholders have implemented or proposed PRADS. Third, we reviewed plans, land use regulations, and accounts from the press to learn more about PRADS for the 15 projects. Fourth, as of February 2020, we conducted interviews with 28 project stakeholders including planners, nonprofit staffers, and affordable housing professionals. More interviews are ongoing. Finally, we classified existing and proposed PRADS starting from the Urban Displacement Project's typology (Zuk & Chapple, 2017) and used content analysis to identify best practices for PRADS implementation.

We found that planners and nonprofits across the country are undertaking promising efforts to ensure that large park projects do not lead to residential displacement, with notable initiatives for Washington DC's 11th Street Bridge Park and the Los Angeles River. Also, we identified 27 types of PRADS ranging from inclusionary zoning to community land trusts to first-source hiring ordinances, with an average of seven strategies per project. We then classified PRADS into six categories based on three types of beneficiaries (renters, homeowners, businesses, and workers) or three types of implementers (developers, public and nonprofit housing organizations, and park funders). We found that strategies for public and nonprofit housing organizations were used in all the projects we surveyed. In nearly every project, stakeholders implemented localized anti-displacement strategies, such as affordable housing zoning overlays, but also sought to leverage city-wide policies. Further, some competitive grants for park funding required or incentivized cities to implement anti-displacement strategies as a condition to receive such funds, which created a strong integration between PRADS and park policies.

The projects that implemented the broadest range of PRADS started working on such strategies at the early stages of park planning, conducted extensive community engagement, and combined affordable housing and local jobs initiatives. Among the obstacles to implementing PRADS, interviewees noted a lack of integrated funding streams for parks and affordable housing, which led stakeholders to string together different funding sources. Our ongoing findings have implications for planners seeking to advance the implementation of parks and other resilient infrastructure, such as transit and climate adaptation tools.

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Key Words: Green gentrification, Urban green space, Anti-displacement strategies, Land use regulations, Affordable housing

DOES JURISDICTIONAL SIZE AFFECT RECEPTIVITY TO MULTIFAMILY HOUSING? A MULTI-LEVEL MODELING APPROACH.

Abstract ID: 220
Individual Paper Submission

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Rapidly escalating housing costs in economically thriving U.S. metropolitan areas contribute to a variety of social problems, including housing insecurity and increased commute times. The available evidence suggests that increased housing costs in some of the most prosperous metropolitan areas result, in large measure, from local regulatory restrictions on new housing supply generally, and – in particular – laws limiting new multifamily housing (Gyourko and Molloy, 2015). Scholars have provided a theoretical basis for presuming that larger jurisdictions will be relatively permissive of development generally and, by extension, new multifamily housing (e.g., Fischel, 2007). But the severity of housing cost increases in cities such as San Francisco, Los Angeles, and New York suggests that claims regarding the effects of jurisdiction size might be overdrawn (Been et al., 2014).

Although the existing statistical evidence is consistent with the claims that larger jurisdictions are relatively receptive to multifamily housing development, the importance of jurisdiction size has not been directly tested. Population is often included as a control variable in studies of the determinants of housing development. But, when the unit of analysis is the municipality, there is a nearly automatic relationship between population size and housing production, because – holding all else equal – a municipality with more people will require more housing than a municipality with fewer people.

We address this problem by combining data from multiple geographical scales, including census tracts, municipalities, counties, and metropolitan statistical areas (MSAs). Our dependent variable measures the change in multifamily housing units between the 2008-2012 American Community Survey (ACS) and the 2014-2018 ACS. The unit of analysis is the census tract, but each tract-level observation includes – among other covariates – a measure of the population in the jurisdiction that regulates land-use for that tract (e.g., a city, county, or township). Our sample consists of all tracts in urban areas (as delineated in 2010 the U.S. Census Bureau) for all MSAs in the continental U.S. having a 2010 population of 500,000 or more. Our empirical strategy enables us to assess whether increases in the territorial scale of land-use regulation affects receptivity to multifamily housing. This question is relevant for planning scholarship and practice, because an array of regulatory reforms over the past four decades have sought to limit local restrictions on multifamily housing by lodging regulatory authority with a higher level of government.

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Key Words: Housing, Local government

TIEBOUT SORTING, LOCAL LAND USE CONTROL, AND MUNICIPAL PROPERTY TAX RATES
Abstract ID: 225
Individual Paper Submission

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This paper presents an empirical analysis of the implications of Charles Tiebout's seminal 1956 article, "A pure theory of local expenditures". Tiebout argues that a system of local governments in a metropolitan area can provide an efficient market for public services by allowing households to choose to live in a municipality that provides an optimal combination of taxes and public services. Subsequent researchers have emphasized the role of property taxes as the price for public services and the role of local control of land use as an exclusionary tool that can be used in some instances to zone out uses that consume large amounts of services relative to the property taxes they yield. Hence, commercial, industrial, and large-lot single-family residential may be preferred over multi-family residential uses. Smaller and wealthier municipalities are better able to employ land use controls to this effect than larger, more diverse municipalities, such as central cities. We analyze the over-100 municipalities in the Miami, Florida, Metropolitan Statistical Area, to determine whether property tax rates are a function of factors implied by the literature on Tiebout residential sorting. We consider both nominal and effective property tax rates, given that these can differ substantially, in part due to Homestead exemptions and restrictions. Our research suggests that property tax rates are inversely proportional to median household income and the proportion of land zoned for owner-occupied and commercial and industrial uses.

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Key Words: Tiebout sorting, Land use controls, Property tax rates, Equity

HAZARD MITIGATION (HM) VS. CLIMATE CHANGE ADAPTATION (CCA) PLANS – ARE THERE OVERLAPS BETWEEN PLANS?
Abstract ID: 259
Individual Paper Submission

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Natural disasters threaten communities' economy, infrastructure, and social and environmental well-being. To understand risks and develop long-term strategies to reduce the impacts of disasters, the Federal Emergency Management Agency (FEMA) requires that cities or counties develop Hazard Mitigation (HM) Plans. Under the Disaster Mitigation Act of 2000, local governments must develop HM plans to access funding for hazard mitigation assistance.

Climate change tends to increase the intensity and frequency of extreme weather events. Therefore, it will raise the vulnerability of communities that are already susceptible to natural disasters. Climate Adaptation Plans aim to reduce the long-term impacts of a changing climate through vulnerability assessments and strategies, which are not restricted to extreme weather events. These types of plans are becoming more common as communities begin to experience the impacts of climate change.

Conceptually, both climate adaptation and hazard mitigation plans anticipate future hazards and

address them with strategies to reduce vulnerability. Nevertheless, there is a disconnect between these plans in practice since HM plans have not been proactive towards hazard mitigation policies, and it is unclear how effective CCA plans have been towards it. Are both plans addressing the same issue and having a duplication of policies? Or are they different? In this case, how and where are they different? Instead of having two stand-alone plans, should cities integrate climate adaptation and hazard mitigation plans? Environmental and sustainability departments have historically led climate change planning, while hazard mitigation is led by offices of emergency management, which tend to focus on disaster response.

This paper examines four case studies of cities across the country that are at the forefront of resilience planning: Boston, MA; Baltimore, MD; Fort Lauderdale, FL; and Seattle, WA. Using plan quality evaluation techniques and the Plan Integration for Resilience Scorecard (PIRS) methodology, we compare and contrast hazard mitigation and climate adaptation plans within these cities. We specifically focus on how HM and CCA plans are addressing long-term risks using land-use policies. Although HM and CCA plans look at a variety of hazards, we focus exclusively on coastal flooding (sea-level rise and surface flooding).

The case studies are comprised of two cities that have stand-alone plans, one with a combined HM & CCA, and one that has a hazard mitigation plan and climate adaptation policies mainstreamed through the comprehensive plan. Preliminary results suggest that HM and CCA differ regarding the extent to which policies decrease physical vulnerability, plan quality, and policy tools. Although conceptually the plans overlap, in practice, hazard mitigation is more focused on past events and strategies related to emergency management. In contrast, climate adaptation plans are focused on future events and developing strategies related to long term land-use policies.

As cities confront the challenges of climate change and more frequent and intense weather events, it is important to consider which planning frameworks are most effective at reducing long-term risks. With limited time and resources, there is a need to understand the possibilities and limitations of traditional and newer, more novel planning approaches. By analyzing whether there are overlaps between hazard mitigation and climate adaptation plans, this study has important implications for planning scholarship and practice. The study will indicate the spatial implication of those plans regarding decreasing physical vulnerability, as well as highlighting the opportunities to improve plans to mitigate long-term flood risks.

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Key Words: climate change adaptation, hazard mitigation, resilience, vulnerability, plan integration

PRICE AND LAND USE IN LATIN AMERICAN CITY
Abstract ID: 261
Individual Paper Submission

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This research empirically explores the relationship between land's prices and uses in Tijuana, Mexico. In particular, this research asks which economic sectors and social groups (by income) are determinants of land prices variation among neighborhoods.

Polycentric models (derivate from monocentric model a la von Thünen) propose that land price emerge from the trade-off between land price and distance cost to subcenters that agents (uses) make when they decide their location (O'Sullivan, 2012). These types of models are unrealistic because they consider both segregated land uses and the assumption that distance to centers is valued over other price determinants.

Considering the land price explanation controversy (Evans, 1995; Ward and Aalbers, 2016), this research assumes two premises: i) demand for land generates its price; ii) land price depends on the income obtained by using it as a means of production (or consumption), and not vice versa. So, land price is defined as the valuation that urban agents give to a specific place considering the benefit that they will obtain in that place and its relative scarcity and uniqueness, in a market environment burdened with imperfections for particularities of land as economic good. Land prices are determined in markets given the local government's zoning regulation lax application, as evidenced by the fact that half of Tijuana was born informal, that is, outside the regulation (Alegría and Ordóñez 2016) .

This research proposes that in each neighborhood land price per square meter depends on the employment density of each major economic activity (commerce, service and manufacture) and the residents' proportion by income. This model's test uses an ordinary least squares (OLS) regression.

Data is aggregated at census tract geographic scale. Land prices are in pesos per square meter average in year 2003, which are the result of interpolation between prices 2000 and 2009 (based on two consulting works commissioned by local government). Economic activity information is from 2004 censuses (2003 data). Groups by income information come from 2000 population census. It is considered possible to mix data from different years because the spatial pattern of economic and residential activities changes little over time.

Being Tijuana a Third World city, in addition to employment and income characteristics, the model includes as independent variables drainage deficit, percentage of area with informal settlements, and topography. Distance to downtown and an accessibility indicator were also tested as determinants. As a result, independent variables have the expected signs and statistical significance, except for manufacturing employment that is not significant. Due to the high collinearity between some of them, final model has fewer variables than expected. Distance to downtown and accessibility, although significant, have high collinearity and less explanatory power than employment and income. This regression model explains 78% of variations in land prices.

These results are relevant to land price theory and planning practice. Regarding the former, as economic intensity, personal income and urban infrastructure explain land price rather than accessibility and distance to downtown, the absolute characteristics of the place are more important than spatially relative characteristics, leaving polycentric models with little explanatory power. Regarding the latter, zoning plans may be used effectively in several programs, for example, to carry out the surplus value transfer between zones when knowing the expected land price according to the activity assigned to zones.

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Key Words: Land price, Land use, Tijuana, Mexico

BEYOND BUY-OUTS: ASSISTING RELOCATION IN TERREBONNE PARISH, LOUISIANA
Abstract ID: 287
Individual Paper Submission

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As residents of coastal communities in Louisiana and elsewhere adapt to increased flooding and storm intensity due to sea level rise, coastal erosion and subsidence, moving away may become an increasingly important option. Localities around the US have used public funding to buy-out vulnerable properties and help residents relocate as part of their mitigation and adaptation strategies. These initiatives seek to reduce future disaster recovery costs, prevent residents from becoming stuck in risky environments, and implement deliberate, collective decisions about how to promote less hazardous development patterns (Nelson, 2014).

In this paper, we examine tensions among the objectives of policies, programs and local planning goals that intend to assist people in moving away from high risk areas in the lower bayou communities of Terrebonne Parish, Louisiana. Sea level rise and extreme land loss have increased the frequency and severity of flooding within the parish and many bayou residents already have moved north. This paper draws on semi-structured interviews with nearly 60 current or former residents of coastal communities in Terrebonne Parish and 30 local officials and community leaders conducted between 2018 and 2020. The interviews illustrate how households are adapting, including how they make decisions about whether to stay or relocate, and the impediments to the widespread use of buyout and relocation programs.

This paper investigates three tensions that emerged in the interviews. First, many factors impede low- and moderate- income households from participating, which compounds their vulnerability. These factors range from the lack of clear property title to insufficient compensation to find a comparable house elsewhere. Second, adaptation is a dynamic, ongoing process. The timing of the programs and how residents make decisions about whether and how to rebuild or to move are often misaligned. As a result, even voluntary programs can feel forced (de Vries & Fraser, 2012) or people do not participate because funds come to late or the wrong types are available. Third, nonfederal matches to acquire properties, lost property tax revenue, and ongoing maintenance costs can discourage local jurisdictions from acquiring properties or leave them undeveloped (ELI & UNC-IE, 2017).

The findings contribute to planning scholarship and practice by demonstrating the need for clear planning goals and more flexible program guidelines, if buy-out and relocation programs are to reduce vulnerability and be cost effective. This research was funded by The Water Institute of the Gulf in support of the Louisiana's Comprehensive Master Plan for a Sustainable Coast. The plan lays out a 50-year strategy for reducing the state's climate-induced coastal flood risk through ecological restoration, structural protection, and hazard mitigation, and it proposes non-structural mitigation, including property buyouts, for thousands of homes.

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MEASURING RURAL SETTLEMENTS TRANSITION IN METROPOLIS AND EXPLORING THE ROLE PLANNING PLAYS：CASE STUDY OF SHANGHAI

Abstract ID: 312
Individual Paper Submission

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Rural settlements transition is one of the most significant indicators for understanding rural development and urban-rural transformation in developing country under the rapid urbanization, informatization and agricultural modernization (Woods, 2004). There has been a lot of researches on the spatial characteristics, evolution patterns and rules, driving mechanism of rural settlements transition (Liu et al., 2014; Shen et al., 2018; Zhou et al., 2018). Most of these researches focused on the increase in rural settlements, however the measurement of spatial characteristics on the decrease in rural settlements are relatively rare, especially lack of study on the rural settlements in metropolis with a rapid decrease; meanwhile, quantifying the impact of planning in transition process has not been conducted in the previous study. Considering these factors, the aims of this paper are as follows: (1) how to measure the spatial characteristics on rural settlements transition in metropolis? (2) to what extent planning has curbed or accelerated rural settlements transition?

Taking Shanghai as a case study, research data included three land-use survey databases at 8 years intervals (2000, 2008 and 2016) and the socio-economic data from the Statistical Yearbook of Shanghai from 2000 to 2016. Firstly, we applied three dimensional indicators to measure the spatio-temporal characteristics of rural settlements transition at township level, including scale change, rural settlement compactness and morphology. Scale change included conversion intensity in rural settlements; while compactness involved four sub-dimensions: population density, GDP density, availability of public facilities and access to transportation. Morphology included three sub-dimensions: patch density, average patch area and the total area of leapfrog patches. Using analytic hierarchy process (AHP) to weight multiple indicators, we calculated and classified the transition index of each town in each period, then analyzed the spatio-temporal characteristics. Secondly, we selected three variables from master plan, namely, area of newly added construction land, land for public facilities, road land, then adopted the Geo-Detector basing on spatial variation analysis of the geographical strata to quantify the impact of planning on rural settlement transition (Wang et al., 2016).

Results demonstrated that (1) the decrease in rural settlements of Shanghai was more serious in 2000-2008 than in 2008-2016, and transition characteristics also presented spatial heterogeneity within different circle layers formed by urban ring roads. (2) According to the transition index of each town calculated by AHP, four spatial patterns were divided, including transition stagnation pattern, weakening transition pattern, ascending transition pattern and enhanced transition pattern; the spatial distribution of all four transition type areas was spatially unbalanced in different sectors due to the driving forces vary from region to region. (3) The results of Geo-Detector showed the newly added construction land and the road land in the master plan can largely explain the transition at township level, in other words, plan has played a key role in contributing to rural settlements transition.

These results can enrich the theory of rural settlements transition with a typical decrease area of rural settlements in metropolis and provide a method to measure the spatial characteristics of rural settlements in developing countries. Besides, the results can help us understanding the role of planning in the

transition process of rural settlements, and provide the foundation to help planners to formulate spatial measures in rural planning practice for a more sustainable and compact development of rural settlements.

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Key Words: Rural Settlement Transition, Spatial Characteristic, Impact of Planning, Shanghai

ALLANDALE STATION LANDS IN THE CITY OF BARRIE, ONTARIO: IMPLICATIONS OF COLONIAL PLANNING ON A HURON-WENDAT BURIAL SITE
Abstract ID: 344
Individual Paper Submission

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One need not look to history to see the effects of colonial land-use planning on Indigenous land rights. The current conflict at Unist'ot'en between Coastal Gaslink (CGL) and Wet'suwet'en hereditary chiefs and land defenders remind us that the effects of colonial rule through the legal system continues to this day. And this has implications for the practice of planning, and planning theory.

My research examines the case study of the Allandale Station lands in the City of Barrie, Ontario, and aims to confront and challenge the ways that colonialism continues to permeate planning policy and practice at this site. Taking my cue from Libby Porter's (2010) work on decolonizing planning, I ask: In what ways does the planning regulatory system illustrate the contentious nature of settler-colonial land-use planning and its relationship with Indigenous land rights and environmental governance? In particular, in what ways does such a regulatory system affect Indigenous peoples', specifically the Huron-Wendats' connections to land (soil) at Allandale?

Prior to the construction of the Allandale Train Station in the 1850s, evidence of a Huron-Wendat burial site was present. An ossuary containing 200-300 bundled bodies was uncovered and documented as early as 1846, and the site's archaeological importance was documented by British historian Andrew F. Hunter in 1888. It was only after the construction of the Simcoe and Huron Railway in 1852, that the area became inhabited by white Euro-Canadian people. Over the course of 170 years, the station landscape has changed and expanded with little to no consultation with Huron-Wendat descendants, and Chippewas of Rama First Nations whose traditional territories currently span the City of Barrie.

In my research, I employ the new materialist approach (Coole & Frost, 2010) that brings together actor-network theory (Latour, 2005), non-representational theory (Thrift, 2008), and affective theory (Massumi, 2002). Through the application of new materialist theory and methodology in the context of land-use planning, I explore how ancestral Huron-Wendat use of the land is reflected in the soil at Allandale. What does this imprint in the soil mean for contemporary Huron-Wendat? What does the removal, addition and otherwise disturbance of the soils in this area mean to the Huron-Wendat, and how do planning/development activities at Allandale affect beliefs regarding burials? How do Indigenous (and non-Indigenous) perspectives of land and soil reflect the emotional (affective) connections to place,

values and actions? I will discuss findings based on field work conducted between August and December 2019, in addition to planning policy analysis conducted to date. Ultimately, my research goal is to show how the Allandale case study speaks back to, and can advance planning theory, and the implications this analysis can have for decolonizing planning policy and practice in Ontario.

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Key Words: Indigenous land rights, Ontario, land-use, Coloniality, Planning policy

RECOGNIZING RURAL - AN EVALUATION OF MUNICIPAL CAPACITY TO SUPPORT AGRI-FOOD COMMUNITIES IN ONTARIO
Abstract ID: 367
Individual Paper Submission

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This session will reflect on the importance of rural and agri-food communities and provide key insights on the capacity of municipal governments to support the agriculture and agri-food sector and respond to rural issues. In Ontario, where the most agriculturally-viable land in Canada is located, municipalities are the most local level of government and are responsible for implementing provincial and federal policies and directives. However, little is known about the structure, knowledge base, and capacity of municipal governments to respond to agricultural and agri-food priorities and issues.

A review of existing literature and municipal websites reveals that municipal planning departments are extremely varied and inconsistently staffed (Caldwell et al., 2020; Caldwell & Procter, 2013; Davidson, 1988). This appears to be the surface of a much larger inconsistency related to financial resources, staff expertise, and council's knowledge about agriculture and agri-food. Preliminary findings indicate that there is an increasing knowledge gap related to agricultural planning and agri-food issues, and that fewer elected officials/planners have agricultural backgrounds, expertise, or training. This presents a threat to rural and agri-food communities as their livelihoods depend on the ability of council (and staff) to understand critical issues, protect farmland, and make agriculturally-supportive decisions. This issue also affects urban Canadians as they depend on farmers and rural agri-food actors for the food they eat and to improve food security in Ontario. This research is also of international importance as Canada is the 5th largest agricultural exporter in the world (Agriculture and Agri-Food Canada, 2020). Rural and agri-food communities are important and it is critical that our governance systems not only recognize that but also have the capacity to support, protect, and respond to the agri-food sector.

Research Questions:

What is the capacity of municipalities, particularly planning departments, in relation to agri-food issues and opportunities?

What best practices are being used in making decisions that affect the agri-food sector?

How can municipalities (elected officials and planning departments) better position themselves to respond to and support agri-foods in the planning process?

Methods: Our team is currently researching municipal capacity related to agri-food issues and opportunities in Ontario. Findings of this study will be informed by data collected via surveys, semi-structured interviews, and document analysis from 67 municipalities in the Greater Golden Horseshoe. Case studies that capture key issues for municipalities and planning departments related to the agri-food sector will be explored.

Relevance: Planning is critical for the responsible management of communities and land, and the capacity of planning departments in rural areas is key to balancing these two priorities, while also working towards social, economic, and environmental sustainability. Municipal capacity is an under-researched topic as it relates to rural areas and this paper seeks to provide a platform to discuss these issues. This research is relevant to those who have an interest in the well-being and planning of small cities, towns, and rural lands across North America.

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Key Words: rural planning, agri-food systems, municipal capacity, farmland protection, rural climate resilience

CHANGES TO RESIDENTIAL DENSITIES AND AUTOMOBILE COMMUTING IN CANADA'S POST-1960 SUBURBS
Abstract ID: 385
Individual Paper Submission

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Most Canadians live in mass-produced detached housing built on a large scale since the mid-twentieth century. These suburban housing tracts were built largely on greenfield sites at the expanding metropolitan fringe. The retrofitting of these established suburbs and creation of new suburbs that are denser, more diverse in uses, and designed for less automobile dependence than their predecessors are increasingly goals of urban planners (Filion et al, 2016). Legislative and regulatory measures to encourage more compact urban growth have been particularly prominent in Metro Vancouver, where such efforts began in the 1970s, and the Toronto region, where a concerted effort began in the 1990s. More recently, initiatives to limit low-density metropolitan expansion have spread to planning departments across Canada.

Whether the form and function of suburbs has changed as a result of these planning efforts is unclear.

While most observers assume densities are increasing, it is not clear where or how this is actually happening. For example, it is quite possible that net densities are increasing in some areas due to smaller lot sizes and an increase in the proportion of higher-density housing types, while gross densities remain more stable due to the influence "take-outs" such as stormwater ponds, stream buffers, pedestrian paths, lanes, or other macro design features. Another possibility is that unit densities are rising while population densities are falling as household size continue to shrink in urban areas across the country.

Research on these questions is either out of date or uses high-level mapping and statistical techniques that estimate density changes without direct measurements. More recent research in Canada has focused on Toronto and Vancouver, where the results are mixed. In the Greater Toronto and Hamilton Area, Burchfield and Kramer (2015) found that new greenfield development was being built in the 2000s at higher densities than in the 1990s, whereas Sorensen and Hess (2015) found that densities of housing in the area had declined somewhat during the period 1961-2000 but according to one measure (net housing unit density) had increased slightly in the 1990s.

Our study systematically assesses changes to densities in suburban neighbourhoods constructed during different decades through direct measurement of satellite photographs. We calculate unit and population residential densities – both net and gross - at the scale of Statistics Canada's dissemination areas which are spatial units containing 400-700 residents. Using 2016 Census of Canada data on the age of housing construction, we categorize dissemination areas where more than 80% of the housing comprises dwellings constructed in the following three periods: 1961-1980, 1981-2000, and 2001-2016. We manually calculate unit densities by measuring land areas using Google Earth and GIS software, using consistent spatial parameters across the regions studied. We measure population densities and commuting by automobile within dissemination areas using the 2016 Census data. We carry out the measurements on Canada's five largest metropolitan areas (Calgary, Montreal, Ottawa, Toronto, and Vancouver) and four smaller metropolitan area (Lethbridge, Sherbrooke, Kitchener-Waterloo, Kelowna).

The results of our study will help resolve planning debates about whether Canadian suburbs are being built at higher densities than in the 20th century, and if so, whether those changes are at the net or gross level. The study will also shed light on whether any density changes observed are linked to changes in travel behaviour. This will help advance the discussion of whether progress towards more compact development is being made in Canadian urban regions and whether planning efforts are having an impact on important sustainability goals, such as reducing automobile dependence.

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Key Words: residential, density, Canada, land use, commuting

HOW DOES TRAFFIC, AND FEAR OF IT, IMPACT HOUSING DEVELOPMENT?
Abstract ID: 387
Individual Paper Submission

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Many major U.S. cities are experiencing a severe and deepening housing affordability crisis. Does transportation planning have a role in it? We examine this question in this paper. Specifically, we

hypothesize that standard transportation planning practices, such as traffic impact analysis, may be indirectly limiting housing supply, particularly multi-unit housing. Traffic impact analysis has traditionally been based on forecasting the nearby (mostly intersection) Levels of Service (LOS) to determine the traffic impacts of new development. Under this framework, adding additional development in already built-up and traffic congested areas – where housing prices are often highest, -- is difficult, absent expensive traffic mitigation costs. This dynamic is especially common in places where NIMBYist concerns with new development and traffic conditions are highest.

California, home to perhaps the most severe housing affordability crisis in the nation, has altered the traffic impact analysis dynamic somewhat by mandating a change for LOS analyses to VMT analyses, whereby projects thought to reduce overall vehicle travel score better, even if local intersection levels of service worsen. However, the new VMT standard may still be employed as a cudgel to oppose new development if increased activity in an area increase overall travel.

When conducting traffic impact analyses, transportation engineers and planners often rely on Institute of Transportation Engineers' (ITE) Parking Generation and Trip Generation manuals. Shoup (2003) has argued that both parking generation and trip generation rates are imprecise overestimates based on peak traffic and parking demands in car-oriented suburban contexts, and that they reinforce each other in ever more biased estimates through feedback loops. Other studies have found that trip generation rates tend to over-predict traffic impacts of both urban and suburban developments (Millard-Ball 2015).

With respect to the effect of impact fees on housing markets, the weight of the empirical evidence suggests that impact fees increase prices for both new and existing homes in communities lacking sufficient substitutes, though the degree of such effect varies for different segments of the housing market (Been 2005). Traffic-related impact fees play a significant role as they constitute substantial portions of total impact fee revenues for many cities in California. Moreover, studies have shown that traffic-related concerns have a significant role in local anti-development narratives (Monkkonen and Manville 2019).

Finally, a few recent studies on the effect of the LOS to VMT change in California show that the new metric will likely reduce development costs associated with traffic impacts for transit-oriented and mixed-use developments (Lee and Handy 2018).

Thus, traffic impact analyses may be contributing to the supply-side causes of the housing affordability crisis in many parts of many cities by making it harder to build housing where it is more demanded. Accordingly, we ask several related questions: (1) is traffic impact analysis overestimating costs and, in particular, underestimating benefits of new development? (2) to what extent is traffic impact analysis a burden or an obstacle in the development process? (3) to what extent are local residents employing traffic concerns in their anti-development efforts? and (4) to what extent are these mechanisms contributing to the shortage of housing supply and the affordability crisis? Our analysis focuses on California, where affordability problems are severe and where the recent shift from LOS to VMT impact analysis offers the opportunity to see how NIMBY strategies with respect to traffic may be evolving.

To examine these questions, we review and synthesize several separate bodies of research, including trip generation and parking rates estimates, development impact fees, local development politics, and a few recent work studying California's new VMT-based CEQA review, as well as the initial results from the data collection component of this research.

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Key Words: traffic impact analysis, affordability crisis, housing development, NIMBYism, California

ENVIRONMENTAL REGULATIONS AND BROWNFIELD PRICES: EVIDENCE FROM LAND LEASING IN SHANGHAI, CHINA
Abstract ID: 511
Individual Paper Submission

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Empirical evidence has shown that brownfields are often sold at discounted prices in order to compensate for foreseeable cleanup costs and potential liability risks. However, this hypothesis has not been tested in the Chinese context, largely due to the lack of land contamination information and the absence of brownfield regulations in China. Over the past decade, Chinese cities' gradual introduction of redevelopment policies for former industrial sites has increased public awareness regarding land contamination among real estate developers, local governments, planning practitioners, and the general public. In Shanghai, information on land contamination that was once considered confidential now has to be disclosed during land auctions. This ensures that auction bidders are well-informed about these issues. Using Shanghai land transaction data from 2007-2019, we examine the temporal response of land market to environmental policy changes by employing several difference-in-differences regression models. The results show that brownfield parcels had been sold 16-18% lower than greenfields and such discounts tend to become more significant after at least three years of policy implementation. We also explore the heterogeneous effects between initial asking price and actual transaction price of land parcels, and between urban and suburban areas.

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Key Words: Brownfields, Industrial sites, Difference-in-differences (DID) models, Land sales, Shanghai

EVALUATION OF PLANNING COORDINATION AND WALKABILITY AROUND CITY RAILWAY STATION—A CASE STUDY IN CHINA
Abstract ID: 536
Individual Paper Submission

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In large, fast growing cities in China, implementation plans such as zoning and capital improvement programs are critically shaping the walkability of built environment. Implementation plans include abundant spatial policies that affect key aspects of walkability (Schlossberg & Brown, 2004) in a small area, such as street connectivity, land use mix, density, and design. Therefore, the integration of implementation plans can significantly influence walk potential, particularly in new policy-oriented areas. We used planning content analysis techniques (Lyles, Stevens, & Research, 2014) to develop a method for evaluating whether implementation plans from different government agencies consistently address the goal of walkability around a subway (or light rail) station. We tested this method at three station areas [i] along one city railway line in the Changsha City, Hunan Province. First, we decomposed the evaluation goal, walkability, into an indicator system composed of multiple sub-indicators and parameters. Then, we selected from three implementation plans the place/street-specific land use policy tools (Berke et al., 2019) that potentially affected walkability at the three station areas. We scored policies as positive or negative, based on whether the policy increased or reduced walkability around the sampled stations. Finally, we aggregated the policy scores by planning document and station area to identify the "low-score" document and "low-score" station area, respectively. Each plan document generated negative polices that reduced walkability; the number of negative policies in the plan of zoning amendment greatly exceeded that of the other two plans. Our results suggest policy conflicts wherein negative polices in zoning amendments damage the positive effects of policies on walkability in, e.g., the 2019 Municipal Infrastructure Project Plan. Moreover, we found that the core areas around stations received lower scores than the non-core areas, which suggested that there were greater policy conflicts on walkability at the core areas. Planners aiming to promote coordination among implementation plans can use our method to identify policies harmful for walkability. With improved understanding of the severity of walkability problems in station core areas, planners can decide whether to remove harmful policies or whether beneficial policies should be instituted to offset the negative effects of harmful policies.

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Key Words: walkability, plan integration, scorecard

ASSESSING THE QUALITY OF METROPOLITAN GOVERNANCE IN SOUTHERN EUROPE: A METHODOLOGY ADAPTED FROM UN SUSTAINABLE DEVELOPMENT GOALS
Abstract ID: 551
Individual Paper Submission

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Several Southern European countries have gone through recent changes in the form of management and competencies of intermunicipal or regional structures in metropolitan areas. We studied nine metropolitan areas in Portugal, Spain, France, Italy and Greece and analysed: 1) How the concept of metropolitan area is being spatially interpreted in Southern Europe; 2) What are the different forms of political-

administrative organization; 3) Which competencies and sectoral responsibilities are under management of metropolitan governing bodies.

Some countries resorted to the simple conversion of former regional/subregional entities, while others formed intermunicipal arrangements. A few metropolitan areas enjoy a great degree of autonomy (one is even an autonomous region) but others depend on case-by-case delegation of competencies from municipal/regional/national levels. Executive and legislative bodies may be directly elected, indirectly nominated by elected officials, or appointed by other levels of government. Power-sharing among the government tiers can be a tortuous process and often the legally defined organization does not (yet?) correspond to the expected structure.

The level of delegation, decisional autonomy, and power to implement sectoral policies varies widely between countries, and even between cities in the same country, but there is a trend towards the reinforcement of local and regional government scales, closer to citizen. Interestingly, some metropolitan areas with few sectors under management may have very strong delegation and executive power in one, or only a couple, of sectors. There appear to be very different interpretations of how autonomous, powerful, and democratic these institutions should be. Some countries have vested them with directly-elected governments and legislatures, while others remain indirectly-elected bodies, functionally dependent from national or local governments, which may hinder their ability to adequately respond to supermunicipal demands and articulate integrated approaches to metropolitan governance.

Our research inquiry into how profound, and how effective, are local governance frameworks in each of the 9 metropolitan areas led to the development of a governance quality assessment tool. It consists of a system of indicators, adapted from the targets contained in UN's Sustainable Development Goals (SDG) so as to reflect the goals and targets typically asigned to the intermunicipal/metropolitan level.

The result is an assessment tool for the evaluation of metropolitan governance structures, proposing a system of indicators along 10 sectoral dimensions: Public Transport, Infrastructures, Planning, Environment & Risk Management, Economy, Housing, Health, Education, Social Justice, and Participation/Transparency. The indicators were then validated through a workshop and interviews with local and international stakeholders and experts, and the tool was tested on the Metropolitan Area of Lisbon and presented to international experts and applied to the 9 metropolitan areas. We expect that this tool could inform the future improvement of metropolitan governance frameworks.

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WHERE WILL UPZONING INDUCE CHANGES TO THE BUILT ENVIRONMENT?
Abstract ID: 559
Individual Paper Submission

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Many cities across the US are facing an affordable housing crisis. At the same time, much of America's urban land is zoned exclusively for single-family homes (Hirt, 2014), the most expensive and land-hungry housing type. Many regions have made or are considering making changes to their zoning codes to relax single-family zoning and allow multifamily construction in more areas (Infranca, 2019). Many academics believe that these changes will ease the affordability crisis (Been et al., 2019), although others dispute this view (Rodríguez-Pose & Storper, 2019).

An important question brought forth by these policy changes is how much effect they will have on the built environment. While large swaths of metropolitan areas may be rezoned to allow more dense housing, construction of new housing in many of these areas may not be economically feasible. In this research, I evaluate where development of new multifamily dwellings would be economically feasible in Southern California, if single-family zoning were relaxed.

I do this by estimating the construction cost for a number of building plans, ranging from duplexes to 12-unit developments, that could fit on existing single-family lots. For each residential parcel with a potential zoning change, I evaluate which of these building plans could be constructed on the lot, given the geometry of the lot. I compare the construction costs of all geometrically feasible buildings to their rental values in that location (estimated using a hedonic model) and the opportunity cost of removing the existing structure to determine if development is economically feasible in that location.

In some locations, rental values will likely not be enough to justify constructing more dense housing than the single-family homes that already exist. Even if zoning regulations are relaxed, such neighborhoods are unlikely to change. In other areas, rents are high enough that developers would build new housing if permitted by regulations. This research identifies those areas, to give policymakers and land-use modelers better information on the built environment effects of the policies they are considering.

Proposals to relax single family zoning come in many forms. Some favor simply removing single-family zoning altogether. Others focus changes into areas around transit stops, to encourage sustainable transportation and reduce parking demand. Other policies exclude low-income or minority areas from policy changes, in an attempt to guide gentrification pressures into less sensitive communities. Therefore, I simulate and compare multiple possible policy scenarios.

Significant relaxations of single-family zoning are a part of policy discussions in many cities. The effects of these changes on construction are unclear, but understanding these effects will be critical to producing the most socially desirable outcomes. Furthermore, understanding where construction will likely occur as a result of these policy changes is important for planning for future transportation, infrastructure, and public service needs. This research is a first step to understanding these effects.

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OFF-STREET PARKING STRATEGIES OF PROPERTY DEVELOPERS FOLLOWING THE REMOVAL OF MINIMUM PARKING REQUIREMENTS IN BUFFALO, NY
Abstract ID: 568
Individual Paper Submission

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This research examines the impacts of parking deregulation on real estate development strategy in Buffalo, NY following a substantial zoning code reform. We seek to understand if and how the 2017 enactment of Buffalo's Unified Development Ordinance, also known as the Green Code, has influenced the approach of real estate developers in determining supply of off-street parking spaces in the absence of minimum parking requirements. Our work augments previous quantitative findings about on-the-ground change in parking supply resulting from the removal of minimum parking requirements in the city-wide zoning ordinance. We examine decision-making — in the absence of minimum parking requirements — using a qualitative approach to assess transportation demand management, off-street parking supply, and development strategies of real estate developers seeking approval of major projects from the city's planning board. We meet our research objectives by conducting one-on-one interviews with developers to discuss experiences before and after the implementation of the Green Code. This methodology allows us to understand if parking deregulation has changed how property developers approach real estate projects and make determinations regarding off-street parking supply in Buffalo. We also obtain insight into considerations influencing the amount of parking included in development efforts, including transportation demand management strategies, access to non-automobile transportation modes, site selection, land use trends and financial feasibility of projects. Insights into developer perceptions and decision-making regarding off-street parking provision in a deregulated environment informs planners, real estate professionals and policymakers as to potential implications of repealing minimum parking requirements. Our analysis of qualitative data from interviews will lead to a greater understanding of the effects of parking deregulation.

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SOCIAL EQUITY CONSIDERATIONS IN U.S FLOOD RISK POLICY: EVALUATING STRUCTURAL BIASES IN FEMA DISTRIBUTIONS FOR BUYOUTS AND PROPERTY IMPROVEMENTS FUNDED BY THE HAZARD MITIGATION GRANT PROGRAM
Abstract ID: 586
Individual Paper Submission

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There is a growing body of work that identifies patterns of structural bias in federal programs charged with managing flood risk. This paper builds upon recent work that empirically evaluates how FEMA funds are distributed post-disaster via the Hazard Mitigation Grant Program (HMGP) (Mach et al.,

2019)(Elliott et al., 2020). The guiding research question is: does funding supplied through FEMA's HMGP disproportionately benefit white, wealthy communities compared to minority, low-income communities? The research question is further refined by examining what types of property actions or improvements are funded through the HMGP, and how these vary by race and income.

Flood risk policy in the United States has a complex history. There is a long line of research suggesting that flood risk is in part socially constructed due to patterns of development (White & Haas, 1975). Unfortunately, some policies like the National Flood Insurance Program have been found to encourage development in the floodplain. Around eight percent of the U.S. population—or some 23 million people—now live in low-elevation coastal areas (Kunreuther et al., 2018). The risk that these communities face is further exacerbated by climate change impacts like sea level rise and storm surge.

Hazards are not felt the same everywhere by everyone, nor are the safety nets and benefits equitably distributed. This is because U.S. flood risk management operates in a complex policy environment. Biases are built into multiple, layered, and interacting policies, politics, and local histories. Some communities are pre-disposed to risk due to historical patterns of urbanization such as red-lining, urban renewal, and poor housing construction. Further, low-income and minority communities may have more difficulty navigating the formal aid network due to language barriers, community isolation, and cultural insensitivities (Fothergill et al., 1999).

The distribution of funds in post-disaster scenarios via programs like the HMGP is based on a rational process of cost-benefit assessment. Program funds are intended to reduce or eliminate long-term risk to people and property, so the cost of a given project must be offset by its ability to mitigate future losses. When properties are damaged during a disaster, eligible applicants may use HMGP funds for a variety of mitigating property actions, such as structure acquisition, relocation, retrofitting, etc. The cost-benefit logic of the HMGP ignores the unique histories, competing interests, and technical capacities of different localities. White, wealthy communities that have higher capacity, more financial resources, and better political connections may be able to leverage the HMGP to fund desirable property improvements using public dollars.

Preliminary studies like Mach et al. and Elliot et al. are the first to conduct nation-wide assessments of FEMA's HMGP using OpenFEMA data, and data recently released under the freedom of information act. However, their studies are limited to an examination of applicants that have used FEMA funds for buyouts. This paper extends this analysis to consider other property actions funded by FEMA besides buyouts, like property elevations and floodproofing. Preliminary findings examining FEMA funded property actions in New Jersey post Hurricane Sandy show that property elevations are more common in coastal areas (likely due to high property values) compared to acquisitions which appear to be more strongly concentrated inland and in lower-income areas.

This paper further evaluates FEMA's HMGP based on social equity considerations and teases out patterns of structural bias. These findings are of timely relevance as U.S flood risk policy continues to reform in the face of climate change. While Mach et al. and Elliot et al. have begun making important inroads, there is much left to unpack in the OpenFEMA datasets with important implications for policy and planning related to flood risk.

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Key Words: Flood Risk, Hazard Mitigation, FEMA HMGP, Buyouts and Property Improvements, Program Evaluation

TRIP CHAINING EFFICIENCY IN POLYCENTRIC REGIONS
Abstract ID: 678
Individual Paper Submission

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Compact development provides economic, social, environmental, and health benefits for communities and residents. Areas can connect compact developments through high-quality transportation options, creating a network of centers, or a "polycentric" region. As the antidote to sprawling suburbs, compact centers could encourage all the things sprawl discourages: public health, environmental sustainability, social cohesion, and economic diversity (Hamidi et al., 2015; Meijers and Burger, 2010).

To date, only a few studies have assessed the transportation benefits of centers, and surprisingly, to our knowledge, all of them focus on travel behavior at the trip level. In this study, we investigate the transportation impacts of centers at the trip-chain (i.e., tour) level. A travel tour is a sequence of trips that begin and end at home, also known as a home-to-home loop.

The literature suggests that trips as the basic unit of analysis in many of the travel demand models should not be analyzed in isolation. In contrast to individual trips, tour-based modeling can better capture the true behavioral causality, as opposed to spurious correlations (Frank et al., 2008). Individuals think about the modes they want to use for an entire tour (including the first destination, intermediate stops, and return trips) before they leave their home. An individual will not use his car to go to his work and then use transit to go back home. Hence, failure to account for the dependency of trips within a tour can result in a biased understanding of true travel behavior.

By using household travel survey data for 28 diverse regions in the U.S., which consists of 235,291 tours, we investigate trip chaining efficiency in centers. A tour is efficient if it comprises travel modes other than the personal automobile. The higher the proportion of walk, bike, or transit trips, the more efficient the trip chain. Also, the shorter the trips (even by automobile), the more efficient the trip chain.

We use a parametric test (i.e., ANOVA) to assess trip chaining efficiency for three distinct types of tours; 1) tours that fall entirely within a center (i.e., all trips in a tour were generated inside a center), 2) tours that some of the trips were generated inside a center and the rest outside (hybrid tours), and 3) tours that do not have any trip/stop inside a center. Our results lend credence to the hypothesis that tours within a center are associated with more walk, bike, and transit mode shares and shorter trip distances. Even tours associated with trips both inside and outside a center have incorporated more sustainable modes of travel and shorter trips compared with the tours entirely outside a center.

In sum, our study findings demonstrate that if the goal is vehicular travel reduction, development patterns can have a significant effect on individuals' travel behavior. Placing the same individuals in more accessible residential locations would cut down significantly on their vehicular travel. Hence, as our empirical findings suggest, centers may promote active transportation, as well as transit use. Encouraging individuals to use these modes of travel will have great environment-, health-, and community-related benefits.

Implications for land planning are more complex than merely pedestrianizing or transitizing the suburbs. Planners and policymakers who hope to increase walking, biking, and transit use should concentrate growth in compact commercial cores of residential areas, while transit agencies should consider trends like chained trip-making and focus transit service on central places. This will facilitate efficient automobile trips and tours. The more sprawling the area, the more important this becomes.

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Key Words: Polycentric Development, Trip Chaining, Tour-based Modeling, Compact Development, Sustainable Transportation

PLANNING REFORM FOR HOUSING SUPPLY: RECENT STRATEGIES AND THEIR IMPLICATIONS IN AUSTRALIA, CANADA AND ENGLAND
Abstract ID: 704
Individual Paper Submission

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Over the past two decades, in Australia and elsewhere, governments have responded to mounting concerns about the supply and affordability of housing in major city regions by calling for reform to planning systems. These calls reflect an assumption that overcoming predominantly local level regulatory barriers to new supply will enable housing developers to lift output and respond to demand. Consequently, these regulatory reform agendas have generally been situated in urban research within the context of broader neoliberal strategies which favour market-based solutions to urban development challenges (Allmendinger 2016, Ruming and Gurran 2014, Beer, Kearins, and Pieters 2007). However, while researchers have examined the political drivers and rationale of recent planning reform strategies, little research has investigated implementation experiences and outcomes. This includes whether and how seemingly common calls, for example, for faster development application processing times, greater certainty of development rights and or greater flexibility for particular projects, have resulted in real changes to statutory planning systems, and the implications for housing development.

This paper begins to address this gap through a detailed analysis and comparison of planning reforms targeted at enabling housing development in NSW (Australian); Ontario (Canada); and, England (UK) since 2005. The analysis is guided by the following research questions: (1) since 2005, what types of planning policy reforms have been enacted to address perceived planning system barriers to housing development? (2) how have implemented reforms altered development rights and development assessment processes for residential development, and what are the implications for development control and housing supply?

The detailed characteristics of national / state / provincial level planning reforms is systematically captured through analysis of political speeches; legislation and policy documents; and government issued guidance material explaining reforms in each jurisdiction. The findings of the analysis are used to develop a typology of reform types, based on the way in which they alter development rights for particular housing types and development assessment processes. The outcomes of key reform strategies, as implemented in NSW, are then examined using a combination of primary and secondary data on development applications and outcomes, the latter derived from content analysis of individual development application documents, analysed using descriptive statistics and GIS.

The research finds that planning reforms aimed at reducing regulatory barriers for private housing suppliers have resulted in significant changes to statutory planning systems, but that the detailed design of reforms and the extent of change that they enact differs across jurisdictions. In thinking about the implications of implemented reforms, the paper argues that it is useful to distinguish between three reform types. The first is reforms that aim to standardise, speed up and depoliticise development assessment processes, but do not fundamentally change the development controls applying to particular sites or development types. The second is reforms that allow developers relief from established local development control policies on a discretionary or case basis, termed in the paper 'discretionary deregulation'. The third is reforms in which higher level government enacts new statutory planning policies that override local development control settings, termed in the paper 're-regulation'. The detailed analysis of NSW reveals that the latter two reform strategies have enabled residential development that would not previously have been permitted, but that they have had different outcomes in terms of the behaviour of housing suppliers; actual patterns of new development; and, community responses.

Overall, the research contributes to understanding of 'actually existing neoliberalism' (Brenner and Theodore 2002) in planning and housing policy and provides a conceptual framework for further comparative research on reform outcomes. It also contributes to theoretical understanding of relationships between planning and housing outcomes and, particularly, the role of regulatory reform.

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Key Words: Regulatory reform, Housing supply, Metropolitan planning

DOES IT GO AS PLANNED? AN EMPIRICAL EVALUATION OF PLANNING-DEVELOPMENT NEXUS
Abstract ID: 740
Individual Paper Submission

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Amid a growing recognition that restrictive zoning practices have contributed to unaffordable housing and residential segregation (Gyourko & Molly, 2015; Lens & Monkkonen, 2016), commentators and scholars have called for states to play a more prominent role in channeling local decision-making in land use and housing development. California, in order to address regional housing needs, has long required local governments to plan for state-mandated housing targets (Ramsey-Musolf, 2016). Each community must detail how it will accommodate the housing goal in the mandatory housing element of its general plan, and in particular, it must identify potential locations for future developments in the subsequent five-

or eight-year planning cycle. However, development does not necessarily occur at these planned housing opportunity sites. One explanation is that jurisdictions do not always succeed in identifying locations where developers are interested in building. Another reason is that jurisdictions typically maintain full review processes for projects proposed for these sites – processes that are part of what legal and public policy scholars described as the "complicated conveyor belt" for converting California's mandated housing development goal into actual production (Elmendorf et al., 2019).

This study conducts two empirical analyses to address the potential mismatch between planning and development. The first analysis utilizes the housing opportunity sites inventory data released by the Metropolitan Transportation Commission in the San Francisco Bay Area and examines how local planning processes have changed over time in the region. Specifically, what are the characteristics of locations consisting of the housing opportunity sites inventory identified for the 2007-2014 and 2015-2023 planning cycles, respectively? Do local planning processes respond to housing market factors and coordinate with other policy objectives such as transit-oriented development?

The second analysis uses multivariate regression to assess the interplay of residential permitting and local planning processes in four cities in different parts of California: Los Angeles, San Diego, Oakland, and San Francisco. Using detailed comprehensive data on multifamily projects permitted in these jurisdictions between 2014 and 2017, this analysis models the chance of a multifamily project being entitled and the number the units permitted, separately, as a function of measures of local planning processes and regulatory actions. The models are facilitated by the detailed nature of the dataset, which includes indicators of project characteristics and entitlement processes (e.g., whether a particular project has requested zoning changes). Local planning processes are reflected in the characteristics of sites where the projects are located, such as planned land uses, zoning categories, and being identified as a housing opportunity site in the housing element. Regulatory actions include measures such as whether a project is subject to ministerial review, has requested zoning changes, and is exempted from environmental impact assessment requirements. Neighborhood-level demographic and socioeconomic characteristics serve as control variables in the model.

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Key Words: state mandate, housing element, local planning, multifamily development, California

WHAT DETERMINES MIXED LAND USE? ANALYSIS OF BIG DATA ON COMMERCIAL DISTRICTS IN SEOUL, SOUTH KOREA
Abstract ID: 806
Individual Paper Submission

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Each commercial district has a different degree of mixed land use. Some commercial areas are a huge cluster with monotonous retail use, while others consist of a wide variety of land uses including residential or office uses as well. The specialization or diversity strategies are both to maintain the vitality of the region by utilizing localization economies and urbanization economies, respectively. Locational factors such as proximity to other amenities such as transit and public services have a great influence on land use mix (LUM). TOD around the railway station leads to mixed land use in the area due to efficient transit (Chen et al., 2016). Also, retail and food establishments demonstrate a certain location pattern in the urban area, making the neighborhood more diverse (Sevtsuk, 2014). A certain age or sex group of customers may also affect LUM in a commercial area due to their love of variety. Some young adults and the elderly prefer homes close to various urban amenities, and thus they tend to be attracted to a higher mix of land use (Blumenberg et al., 2019).

This paper aims to find the causes of differences in LUM in terms of the location and socioeconomic environments of commercial districts and the demographic characteristics of visitors and residents. To this end, we introduce a micro-scale approach where LUM is defined by the entropy index using data for more than 100,000 individual buildings and the demographics of visitors are examined based on a real-time big data, Seoul Living Population (De Facto population) data, as in research of individual travel patterns using smart card data (Menley et al. 2018). The existing studies on the relationship between land use and human activity usually use data collected at a specific time by a survey or the aggregation of existing data. The fixidity of the time dimension of data makes it difficult to examine the dynamic changes of visitors to commercial areas. The real-time big data on visitors enable us to overcome this limitation. By processing mobile phone GPS data, from January 1, 2018 to December 31, 2019, we analyzed the distribution of visitors in the city of Seoul and their visiting patterns in commercial districts along the time dimension. We use the number of visitors in the peak hour of each commercial district, their age and sex as explanatory variables in addition to the locational and socioeconomic factors of the district.

The expected results of the analysis are as follows: First, the total number of visitors increases the variety of LUM in a commercial district, as preferences become varied with the number of customers. Second, the LUM is relatively high in the commercial areas where the proportion of young adult (20-30s) visitors and residents is higher than those in other age groups. Lastly, higher accessibility to transit increases the variety of LUM by reducing the need for parking space. These results may help planners design and regulate land use for commercial areas in terms of LUM in an appropriate way.

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Key Words: mixed land use, urban commercial clusters, transit accessibility, big data, applied GIS

REGRESSIVE ZONING? INSIGHTS FROM LAND USE CHARACTERISTICS OF CITIES IN SOUTHERN CALIFORNIA
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Individual Paper Submission

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Researchers have argued that zoning regulations act as a barrier to housing development and contribute to housing affordability crisis (Glaeser & Gyourko, 2002). Several cities in fast-growing regions in the United States, such as the Southern California region with considerable shortage of housing, have recently adopted new land use policies to accommodate growth and to address housing affordability crisis (Garde & Kim, 2017). Tiebout's theory reminds us that self-governing municipalities in a metropolitan region compete with each other for tax revenues and offer bundles of public goods to attract certain types of residents; individuals sort themselves into communities based on their preference (called Tiebout sorting), which leads to homogeneous communities (Tiebout, 1956). Focusing on municipalities in Los Angeles County, Heikkila (1996) contended that municipalities function as Tieboutian clubs and contribute to social and spatial segregation. Banerjee and Verma (2005) used land use configurations of cities in Los Angeles County to generate clusters of similar cities, and examined the socioeconomic characteristics of these clusters to confirm that they reflect sorting by income and ethnicity. Does this mean that new land use policies adopted by cities in a region might restrict developments such as multi-family and low-income housing, and contribute to Tiebout sorting?

In California, state law requires Metropolitan Planning Organizations such as the Southern California Association of Governments (SCAG) to prepare Regional Housing Needs Allocation (RHNA) specifying the total number of units that need to be accommodated, by housing types and jurisdiction, which requires cities to show where these units can be accommodated. RHNA allocations typically compel cities to amend existing land uses to accommodate multi-family and low-income housing.

We focused on all 180 cities in the five-county Southern California region to examine: (1) the differences in land use profiles of cities from 2008 to 2016, (2) the extent to which land use profiles of cities as reflected in new land use policies are associated with their socioeconomic characteristics, and (3) whether new land use policies adopted by cities suggest preemptive attempts to restrict the construction of multi-family housing.

We used land use data available from SCAG for 2008 and for 2016, and conducted cluster analyses to develop two typologies of cities to discuss the implications. For instance, the results indicate that several cities from a 2008 cluster with relatively large proportion of open space, have converted parts of land designated as "open space" to "undevelopable or protected lands" in 2016. Because protected lands prohibit new housing development, we refer to this as "regressive zoning."

Further, the results of analyses of variance (using median household income and population density data from US Census, RHNA shortfall data for low-income housing from California Housing and Community Development, and land use change data from SCAG) indicate statistically significant differences across 2016 clusters. For instance, cities in a cluster with high proportion of low-density single-family residential uses and relatively high MHI restrict more housing, and especially multi-family housing.

Overall, the results indicate that while some cities have adopted new land use policies that permit more multi-family and low-income housing, others have adopted new policies that are more restrictive of such developments. The paper concludes with recommendations for zoning reform to address regressive zoning and housing affordability crisis.

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Key Words: Land Use, Housing Shortage, Tiebout Sorting, Southern California

REGIONS, INSTITUTIONS, AND DEVELOPMENT: EVIDENCE FROM CROSS-NATIONAL ANALYSIS
Abstract ID: 896
Individual Paper Submission

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Over the past 20 years, researchers have made considerable progress in evaluating the goals of urban planning by looking, variously, at the assumptions on which it is based and the outcomes it yields. These gains—enabled by large datasets and new approaches to spatial modeling (Batty 2018)—have helped to clearly establish that institutions matter to both the form and function development. But, while the role of institutions has long been well understood (see, for example, Burby and May 1998) when viewed within particular planning frameworks, less understood is the role of institutions when viewed across alternative planning frameworks. North American, European, and Asian patterns of regional development have much in common, in spite of being governed by very different institutions. Remaining unknown, is how planning frameworks differ from each other and how those differences relate to regional development patterns: all else being equal, how do patterns vary with institutions?

Responding to the question, this paper explores spatial patterns of development within an international cross section of metropolitan regions between 2000 and 2014. The objectives of the work are three: (i) to delineate a set of comparable metropolitan areas situated around the globe, based on the EU-OCED definition of functional urban areas(see Dijkstra et al 2019); (ii) to construct a classification-based index of institutional frameworks—restrictive vs. permissive; nationally vs. locally-oriented; —within the regions that enables comparison of their various planning/regulatory frameworks; institutionally traditional vs. novel; resilient vs. vulnerable; and so on (iii) estimate a series of econometric models aimed at evaluating the relationship between alternative institutional frameworks and development outcomes. The modeling framework, drawn from the literature on economic growth and optimal city size (Henderson 2003), enables direct insight into how cross- and within- national differences in planning influence spatial patterns. The models yield analytical results consistent with those of other globally-oriented studies of regional growth and convergence and lead to a set of generalizable conclusions and policy recommendations.

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Key Words: Regional development, Governance, Land use

THE SIDEWALK TORONTO PARTNERSHIP: UNDERSTANDING HOW AND WHY THE RELATIONSHIP BETWEEN PUBLIC AND PRIVATE ACTORS HAS SHIFTED THROUGHOUT THE DEVELOPMENT OF QUAYSIDE

Abstract ID: 907
Individual Paper Submission

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Smart city projects are rapidly becoming a dominant element in the global urban agenda, and their increasing provision by private corporations represents a turning point in planning and governance. In 2017 Sidewalk Labs Inc. (a subsidiary of Alphabet Inc.) and Waterfront Toronto (a tripartite government agency) launched Sidewalk Toronto, an initiative to develop the waterfront Quayside neighbourhood as a smart city. It is the newest and largest North American project in the race between technology companies to become the premier smart city provider, just as they have competed to provide digital solutions in nearly all other areas of our lives.[1] The high-profile nature of this project has raised questions about the roles of private corporations in planning, developing, and governing public spaces and entire neighbourhoods.

This paper explores the partnership between Waterfront Toronto and Sidewalk Labs Inc. Key questions include: Why did Waterfront Toronto and Sidewalk Labs frame this initiative as a partnership? What roles were originally envisioned for each partner, and what challenges arose? How did Waterfront Toronto and Sidewalk Labs reframe their roles, and has this been successful? What impacts has the shifting of roles between public and private actors had on the project? Whose interests are represented in this planning process? And finally, what lessons can be learned from the Waterfront Toronto / Sidewalk Labs partnership?

This paper is based on semi-structured interviews with 35 decision-makers, advisors, consultants, writers, and advocates, participant observation of public meetings led by both Waterfront Toronto and Sidewalk Labs Inc., and discourse analysis. Findings indicate that the unique structure of the original partnership between Waterfront Toronto and Sidewalk Labs, and the power and resource discrepancies between the two organizations, resulted in a blurring of responsibilities and privatized planning and consultation processes that lacked accountability. Although Waterfront Toronto subsequently acted to reframe this relationship, a legacy of confusion remains. This has led to increased public distrust in the planning process and in the ability of Waterfront Toronto to serve the public interest.

Given its scale and profile, Sidewalk Toronto could set precedents for how smart cities are planned and governed in the future. Much of the discussion around the project, and the smart city discourse more broadly, focuses on how technology can reshape urban life.[2] However, new smart city institutional frameworks will be just as transformative. This research brings together public-private partnership, smart cities, and entrepreneurial city literatures, and responds to identified smart city research gaps related to partnerships[3]; urban planning[4]; and grounded in case studies.[5] Insights contribute to academic and policy debates around the privatized smart city.

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Key Words: Public-private partnership, Governance, Smart cities, Public consultation

WHAT HAPPENS WHEN TEXAS ARGUES ABOUT BUILDING MATERIALS? LOCAL GOVERNMENTS RESPOND TO STATE'S DEREGULATION IN PLANNING
Abstract ID: 908
Individual Paper Submission

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The relationship between local land regulations and residential development is undertheorized. Although strong claims are often made about the dampening and distortionary impacts of local development regulations, like zoning, and planning processes, platting and plan approvals, the empirical evidence paints a murkier picture. Indeed, for most forms of land development regulation there are more questions than answers (Schill 2005B). Yet, deregulation or the reduction of regulatory barriers remains a key policy solution to increasing the affordable housing stock in many metropolitan areas (Glaeser and Gyourko 2003) despite the fact that "existing research on the effects of government regulation on the supply and cost of housing is insufficient to guide public policy" (Shill 2005A).

A major unknown is how the primary stakeholders – local government planning officials and housing developers – respond to efforts to deregulate, or reduce regulations on buildings and streamline the approval process. Many studies presume that cost-saving materials or procedures are not used because of regulations but such techniques can fail to be adopted because of inefficient information, builder inertia, inadequacy of skills, or perceived rejection by consumers (Oster and Quigley 1977; Koebel et al. 2003). Likewise, local governments may respond to state efforts at deregulation in many ways, including devising new regulations or processes or simply refusing to comply with state laws that forbid the regulation of particular aspects of the built environment.

This paper is part of a larger project investigating the relationship between local regulations and regulatory processes, and housing affordability in the state of Texas. In its 2019 session, the Texas legislature passed two bills (HB2439 and HB 3167) aimed at reducing regulatory barriers to affordable housing. As of September 1, 2019 local municipalities in Texas are prohibited from adopting and enforcing regulations requiring the use of certain building materials (HB2439) and required to meet a 30-day approval window for plats and plans submitted to municipalities (HB 3167).

We present findings from series of focus groups and interviews with development and planning professionals conducted in 2020 in the Dallas Fort Worth metropolitan region. Our preliminary findings highlight four major themes in local government response to state legislation: (1) The impact of

deregulation has greater impact on medium size suburban communities than it does on central cities; (2) Local governments are relying on development agreements to enforce building materials standards that cannot regulate directly; (3) Other are encouraging local residents to use the deed restrictions (CCR; HOA) to regulate building material standards and (4) the state professional planning organization has shifted its role from a purely technical and professional development toward advocacy work. We explore these themes in more detail and provide a discussion of how these initial findings relate to our broader understanding of how local actors respond to state efforts at deregulation in planning.

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Key Words: Building Materials, Land use Regulation, Preemption, Local Governance, Texas

DENSIFYING THE DREAM: "MISSING MIDDLE" HOUSING, LAND USE MIX, AND SUSTAINABLE SUBURBAN GROWTH IN THE TORONTO REGION
Abstract ID: 912
Individual Paper Submission

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Denser living arrangements are becoming the new normal, and densification is a cornerstone of the Canadian urban planning approach to smart growth and sustainability (Charmes & Keil, 2015). Politicians, scholars, and homebuilders in the Toronto region, Canada's largest housing market, have called for an increase in the supply of so-called "missing middle" housing types: townhouses, stacked townhouses, and low-to-mid-rise apartment buildings. The Canadian National Housing Strategy identifies the critical need to improve opportunities for first-time homebuyers and balance the housing stock to provide "the right supply" for a broader range of household needs and budgets. Arguments for constructing medium density housing include providing dwelling sizes suitable for family households and meeting densities that can support improved levels of transit servicing, thus reducing car use (Moos, Kramer, & Williamson, 2015).

Compact built form is championed for producing urbane and walkable places with convenient access to daily needs, or "complete communities" in the discourse of the Toronto region's planning policy. The growth management plan for the region around Toronto directs municipalities to plan for "the achievement of complete communities through a more compact built form" (italics added). Yet, emerging challenges such as traffic congestion and car-cramming in densified neighbourhoods belie this linearity. Thus, there is an urgent need to critically examine the relationship between housing type, density, and neighbourhood planning to improve the theory and practice of managing the tide of suburban expansion. In the absence of such understanding, despite being denser, new developments risk repeating suburban problems and missing the opportunities to enable walkability and reduce car use, which has environmental benefits and potential cost-savings for households.

Density alone cannot urbanize the suburbs. Land use mix is an essential component for constructing new environments as "complete communities." Building a range of denser housing is only one puzzle piece in the complex jigsaw of how to accommodate a growing metropolitan population and facilitate options for

affordable homeownership. My approach recognizes the equal importance of how densified housing developments are designed and integrated within the broader neighbourhood and region.

This paper presents findings on the following research question: Are medium-density developments part of mixed "complete communities" with convenient access to transit options, major employers, schools, child care, and amenities including shops, cafes, and parks and recreation? Using GIS to measure land use diversity and a series of proximity tests, I report on how well the densifying suburbs are doing at building "complete," not only "compact" communities.

This work contributes to both planning and housing theory and practice. We are living on a "suburban planet" in a "suburban century" with the need to place suburbs in their rightful place in planning research (Keil, 2018, p. 15). Concern about sprawling development and calls to urbanize the suburbs through retrofit, "sprawl repair," and densification represent the "zeitgeist" of contemporary planning circles (Phelps, 2015, p. 43, Dunham-Jones & Williamson, 2009). Furthermore, debates in housing studies indicate the need for expanded concepts related to housing affordability. While ratios of housing costs to income are easily assessed using census data, the measure is limited for capturing the wider range of factors impacting housing decisions, household budgets, and ability to pay. In the suburbs, the lower cost of housing may be undermined by high costs of transportation in dispersed, car-dependent surroundings. Among the many actions that impact housing affordability, urban planning can make critical interventions in improving access and connectivity. Stacked townhouses and other medium density units deliver price benefits via smaller unit size, but may also contribute to long-term housing affordability when developed as part of complete communities.

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Key Words: suburbanization, land use mix, density, access, housing

A FRAMEWORK TO EVALUATE STATE-LEVEL LEGISLATIVE SUPPORT FOR TOD-SUPPORTIVE LAND USE AND ZONING
Abstract ID: 962
Individual Paper Submission

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Central theme or hypothesis

Transit-oriented developments (TODs) are being constructed across the US as a tool to increase transit ridership, reduce vehicles miles travelled, and meet other policy objectives; such as, in California, meet the greenhouse gas emissions reduction targets.

Several barriers hinder the construction and finance of TODs. These include, an absence of supportive land use and zoning in and around transit stations that is often due to i) a lack of inter-agency coordination; ii) transit agencies' limited zoning and land use powers over land in and around the stations;

iii) a lack of will among various public agencies, including transit agencies, to develop TODs; and iv) a lack of enabling legal framework. For example, many transit agencies may not consider TOD planning and development to be their legitimate duty (Cervero et al., 2004). Therefore, they are not likely to advocate for land use and zoning powers required to construct TODs or to proactively coordinate TOD planning with the city governments.

Robust state-level enabling legislation can significantly help to remove many of these barriers by facilitating joint development agreements between public agencies and/or between public agencies and private developers; granting land use and zoning powers to transit agencies; and promoting inter-agency coordination. Such legislation can also provide clear signal to the governing boards of transit agencies that TOD planning and construction is within their realm of duties.

While the literature emphasizes the need for state-level enabling legislation (for example see Cervero et al., 2004; Renne et al., 2011), no recent peer-reviewed research exists. This study seeks to develop a framework to evaluate state-level legislative support for TOD-supportive land use and zoning and use California as an example to demonstrate how the framework can be implemented. It seeks to answer the following research questions:

1. What are the various land use and zoning-related barriers to the construction of TODs;
2. What major strategies are commonly used to address these barriers?
3. Whether and how the various pieces of state legislation in California provide legislative support to strategies and tools aimed at overcoming these barriers?

Approach and methodology

This study first reviews academic and professional literature to identify a) the various types of land use and zoning-related barriers to TODs and b) the strategies most commonly employed to address these barriers. Next, it reviews the various pieces of state-level legislation in California to ascertain: a) which of the barriers identified in the first step are being addressed by the legislation and/or b) which of the strategies to remove the barriers are being supported by the legislation.

Findings and relevance of work

The framework developed in this study will be useful for practitioners, policy makers, and academics to analyze legislation for other states. Among others, this framework could help discover:

1. Interrelationships between the various pieces of legislation. For example, while a separate piece of legislation, Infrastructure Financing District (IFD) Act of 1990, authorizes IFDs in California, the Senate Bill (SB) 310 of 2011 builds upon this piece of legislation to incentivize affordable housing within the IFDs; and
2. Temporal clustering of pieces of legislation. For example, while many landmark pieces of legislation such as Transit Village Development Planning Act of 1994 and Article 9 of the Public Utility Code (effective 2003) were temporally evenly adopted across the last 2-3 decades in California, several pieces of legislation are clustered over the last couple of years. These include SB 540 of 2017, AB 2923 of 2018, and AB 2263 of 2018. Many are motivated by the need to address the state's affordable housing crisis.

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Key Words: Transit-oriented Development, Zoning, Land Use, Legislation

DOCUMENTING PARKING POLICY: FINES, FEES, AND EXEMPTIONS
Abstract ID: 1073
Individual Paper Submission

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In many cities, finding street parking can be a quagmire. In some neighborhoods drivers must pay for parking at meters. In others they must have permits. In still others anyone can park free, but subject to time limits. And in many places drivers park with no restrictions at all. In all these places, the rules can change by time of day or day of week: maybe parking is time-limited in the afternoons but permitted in the evening, or metered during the day but free at night. Compounding this variance by place and time, moreover, is variance by person and vehicle. Some drivers are exempt from some of these rules (people with disabilities, for instance, often don;t have to pay at meters but do need to move their cars for street cleaning), and so are some vehicles (low-emission automobiles are often exempt from meter payments). The sheer variety of regulations, and the fact that they often change from block to block, make parking regulation less legible, and increase the probability that drivers will break a rule. Breaking a rule invites a fine, but the chances of being fined, and the size of the fine itself, also vary tremendously depending on which rule the drivers break and where they break it.

In this article we examine the origins and consequences of street parking's uneven and illegible management, using the City of Los Angeles as a case study. We suggest that curb parking's status as unimproved land, which gives it a fixed supply, creates incentives for governments to divorce its provision from prices. Because parking, unlike other utilities, does not need to be physically reproduced for each new user, its revenue can seem inessential. Governments can thus feel empowered to use their monopoly power over it to either deliver it for free, or to price it some places while providing unpriced access to politically favored groups. The result is a wide variety of rationing rules, which creates two problems. First is that unpriced access, even with attempts to ration, creates shortages--a fixed supply might let elected officials think pricing is inessential, but in fact the opposite is the case (Shoup, 2011). So the quality of parking service declines. Second is that local governments do want to raise revenue from parking, even though they also wish to keep its price low. They can resolve this latter tension via the plethora of rules that arises because parking is not simply priced, by using fines to raise revenue (Garrett and Wagner, 2009; Makowsky and Stratmann, 2009). Using fines as a revenue instrument, however, is both poor public finance policy and poor law enforcement policy, so the problems in the system only compound.

Using qualitative data from city council motions, we show that parking decisions are often made with an eye to protecting certain residents from payment. Using quantitative data of parking tickets and annual city budget reports, we show that those decisions result in favored treatment for more affluent residents, and a higher burden for lower-income residents, often as a result of fines. We find that higher income neighborhoods are more likely to get preferential parking districts, while lower income areas are more likely to be metered, and - controlling for the number of meters - more likely to be fined. Our findings

suggest that public officials want to deliver goods and services at the lowest cost to their most influential constituents.

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Key Words: Parking, Parking tickets, Parking meters, Revenue

GROWTH MANAGEMENT IN DELAWARE: AN EVALUATION OF STATE AND LOCAL PLAN IMPLEMENTATION

Abstract ID: 1114
Individual Paper Submission

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Delaware is a growth management state. Its growth management program is centered on a system of mandatory review and voluntary compliance, where the state of Delaware sets broad goals and priorities for planning through its "Strategies of State Policy and Spending" document; and reviews plans, map amendments, and major subdivisions for consistency with state goals. State review is mandatory but compliance with state review is left to the discretion of local governments. A key aspect of Delaware's growth management program is a map that divides the geography of the entire state into four levels and a fifth "out-of-play" classification. Levels 1 and 2 are areas that are considered high priority for infrastructure investment, while level 3 is designated for long-term growth. Level 4 areas are typically contiguous agricultural lands and environmentally sensitive areas, while out-of-play areas are typically state-owned areas, areas with recorded easements and so on. Level 4 and out-of-play areas are considered unsuitable for growth. The "stick," so-to-speak, is that the state will not support infrastructure investments in level 4 and out of play areas. With this system of "level "designation, the state hopes to direct growth to existing urban areas on one hand, and protect natural and agricultural resources on the other. The state also aims to coordinate infrastructure planning with land use planning vertically.

While there is a significant and growing body of literature on the other growth management states (Burby & May, 1997), Delaware hasn't been the focus of much attention and to this extent remains a mystery (see Lewis, 2012). What is unknown is how effective Delaware's system is at managing growth and the implementation challenges along the way. In this paper, I focus on evaluating the following. To what extent do local plans and development decisions conform to the state of Delaware's growth management goals?

First, I evaluate the content of local plans to determine whether local plans incorporate state strategies in their content. Second, I use spatial analysis to map developments in Delaware, to determine whether they conform to the state's level designation and growth management strategy (Brody & Highfield, 2005;Laurian et al., 2004). Third, I review state comments on Sussex County's development decisions, particularly those that deviate from state growth management goals (e.g., projects that might have been authorized in level 4 areas), to tease apart and highlight tensions/conflicts in the implementation process. I particularly focus on Sussex County, Delaware. Delaware's resident population grew by 14.6 percent between 2000 and 2010, while Sussex County's population grew 25.9% in the same time. Land development activities consumed approximately 39,000 acres between 2002 and 2007, the largest amount of which (18,000 acres) occurred in Sussex County. According to the Delaware Population Consortium, Delaware's population is projected to increase by 25 percent (225,000) between 2010 and 2040, and

Sussex County is expected to see the largest percent increase in population (57 percent). Sussex County, therefore, faces significant growth pressure and provides an interesting context in which to study whether and how local governments conform to state goals in their responses to growth pressure.

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Key Words: Land use, Growth Management, Plan implementation

HOW DOES A COMMUNITY'S NETWORK OF PLANS COMPARE IN THEIR EFFORTS TO ADDRESS CURRENT AND FUTURE FLOOD HAZARD? A PLAN QUALITY ANALYSIS
Abstract ID: 1117
Individual Paper Submission

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Plans from multiple sectors and scales interact to affect growth and development in a community (Berke et al., 2015) and consequently influence resilience to flooding. One way to capture this interaction is through plan quality evaluation. Plan quality evaluation assesses plans based on a set of normative metrics that represent desired quality of plans (Berke & Godschalk, 2009). Higher quality plans are theorized to democratically foster engagement and better advance community goals like flood resilience (Berke et al., 2012). Substantial literature evaluates plan quality of specific types of plans - for example, Brody (2003) analyzes the efficacy of hazard mitigation through the plan quality evaluation of comprehensive plans and more recently, Woodruff & Stults (2016) explore quality of adaptation plans across US cities. However, there is a need to assess whether all plans or the network of plans developed by a community address flood risk and foster views on flood risk management while integrating local values into policies. Lack of engagement of those vulnerable to flooding, contradictions in values reflected in plans, or conflicts in policy focus may render flood-risk management ineffective.

In this paper, we ask: how do plans within a community compare in their efforts to address current and future flood hazard? To answer this question, we adapt plan quality evaluation metrics developed by Berke & Godschalk (2009) to explore the interactions between plans in four flood-prone cities that are leaders in resilience planning: Boston, MA; Baltimore, MD; Fort Lauderdale, FL; and Seattle, WA. The goal is to assess the degree to which flood-risk is integrated in the planning process within each city and to explore patterns across the four cities, drawing lessons on common successes and barriers to planning for flood-risk.

Preliminary analysis suggests that most plans within all four cities have clear goals and vision statements (average 94%) but fewer plans (average 43%) have explicit flood reduction or resilience goals. Similarly, most plans within all four cities (average 75%) describe the planning process and broadly recognize the involvement of stakeholders. However, details on planning processes and involvement of vulnerable populations vary by city. For example, unlike other three cities, a large number of Seattle plans (around 71%) mentions the involvement of stakeholders affected by policies and includes their comments. The analysis also suggests that the network of plans within all cities lack consistent fact-base on flooding and vulnerable populations. Boston has the highest number of plans with clear flood-risk maps, loss estimates, socially vulnerable districts- however this fact-base is not reflected across the network of plans. Moreover, consistent with literature (Woodruff & Stults, 2016), we find that, while most plans have clear policies, all four cities underperform in implementing and monitoring policies. Finally, within each city's network of plans, infrastructure plans have the lowest plan quality scores.

These findings support the need to one, establish consistent flood risk projections across plans for each community; two, focus on identifying and engaging vulnerable population as well as incorporating the values of those who are affected by policies (ie both procedural and distributive equity); and three, to move beyond developing strategies to implementing and monitoring strategies. In order to manage current and future flood-risk effectively, there is also a need to reduce inconsistencies across plan types. Infrastructure plans, for example, score low on plan quality in all four cities, and yet could play a critical role in directing investments and encouraging higher densities in flood-prone areas- increasing vulnerability to floods. Overall, our analysis implies scope for further integrating flood-risk management into the plethora of plans being developed by communities.

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Key Words: climate adaptation, hazard mitigation, plan quality, network of plans

WHAT ROLE DOES VACANT LAND PLAY IN URBAN INFILL DEVELOPMENT? A CASE STUDY OF COLUMBUS, OHIO
Abstract ID: 1138
Individual Paper Submission

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Infill development, which refers to reusing and restoring land has already been built in one way or another (pp.138, Wheeler & Beatley, 2014), has been widely recognized as both a sustainable and efficient model of urban development. Infill development can alleviate the shortage of urban land and achieve new development without new land requisitions and urban sprawl. It can also help create compact and vibrant communities with a diverse mixture of land uses. Typically, the parcels where infill development occurs can be classified into two categories: vacant land and currently occupied land (pp.317, Abedini & Khalili, 2019). Compared to currently occupied land, vacant land has significant advantages for infill development. First, the preparation costs of vacant parcels are much lower relative to parcels that are

being used. Moreover, infill development projects on parcels that are being used are often more time-consuming and complicated in terms of the coordination among stakeholders, property rights disputes, demolition and resettlement of current occupiers or residents. Additionally, the redevelopment of vacant land can help stabilize impoverished or abandoned neighborhoods. Many scholars argue that vacant land is the main and most suitable 'material' for infill development. However, infill development can occur on any developed parcels in the city, and whether most infill development projects take place on vacant parcels is not addressed by previous studies. Therefore, the research question of this study is what role vacant land plays in urban infill development. To be more specific, this study examines whether vacant parcels contribute more to infill development compared to occupied parcels and what factors lead developers to choose occupied parcels for redevelopment rather than vacant parcels in the same neighborhood.

To explore the above questions, this study selects Columbus, Ohio as the sample city. The population of Columbus has grown by more than 10% since 2010 and more than 400 thousand development projects were approved by the city council in the past decade. Columbus has lots of vacant parcels in stock, according to Bowman and Pagano's nationwide inventory of vacant land, the ratio of vacant land to total land area in Columbus is 12.4% in 2000. This study employs a mixed approach and has two phases. In the first phase, the study analyzes the proportion of vacant land redevelopment projects of the total infill development projects over the past decade. In the second phase, this study chooses three projects that took place on previously occupied parcels with similar sized vacant parcels in the same neighborhoods and then digs into the reasons why developers did not choose those vacant parcels by interviews. The conclusions of this study not only show whether vacant land is the 'optimal material' for urban infill development in practice but also point out the factors hindering vacant parcels' redevelopment. These conclusions are of great importance to the management of urban land and the promotion of urban infill development projects.

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Key Words: Vacant Land, Infill Development, Sustainability

MAYBE PLANNERS ARE UP FOR THE CLIMATE CHALLENGE? LEARNING FROM EXPERIMENTS IN URBAN AND REGIONAL CLIMATE GOVERNANCE
Abstract ID: 1174
Individual Paper Submission

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To address the climate emergency, we need to simultaneously reduce GHG emissions, adapt to new climate conditions, and try to make sure that we do all of this with justice as an organizing principle

(Anguelovski et al., 2016; Hughes, S. et al., 2018). Unfortunately, our current urban and regional governance systems were not designed to solve the problems we face and are totally ill equipped to address the magnitude of the problems we are expecting from climate change. In fact, planning, in many cases, has helped create unsustainable land use decisions that exacerbate environmental problems and lead to unjust outcomes (Rosan, 2016). Since this is the case, how can we learn from experiments in urban and regional climate governance where planners have adapted their practice and pushed for new institutions and multi-scalar arrangements to help us address these large scale climate challenges? This research builds off of the growing and exciting body of research on urban and regional climate governance (Shi et al., 2016). It examines current policy learning in climate governance using case studies of cities and regions in Europe and the United States that have adopted innovative governance approaches and asks about transferability and effectiveness. In each region, the research examines ways in which planners and policy-makers were able to (and not able to) bridge across sectors, time scales, politics, jurisdictions, and geography to address mitigation, adaptation, and social and environmental justice challenges. What were the opportunities, barriers, successes, and failures? To what extent is community input about justice and equity informing these new climate governance approaches? The goal of the paper is to build on research on urban and regional climate governance and identify a method for thinking about future opportunities, barriers, and planning innovations. The research asks, as planners, are we up for the challenge that climate presents?

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Key Words: Climate Change, Governance, Equity, Mitigation, Adaptation

COUNTY POLICIES TO CREATE COAST-SMART COMMUNITIES IN MARYLAND
Abstract ID: 1227
Individual Paper Submission

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The Sea Level Rise (SLR) has challenged coastal counties in the State of Maryland as it increases flood risks that threaten valuable properties, human lives, and natural resources. Recent studies point to needs to adopt planning policies that accommodate SLR of 2 feet along Maryland's shoreline over the next 50 years, and more than 5 feet for structures with a lifespan of 100 or more years (Canick et al., 2016).

Maryland's counties have participated in the CoastSmart Communities Program the State launched in 2009 to help coastal communities improve their preparedness to address SLR hazards. Coast-Smart policies, as defined by the State Program, include land use policies that seek to reduce coastal hazard vulnerability and build community resilience to SLR impacts. The program provides financial and technical assistance enabling local governments to incorporate natural resources and coastal management issues into local planning. Despite State and local efforts it is unclear whether Maryland's counties are prepared for potential SLR hazards.

This research paper investigates two major questions: what are coast-smart policies that counties have adopted to address SLR hazards in the State of Maryland? and to what extent are these counties prepared

for future hazards? To address these questions, the researcher surveyed Maryland's counties with high risks of SLR hazards, conducted content analysis of their comprehensive plans and hazard mitigation plans/programs, and analyzed secondary data obtained from state and local planning and environmental agencies, and the Federal Emergency Management Agency among others. The analysis shows variations in coast-smart policies adopted by Maryland's counties, and demonstrates how county population, income, and technical and institutional capacity for planning affect applications of coast-smart policies.

The research findings point to strengths and weaknesses of current local land use policies affecting county preparedness for SLR hazards, and demonstrate challenges counties face to adopt coast-smart policies helping their communities mitigate SLR impacts. Research findings will improve our understanding of effective county policies to address potential SLR hazards. They suggest significant policy implications for county governments seeking to create community resilience to SLR hazards.

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Key Words: Sea level rise, Coastal counties, Smart Growth, Maryland

SCHOOL RE-ZONING AND GROWTH MANAGEMENT IN TWO MARYLAND COUNTIES

Abstract ID: 1242
Individual Paper Submission

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This study examines the interaction between educational and place-based policies – school attendance zone design and implementation and growth management tools – and the ways leaders suggest they be used to foster or disrupt school segregation in Maryland. Specifically, this study addresses the following research question: How do school and non-school policy levers influence school rezoning within the context of diverse, suburban communities? We delve into agency-level policy design and implementation and examine how structural and institutional mechanisms constrain or facilitate efforts to foster school integration through school rezoning.

We understand historical processes of segregation formation at the city and neighborhood scales through discriminatory housing and transportation policies (Rothstein, 2017) and have a growing sense of how school district school facilities and enrollment management helped cement neighborhood and school segregation (Highsmith & Erickson, 2015). We also know how school segregation negatively affects academic and social outcomes, particularly for low-income students and students of color (Ayscue & Orfield, 2016). A few studies have looked specifically at the segregative effects of school attendance zones(Richards, 2014; Saporito, 2017; Saporito & Van Riper, 2016) . Yet we lack good information about how non-school policies, like growth management and other housing efforts, interact with the informal and mutable boundaries of school attendance zones.

Focusing on Baltimore and Howard Counties in Maryland, we used qualitative methods to investigate the

policies, decision-making processes, and political action around school attendance zone design and implementation and their links to housing and growth management policies. We conducted 24 in-depth interviews with regional, county, and school officials involved with housing, growth management, and/or school attendance zone policies. We also analyzed relevant policy documents, plans, public records, and media coverage of key education and housing policy efforts for evidence of local priorities. To make sense of these data, we draw on theories of institutionalism to understand the ways that school and planning systems are part of a broader institutional environment where structural, political, and policy dynamics within and across policy areas play a role in shaping policy and resource allocation, behavior, roles, and responsibilities (Meyer & Rowan, 1977; Scott, 2008).

We found that the policies and procedures governing school rezoning are not designed to facilitate integration. The formal policy and implementation mechanisms across school and non-school sectors foster a segregated status quo in three specific ways: first, state level growth management vision and framework fosters segregation at the local level. Second, school and non-school policies manage capacity, not composition. Third, public engagement processes and politics privilege opposition to desegregation. The technical and political specificities of both school rezoning and growth management efforts (from state and local levels) converge in ways that hinder integration and shield district administrators, school board members, and other county leaders from articulating and operationalizing a desegregation agenda.

This analysis contributes to our understanding of how non-school decisions—housing and growth management specifically—interact with the formation of school attendance zones and contribute to the persistence of segregated schools. While the housing-school nexus has long been recognized as contributing to segregated schools, this study shows the limitations of school-rezoning as a mechanism to alter school composition within a school district. It challenges assumptions that school districts can use boundary adjustments to alter school composition without coordinated, cross agency policy collaboration.

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Key Words: growth management, public schools, school zoning

THE EFFECT OF RISK PERCEPTION ON THE RESPONSE TO IMPLEMENTATION OF THE SPECIAL PLANNING ZONE IN QUEBEC
Abstract ID: 1268
Individual Paper Submission

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How disasters are governed has an influence on the "production and prevention of the growth of vulnerability, and ultimately for the causation of disasters and risks" (Scandoval, 2018: page). In the

province of Quebec, floods are having a dramatic impact on human populations; the 2019 spring floods inundated thousands of homes and forced the evacuation of over ten thousand people within 250 municipalities (MAMH, 2019). Flooding is expected to be a perennial challenge given that climate change models predict more frequent severe storms (Remoirz, 2019). Governance of flooding involves numerous actors, however since legislation in Canada allows federal and provincial governments to delegate responsibilities associated with disaster risk reduction (Raikes, 2016), flood preparedness largely falls to municipalities. Provincial regulations that limit rebuilding and development in flood zones have also fallen to municipalities to implement and enforce.

Tierney argues (2012) that examining the tools used within the governance framework is a way to analyze a disaster risk reduction system. Different stakeholders define risks, and individuals perceive them, differently, but the system – and the tools within it – reflect an encoding of specific understandings of risk and ways it should be managed. Theoretically, looking at the strengths and weaknesses of planning tools used in a disaster governance framework can help assess (a) the orientation of the system to different types of risk reduction, (b) its adequacy, and (c) elements that could be reworked to improve disaster risk management. With the right tools and considerations, stakeholders can be better prepared for future flooding events.

One planning tool is central to Quebec's flood management approach: the special planning zone (ZIS). In reaction to the 2019 spring floods, the Quebec provincial government passed a decree authorising designation of 'special planning zones' or, in its original French, zones d'intervention spéciale (ZIS). Areas with a ZIS delineation are under a development moratorium; citizens are restricted in what they able to do on their property, including, in many cases, from rebuilding. As of now, the ZIS designation has been applied to areas within 776 municipalities.

To determine the strengths and weaknesses of ZIS as planning tool to address floods, three methods are used. 1. Regulations are examined, looking at how risk is defined, flood areas are set, and the ZISs are implemented. 2. Public officials in five local jurisdictions—municipalities, townships and certain boroughs within the Montreal metropolitan region—are interviewed to document their perceptions of risks, reactions to the ZIS, and successes and difficulties in implementing it. 3. interviews with key informants (lawyers, provincial officials and researchers) provide insight into the formulation of the ZIS decree and its implementation.

Interviews uncovered difficulties in the ZIS implementation process, from lack of clarity on designated areas, resistance from local residents, and negative impacts on municipal finances. Preliminary results reveal inequities such as how a municipality's size and the socio-demographic composition affect its ability to effectively implement ZIS. The uniform application of financial aid policies and service provision by the provincial government also plays a role in how well citizens can recover from a flooding event. As such, the research documents considerable negative side effects of ZIS, and the emergence of new forms of risk, for municipalities, vulnerable social groups, and specific individuals, even as the direct exposure of homes and households to floods has been reduced.

The research contributes topically relevant information on the efforts of Quebec's provincial government to reduce risks through measures to be implemented locally via the special planning zone (ZIS) tool.

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NEGOTIATED TRAJECTORY OF FARMLAND TENANCY: EMERGENCE OF FARMLAND BANKING IN JAPAN
Abstract ID: 1283
Individual Paper Submission

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State intervention in land use is often politicized, making uneven socio-economic and environmental impacts on different groups of people across different regions. Tracing back to European state restructuring around 1990, the concept of multi-level governance (MLG) has gained currency over the past decades as a way to reallocate 'authority upwards, downwards, and sideways from central states' so as to strategically exploit cross-level opportunities in negotiation, deliberation and implementation for policy-making activities (Hooghe and Marks 2003, 233; Stephenson 2013). Adopting the MLG model, Japan's government introduced farmland banking in 2014 as an intermediary mechanism for farmland tenancy in an attempt to overcome farmland abandonment and agricultural downturn. To institutionalize this mechanism, the national government has requested the prefectural authorities (i.e., the first level of jurisdictional division of the country) to establish farmland banks (FBs) as semi-public regional agencies to expedite farmland aggregation and generate better economies of scale. The state authorizes FBs not only to lease farmland from owners and sublet it to farmers who are considered as technically and economically capable for productive farming but also to accommodate farmland users in tenancy without landowners' consent so as to have a better chance of bringing new actors and resources.

This paper explores how and why farmland banking has emerged as a key agricultural land policy in the context of a post-growth economy. The contemporary agricultural policy in Japan began with the post-WWII land reform (1947-1951), which dismantled the landlordism and led to the national legislation of the Agricultural Land Act in 1952 whereby farmland transactions were strictly regulated to protect small owner-farmers. The launch of farmland banking goes in the utter opposite direction from the land reform in that FBs promote tenancy to create large farms. Farmland banking has been a centerpiece in a series of agrarian policy reforms since the late 2000s (Hiramatsu and Enomoto 2014). These reforms are mostly examined with a focus on either political economy factors (e.g., agricultural internationalization, electoral power balances, political regime shifts) or socio-demographic factors (e.g.,shrinking rural societies, mechanization, cultural transitions) (Mulgan 2005; Iiguni et al. 2018). Few studies, however, examine how these different drivers are interrelated to give rise to the reforms. Taking narrative approach to the analysis of multiple drivers of change in agricultural policy, the paper seeks to explain the postwar institutional transformation in governing farmland. The study draws on descriptive results from interviews with farmers, government officials and experts, textual findings from archival studies and descriptive statistics along with literature review.

The paper illustrates that farmers have actively contributed to a change in governance model from the centralized control of individual property to the decentralized, multi-level coordination for collective tenancy arrangements, which progressed in tandem with the interlocking institutional transitions of farming families and villages. It shows that farmers' disengagement from farming increased with declining life security function of farmland and allowed for political and conceptual shifts of farmland

from owner-oriented to user-driven and from family property to the commons. It finds that the current outcome of governing process still politically and legally sanctifies farmers as ownership right holders to make an autonomous decision on land use with a limited degree of penalty for abandonment, but incentivizes community- or corporate-based farming with relatively generous subsidies for farmland liquidation whereby new farmers even from outside are encouraged to be brought in. This paper contributes to unpacking the compounding changes in the bundles of rights to land, elucidating the negotiating processes where different right and stake holders interact across different governance levels.

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Key Words: Multi-level governance, Land use, Ownership, Policy reform, Farmland

PLANNING TO MITIGATE, OR TO *EXACERBATE*, FLOODING HAZARDS? SPATIALLY EVALUATING A HOUSTON, TEXAS, NETWORK OF PLANS IN PLACE DURING HURRICANE HARVEY USING A PLAN INTEGRATION FOR RESILIENCE SCORECARD
Abstract ID: 1313
Individual Paper Submission

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In late August 2017, Hurricane Harvey stalled over southeastern Texas and inundated the city of Houston with record-breaking rainfall—though flooding has been a persistent and growing issue in the area. Rapid development in hazardous and greenfield locations has replaced many natural ecosystems with impervious surfaces, nullifying their ability to attenuate stormwater, and excessive rainfall frequently overwhelms drainage systems. Land use planning is a critical factor in this equation, and can either mitigate or exacerbate flood risk. Planning for growth in a coordinated, proactive way has been shown to reduce the impact of natural hazards. Unfortunately, planning efforts are increasingly fragmented in many U.S. communities, leading to weak coordination between the various plans that guide development and land use.

In this study, we spatially evaluate a network of 18 plans guiding development and management in a section of western Houston that, despite its relative affluence, suffered extensive damage during Hurricane Harvey. Located immediately downstream from the Addicks and Barker Reservoirs, the area was flooded not only by the unprecedented rainfall accumulation, but also as a result of controlled releases from the reservoirs to prevent catastrophic dam failure. Flooding has become a greater threat in this part of Houston as urban development has continued to intensify, placing more people and property in risky locations. It is therefore crucial that the plans guiding such development are coordinated, and that hazard-awareness is integrated throughout.

Following the Plan Integration for Resilience Scorecard (PIRS) method, the western Houston study area is first subdivided into neighborhood districts and hazard zones. Plans are then perused to identify policies likely to affect vulnerability to flooding. Relevant policies are assigned to appropriate district-hazard zones and scored according to their likely effects on flood vulnerability. The resulting scorecard helps address the following questions:

(1) How integrated is the network of plans with respect to its influence on flood vulnerability, and how do plan policies affect different parts of the study area?

(2) How does the network of plans affect vulnerability in the Special Flood Hazard Area (SFHA, also known as the 100-year floodplain), the 500-year floodplain, and the parts of the study area that experienced flooding during Hurricane Harvey?

(3) What are the implications for long-term flood mitigation in Houston, in light of climate change and increased frequency of extreme flood events?

Findings indicate that, despite positive overall scores and many instances of sound planning, policies in some plans were guiding the area toward increased flood-vulnerability—especially in areas outside the SFHA but still at some risk for flooding. In the drive to accommodate and encourage new development, a number of plans and policies paid insufficient attention to actual flood risk. The problem may have been amplified the false sense of security provided by ostensibly strong flood control measures, including the massive Addicks and Barker Dams. Intensifying development in such areas is a classic example of the Burby's "safe development paradox", and appears to have had the effect of making the area even more vulnerable to cascading effects from a massive and sustained precipitation event like Hurricane Harvey.

The empirical evidence provided by this type of evaluation can help decision-makers identify policy gaps and conflicts, focus attention and resources, and strengthen hazard mitigation through better-integrated plan guidance. Given the critical role of land use planning in flood-hazard mitigation (or exacerbation), a more unified and resilient policy direction across the network of plans will not only help an area prepare for the inevitable next flood event, but may also make it more attractive to development, in the long run.

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Key Words: Land use planning, Hazard mitigation, Hurricane Harvey, Network of plans

ZOMBIE CODE: CONSTRUCTION IN EAST ALEPPO, COMPUTER VISION, AND INSTITUTIONAL SURVIVAL, 2012-2016

Abstract ID: 1326
Individual Paper Submission

BAIRD-ZARS, Bernadette [Columbia University + Alarife Urban Associates] bvb2108@columbia.edu, presenting author

Like many urban areas in countries with active wars, Aleppo's built footprint continued to expand even during the period of most intense physical violence. Starting with a combination of aerial photo analysis with emergent techniques in computer vision, this article details where and how building occurred in Aleppo during the period of most intense conflict, 2012-2016. From interviews with planning professionals and residents of Aleppo and media accounts, the paper then connects the material expansion with an initial tracing of the informal, formal, and 'gray' institutions shaping growth, building on the methodological concepts of 'forensics' (Weizman 2017) and 'backwards methodologies' (Molotch and Ponzini 2018) to understand governance in practice from materiality.

Initial findings suggest that many of the daily practices and the segments of law and plans, such as building height restrictions, that had long been encouraged by planners and the state continued across radical shifts in governance. Although much of Aleppo's recent experience is clearly a 'black swan', even among urban conflicts, the paper responds to the broader discussion of how and where the planning institutions, and in particular zoning and construction controls, flex and change (Sorensen 2014), specifically under extreme conditions and uncertainty. The findings also speak to understandings of planning and permitting practice in the region (Fawaz 2017) and planning as understood through the lens of conflict (Bou Akar 2018).

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Key Words: institutions, building code, zoning, war, governance

SPATIAL ACCOUNTING: DECOMPOSING URBAN SPATIAL CHANGES IN THE UNITED STATES.

Abstract ID: 1342
Individual Paper Submission

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Urban spatial changes affect climate processes at all geographical levels and influence cities' vulnerability to the effects of climate change. There is a pressing need to understand how and why cities grow in different patterns, as the world become increasingly warmer and urban. In this study, we map and explain the urban spatial dynamics in the US over the last two decades. First, we map land cover changes using National Land Cover Databased and Google Earth Engine, a planetary platform for geospatial computing.

Then, we decompose the urban land cover changes of metropolitan areas in the United States into infill, extension, and leaf frog, reflecting the relocation of land resources in response to regulation, market, geography, and technology. Using selected pattern metrics from our mapping results, we run regressions to investigate how population growth, productivity, urban amenity, and transportation technology affect urban infill and fragmentation development in the US. Results show that spatial development is uneven by different sizes of metropolitan areas. Moreover, a strong urban core plays a significant role in attracting urban infill development, while higher level of traffic congestion leads to more urban extension but less leapfrog and infill development. Finally, we discussion implications of this research for spatial planning and consider how policy and technologies can respond to climate change and ensure an equitable and resilient transition to the future.

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Key Words: land use change, urbanization, climate change, decomposition methods, google earth engine

NEXT EVOLUTION OF COMPREHENSIVE PLANS – MOVE TO POLICY CONVERGENCE
Abstract ID: 1392
Individual Paper Submission

GROVER, Himanshu [University of Washington Seattle] groverh@uw.edu, presenting author

Comprehensive plans for American communities have evolved since their rise to prominence in the late nineteenth century as a development management tool for local communities to create and realize the desired community character. Early plans, beginning with the city beautiful movement were developed to assist communities in creation of a livable, enjoyable, and ordered beautiful urban environments (Mandelker, 1975). Increasing urbanization accompanied with associated concerns for numerous urban challenges such environmental protection, growth management, affordable housing, and disaster risk reduction have resulted in evolution of comprehensive plans into contemporary multi-faceted plans focused on addressing multiple development issues through spatial land use planning and development regulations (Berke & Godschalk, 2009). At the same time, the complexities associated with urbanization issues have also resulted in an increasing number of multiple local plans that focus on specific challenges such as affordable housing, climate change action, and hazard mitigation. Seemingly, this fragmented approach results in policy inaction and often increased local conflicts among diverse interest groups (Godschalk et al 1998; Berke & Conroy 2000; Cucuzza et al 2019).

This research paper contends that it is time for comprehensive plans to undertake the next evolutionary step. Local Comprehensive plans should become the focal plans for policy to guide growth and development of American communities. The contemporary comprehensive planning process is ideal for facilitating convergence of multiple policy goals such as environmental protection, promotion of equity, lowering greenhouse gas emissions, and disaster risk reduction. Land use management and development policies can utilize diverse data sets, and advanced analytical strategies to produce the planning information necessary to develop integrated policies to achieve these multiple goals. Community engagement process, usually mandated in comprehensive plan making, can thus transform into an ongoing stakeholder forum for development and evaluation of multiple policy goals as well as

prioritization of development objectives.

It is envisaged that this new generation of plans will truly enhance community resilience and will result in efficient utilization of local resources. This paper proposes a convergence framework for creating this next generation of Comprehensive Plans. This convergence approach integrates planning efforts at three levels – conceptual, methodological, and procedural. Convergence framework brings together knowledge, theories, data, methods, and policies from multiple local plans to assist in policy development that promotes development patterns that are responsive to contemporary complex challenges faced by American communities.

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Key Words: Comprehensive Plans, Policy Convergence, Hazard Mitigation, Community Resilience, Climate Change Response

TRACK 8 – POSTER ABSTRACTS

THE CORRELATION OF ZONING AND RACE IN MULTIPLE AMERICAN CITIES: 1940-PRESENT
Abstract ID: 569
Poster

QUATTRO, Christine [University of Pennsylvania] cmquat@upenn.edu, presenting author

This research seeks to investigate the historical relationship between zoning and demographic distributions, including race and class. Zoning has been a factor in race and class segregation for major American cities throughout the 20th century (Whittemore 2017). Its history and origins are embedded in the separation of the races and social classes, as evidence by the adoption of early racial zoning ordinances following the first Planning Conferences. With Buchanan v Warley (1917), the Supreme Court determined racial zoning ordinances were illegal, but municipalities found other means of separating social groups using zoning codes, such as lot sizes or allocations of multifamily housing (Hirt 2014).

The separation of uses by intensity into tiered zoning categories has been termed Euclidean zoning after the Supreme Court case Euclid v Ambler (1926) which verified the constitutionality of zoning in the United States. This poster will show two municipal case studies using Euclidean zoning analyzed empirically with GIS to investigate these cities' zoning maps and their relationship to both demographics and environmental impacts spatially over time from 1940-Present. Relevant excerpts from the zoning codes will also be presented to supplement the maps. The two cities were chosen due to their similarity in current population size and diversity, age of adopted regulations, and to represent variety in American city heritage (Spanish and British colonial cities) and regions. The two case studies are representative of a

larger dataset currently under research.

The data was collected using open source municipal data, including zoning maps and political boundaries over time. The National Historic Geographic Information Systems' census data was used for demographic breakdowns. Additional maps were collected from various supplemental sources and in search of further explanation for the spatial relationships found, including FHA and Urban Heat Island maps.

The mapping of these components spatially demonstrates a disproportionate allocation of high intensity uses and the externalities produced by them adjacent to areas of both minority populations and multi-family housing across decades. High intensity uses also correlate to higher environmental impacts and externalities.

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Key Words: Zoning, Race, Planning History, Environmental Justice

ZONING FOR THE ACQUISITION CULTURE: HOW TO ACCOMMODATE SELF-STORAGE FACILITIES IN TRANSIT-ORIENTED DEVELOPMENTS
Abstract ID: 1298
Poster

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Sustainable land uses continue to be a challenge in the United States as communities continue to sprawl and impact ecologically important land. Among policies to encourage denser development and the utilization of public transit, is the use of Transit Orientated Developments (TODs). These developments focus on combining dense uses with a major transit center, typically in a buffer of ¼ to ½ mile, roughly equal to a "10-minute walk" (Qviström, et al). The main purpose of the TOD is to provide housing options that are linked to transit. Safety, health, traffic relief, and walkability are some of the other major goals of this type of development (Ibraeva, et al).

However, one disadvantage of TODs is the lack of storage in small homes. This is especially so in a society that accumulates material possessions, including heirlooms and memorabilia.

Our research responds to the need for storage in and around TODs. Our examination of the literature on TODs reveals that zoning codes do not permit storage units. Our question centers on what kind of zoning can be employed such that TODs can accommodate storage facilities. We proceed from the assumption that for TODs to be successful, they should find ways to accommodate storage (Goldberg, et al).

We examined the literature to determine the best zoning options available for storage facilities. We selected an area in Detroit, for which planning officials are laying the groundwork for a TOD, to examine

how different forms of zoning could be applied, including floating zones, an overlay district, special use permits, and planned unit developments that can accommodate storage facilities. We present many schematics of possible zoning responses, and we recommend the zoning designation that we believe will work best. We provide justifications for our choice, which are related to distances, existing streetscapes, the location of other amenities in the neighborhood, and the location of the transit facilities. We present the possible and final zoning choice using many graphics, making this an ideal project for a poster presentation.

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Key Words: Transit oriented development, Zoning

TRACK 9 – FOOD SYSTEMS, COMMUNITY HEALTH & SAFETY

TRACK 9 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS FOR THE SESSIONS

PLANNING FOR CHILD HEALTH: POTENTIAL AND POSSIBILITIES
Pre-Organized Session 2 - Summary
Session Includes 21, 22, 24, 857

REECE, Jason [The Ohio State University] reece.35@osu.edu, organizer

The built and social environment are profoundly important to child development and health. Community safety, educational opportunities, recreational space, social capital and healthy housing are just a few domains which have a deep influence on a child's health, socio-emotional development and well being. The disparity in community conditions for children also present a reflection of the racial and social inequities in our society. Planning deeply influences the built and social environment while supporting social capital formation. The field has the potential to be transformative in creating healthy physical and social environments and providing access to opportunity for kids. Despite this potential, planning practice rarely focused explicitly on the needs of children. This panel will explore planning for healthy children in the context of rural and metropolitan areas. Panels will explore topics such as the relationship and conflicts between revitalization efforts and child health, the intersection of planning for child friendly and age friendly communities and models of engagement for children's health in rural and urban areas.

Objectives:

- Present a multi-disciplinary view of the potential impact of planning on the health and well being of children.
- Introduce the benefits of youth centered planning and engagement practices as a lens to foster healthier communities for all.
- Present case examples of model planning practices for supporting child health.

CHILD-FRIENDLY COMMUNITIES - LINKING PLANNING, SERVICES AND HEALTH
Abstract ID: 21
Abstract within Pre-Organized Session 2

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Planning has traditionally focused on the needs of workers. Children are often ignored. Recently, more attention is being given to children's needs (Warner and Rukus 2013, Warner and Zhang 2019), but which communities are engaging in more child friendly planning? While UNICEF (2018) points to the physical design needs for child friendly cities, the social layer is also important to ensure adequate services and opportunities for engagement (Zhang, Warner and Wethington 2020). Most research and "best practice" recommendations are urban biased, but child friendly planning needs to also consider the challenges in suburban and rural communities. This makes addressing the challenge of planning for children more nuanced. Recreation, community safety, neighborhood environment, community services and

opportunities for engagement are just a few domains which have a deep influence on a child's health, socio-emotional development and wellbeing.

This paper will present national survey data from the 2019 Planning for All Generations survey on how communities plan for families with young children. The survey covers all cities and counties and explores features of the built environment, such as mixed use, walkability, access to playgrounds and neighborhood schools. The survey also explores whether the community considers the needs of families with young children in their comprehensive plans and if the community has a range of zoning codes that encourage pedestrian friendly design guidelines, promote affordable housing, allow childcare and promote parks and recreation facilities in all neighborhoods. Service delivery includes preschool, after school and recreation programs, as well as nutrition and health services. Cross agency partnerships are explored along with joint use agreements with schools. Local attitudes regarding acceptance of diversity and recognition of the needs of families with children and the role of planning are included. Statistical analysis explores the interaction between metro status, planning and service delivery, and will highlight differences across metropolitan status and implications for public health.

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Key Words: Children, Planning, Health, Services, Built Environment

MODELS OF PARTICIPATORY ENGAGEMENT FOR MATERNAL AND CHILD HEALTH IN RURAL AREAS: PHOTOVOICE AND STORY MAPPING
Abstract ID: 22
Abstract within Pre-Organized Session 2

WHITTAKER, Jennifer [University of Pennsylvania] whjenn@design.upenn.edu, presenting author

Planning Issue: There is a growing geographic gap in maternal and child health (MCH) outcomes across the U.S. Despite medical advances, rural communities have not achieved MCH parity with their urban and suburban counterparts. Rural counties experience higher infant, neonatal, and post-neonatal mortality rates. Children in rural communities also experiences higher rates of Adverse Childhood Experiences (ACEs). These disturbances in a child's life related to abuse, neglect, trauma, or household dysfunction biologically embed in the body's organs and cause greater risk of chronic health conditions and lower life expectancy in adulthood. The medical community has made limited progress in improving rural MCH outcomes partially because health outcomes are related to larger fundamental causes, like inequality, poverty, and maldistribution of resources.

Planners can alter some fundamental causes of poor MCH and have demonstrated success in planning for health in cities. However, they have rarely acted on improving fundamental causes of poor health in rural communities. When planners engage in health planning in rural places, they use urban-generated evidence that does not suit the rural condition or experience. To improve the fundamental causes of poor MCH in rural areas, planners require a greater understanding of the rural-specific role of place and power in impacting health.

Approach: Quantitative methods will continue to inadequately reflect the fundamental causes, or inequities, within a place or community critical to how families make decisions within resource-poor environments. As such, we employ two community-based participatory methods, photovoice and story mapping, to document fundamental causes of poor MCH outcomes in rural communities. This research documents a partnership with the Children's Hospital of Philadelphia and the Pennsylvania Office of Child Development and Early Learning to understand how low-resource mothers living in rural Pennsylvania communities perceive the role of place, environment, and community in shaping their, and their children's, health and well-being.

These methodological choices were selected because they replace text with image-based and spatial data, and they empower the community over the researcher. Photovoice is a subject-empowering method where participants take photos that reveal their perspectives and narrative the meaning through critical group dialogue about local conditions and the need for change. The method directs attention to areas of everyday life overlooked by policymakers. Story mapping involves the co-creation of maps and mobile narratives that communicate complex local knowledge related to place, landscape, and health. This mobile method takes research out of a fixed environment and into a place where participants may feel more comfortable. It incorporates GPS tracking to build a spatial narrative shared through interactive computer-based maps that links photos, videos, and text onto an online story map.

Findings: This presentation will explore the challenges and opportunities of using image-based participatory quasi-ethnographic methods in planning research.

Implications: Women and children living in rural communities experience ongoing health challenges. Their experiences are largely excluded in discussions of what should be done to improve health in rural communities. Rural low-income women have place-specific knowledge about what change is needed to improve health and well-being but are often politically and socially isolated from having a platform to engage in policy discussions on the matter. Place-based policies about families are more effective when women's voices are recognized in policymaking. This research centers the experience of low-income mothers as central to the role of uncovering ways that local governments and planning agendas should change to improve MCH in rural settings.

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Key Words: Maternal and child health, rural planning, participatory research methods, planning for health

WHY DON'T WE PLAN FOR URBAN CHILDREN? A TALE OF TAX ABATEMENTS, SCHOOL CLOSURES AND CHILD FLIGHT IN URBAN AMERICA
Abstract ID: 24
Abstract within Pre-Organized Session 2

REECE, Jason [The Ohio State University] reece.35@osu.edu, presenting author

Urban revitalization efforts in the neoliberal era have emphasized public private partnership and strategies to attract the creative class. Limited attention has been devoted to the impacts of these efforts on urban youth or urban educational infrastructure. Planning practice often neglects the needs of children in the

context of urban redevelopment. This neglect accelerates the child flight out of urban neighborhoods for those with resources and traps those without resources in communities with underfunded educational systems.

School quality is a primary factor in location decisions for families and a major contributor to urban sprawl. Inequities in school infrastructure and resources create dramatically different learning environments. These disparities in resources corelate with economic and racial segregation in urban areas. Planning's "blind spot" in relation to urban education further destabilizes neighborhoods and creates unsustainable patterns of urban growth.

Planning efforts to lure higher income households and stimulate urban redevelopment have relied heavily on forms of tax abatement. Abatements may stimulate urban redevelopment but also degrade the tax base for public institutions, particularly public schools which rely heavily on property taxes. Tax abatements shift the tax burden away from new (often higher income) households and significantly diminish resources for urban education. The conflict between development policy and urban education is now a point of contention for educators in union disputes, with teacher union's objecting to redevelopment projects which further reduce the tax base for education (most recently in Chicago).

Reduced funding for schools' results in further degradation of physical infrastructure and creates resource shortages for students with high needs. Districts with high rates of student poverty require additional support resources but are often deprived of the services offered to high income suburban schools with less need. Resources for libraries, physical education, intervention specialists, trauma informed practice and lower student teacher ratios are all undermined by tax abatements. Both factors directly impact student health and wellbeing.

The proposed paper explores the discourse, conflict and impact of urban revitalization efforts on urban education and child flight. The case study focused on Ohio's large urban areas as case examples. Ohio's largest urban school districts lose more than $125 million in tax revenues annually due to tax abatements. The state has been a national leader in embracing both charter schools and voucher programs, which place more strain on public education. Inequities in school funding have led to four state supreme court cases which found the state's school funding system unconstitutional.

The case analysis is informed by a mixed methods approach involving analysis of secondary data and interviews with a diverse set of stakeholders. Secondary data analysis includes analysis of child demographic trends and tax abatement activity. Interview will be conducted with families, political leaders, planners and educators. The case analysis seeks to further document the relationship between redevelopment policies and child health, to understand how the conflict is being framed in discourse and to identify potential solutions to resolve this conflict. Although the case analysis is based in Ohio, insights will be generated to better understand the dimensions of this conflict in similar urban areas throughout the U.S.

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Key Words: Children, Health, Education, Redevelopment, Neoliberalism

BEST PRACTICES FROM ADULT LEADERS FOR YOUTH ADVOCACY PROGRAMS.
Abstract ID: 857
Abstract within Pre-Organized Session 2

OCONNEL, Laura Katie [Georgia Institute of Technology] l.katieoconnell@gatech.edu, presenting author
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Disparities in youth obesity continue despite an increasing number of programs designed to combat this challenge. Policy, systems, and environmental (PSE) changes hold promise for these populations. This study identifies lessons from adult leaders for youth advocacy programs. Youth Engagement & Action for Health (YEAH!) is a youth advocacy for PSE change curriculum that promotes health. From 2017-2019, 18 youth-serving organizations recruited 11-14 year olds from low-income urban, suburban, and rural areas. 237 participants completed YEAH! with 28 adult facilitators. YEAH! adult leaders completed pre- and post-surveys on their characteristics, group structure and dynamics, barriers to success, and technical assistance needs. Study leaders interviewed adult leaders and decision makers at the completion of each YEAH! project. Codes identified from analysis of this data were reviewed by YEAH! adult leaders. Clubs evaluated with positive outcomes were facilitated by adult leaders who had previous engagement with the youth, possessed a core set of characteristics, had access to resources to motivate group cohesion, participation, and commitment.

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Key Words: Youth advocacy, Community engagement, Health

PLANNING FOR MATERNAL HEALTH: SOCIAL DETERMINANTS, RACIAL EQUITY, AND HEALTHY CITIES
Pre-Organized Session 83 - Summary
Session Includes 362, 363, 366

GRAHAM, Leigh [Ariadne Labs] lgraham@ariadnelabs.org, organizer

Urban planning and public health have reconnected in recent decades with shared goals in fostering healthy cities and communities. Yet these fields share a curious blind spot: the health and well-being of mothers. The vast majority of public maternal and child health spending focuses on the child. Comparative JPER searches reveal 489 returns for "aging," 344 for "children," and 71 for "mothers." This is a scholarly and practical oversight: ~80% of U.S. women in their thirties are raising children and women still disproportionately bear domestic burdens. Designing for aging-in-place, child-friendly communities and gender equitable spaces by necessity demands a consideration of the needs and habits of mothers. We are also at a crisis point. The US is the only high-income country where maternal mortality

is on the rise. Racial disparities in maternal mortality and morbidity are well documented. Planners must join an interdisciplinary effort to eliminate disparities in maternal health and build urban infrastructure needed for pregnant people and new mothers to raise families in healthy, equitable, inclusive communities.

Objectives:

- Panelists in this session will present research on racial disparities in maternal health and its relevance to planners.
- The panel will present recent research on housing interventions to support pregnant people and low-income mothers.
- Panelists will share findings from a pilot study examining the variety and complexity of transportation barriers to prenatal care.

NEIGHBORHOODS, SOCIAL SUPPORT, AND RACIAL DISPARITIES IN MATERNAL HEALTH
Abstract ID: 362
Abstract within Pre-Organized Session 83

GRAHAM, Leigh [Ariadne Labs] lgraham@ariadnelabs.org, presenting author

The discipline of urban planning has a key role to play in reducing maternal mortality and morbidity (MMM) in the United States. The U.S. is the only high-income country in which maternal mortality is on the rise. African-American women and Native-American women are injured or die in childbirth at rates two to three times higher than non-Hispanic White women (Hoyert and Minino, 2020). For Black, native-born women, this racial disparity has persisted since the mid-20th century (Singh, 2010, CDC, n.d).

In the last decade the federal government has significantly invested in improved data surveillance of maternal mortality and morbidity, particularly through the establishment of review committees at the state level. In addition, healthcare settings have invested in safety bundles to improve patient outcomes, and the U.S. public health and healthcare systems are grappling with the role of racism and sexism in women's lived experiences of disrespect and abuse in childbirth and post-partum care (Miller et al., 2016, Vedam et al., 2019).

But there is much more to be done, especially in local communities where pregnant people and new mothers live and work.Two-thirds of maternal deaths occur outside the hospital setting, in the community. This is where urban planning, with its expertise in healthy cities and community engagement, can play a critical role. This paper presents the findings of an interdisciplinary scoping review on maternal health in the U.S., specifically to answer the question, what is the role of urban planning and policy to reduce maternal mortality and morbidity risks in local jurisdictions? Preliminary findings indicate two broad areas of intervention: social supports for pregnant people and new mothers, and neighborhood conditions that contribute to adverse birth outcomes and stress. In addition, key informant interviews drawn from a product development process to improve urban maternal health suggest that improving capacity and coordination to respond is imperative. This research will suggest specific interventions for urban policy and planning practice to improve maternal health in the U.S., as well as suggest avenues for additional research within the field.

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Key Words: maternal health, public health, healthy cities, community engagement, professional practice

TRANSPORTATION TO ULTRASOUND APPOINTMENTS
Abstract ID: 363
Abstract within Pre-Organized Session 83

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Research Problem: Disparities in prenatal care (PNC) utilization persist and the reasons why women do not obtain PNC even when it is available are complex.[1] Lack of transportation is often cited as a barrier to PNC,[2,3] yet there is not much level of detail known about the kinds of transportation challenges experienced. This research uncovers a more nuanced understanding of the variety and complexity of transportation barriers experienced by women seeking an ultrasound appointment, which is one component of PNC.

Purpose: The aims of this study are to gain pilot data on 1) Whether and what kind of transportation issues present a barrier to ultrasound appointments and 2) How transport barriers vary by origin and insurance status.

Methods: Intercept surveys of women over the age of 18 attending the UNC Hospitals Obstetrics Ultrasound Clinic. Responses are analyzed qualitatively (e.g., types of transport barriers reported, common mode to appointment) and quantitatively (e.g., travel time to clinic, number of barriers reported, spatial patterns by ZIP code).

Findings: Preliminary findings show differences in the number and type of barrier reported across insurance status. Data collection is still underway.

Relevance: This research adds qualitative nuance to our current broader understanding of transportation barriers, and provides a better understanding of how this spectrum of barriers may vary spatially and by insurance status--with important implications for interventions targeting maternal health disparities within planning and public health. We also translate lessons learned about survey methods and response rate for this pilot study with implications for future transportation to care studies.

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Key Words: transportation barriers, access to health care, maternal health, surveys, prenatal care

GENDER MAINSTREAMING, INTERSECTIONALITY AND PLANNING FOR BLACK MATERNAL HEALTH

Abstract ID: 366
Abstract within Pre-Organized Session 83

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Maternal and child health outcomes are important indicators for the overall health of a community. However, stark racial disparities exist in maternal and infant outcomes in the Black community. The factors influencing Black maternal and child health are complex and multifaceted. The social determinants of health include factors outside of the health care system such as neighborhood dynamics, exposure to racism, housing, food access, and transportation and impact health through various pathways.

Integrating city and regional planning theory with public health theory has the potential to address and mitigate sociopolitical structures resulting in negative health outcomes in the Black community. This paper explores the utilization of planning, public health, and feminist theory to improve maternal and child health outcomes in the Black community. Specifically, we suggest that an integration of planning and public health theories with an acute attention given to gender and intersectionality will provide a holistic approach to address the disparities in the Black community.

The proposed paper has two objectives, first to present a conceptual model integrating trauma informed community building or community development, black feminist theory, gender mainstreaming and intersectionality to inform strategies to support Black maternal and child health. Trauma-informed planning demands a shift of viewing trauma as a medical ailment to a public health issue. Communal trauma is particularly relevant among Black women. Enduring generations of racism and sexism, Black women share communal trauma. Bowen and Murshid outline six core principles of trauma-informed social policy: safety, trustworthiness and transparency, collaboration, empowerment, choice, and intersectionality.

Intersectionality typically considers identifiers including race, gender, and socioeconomic status. Collin's definition of intersectionality does not include considerations of place. However, geography is an important factor that influences lived experience for Black women. A model of expanded intersectionality to address the unique positionality of Black women would therefore consider race, place, and gender as critical axes of identity. It is important to note that these identifiers are socially constructed and are therefore fluid and relative. By interjecting intersectionality into planning theory and practice related to improving Black maternal and child health outcomes, researchers have the potential of better understanding the connection and impact of socially constructed identifiers to biological outcomes.

The second objective is to utilize this conceptual framework to analyze three case interventions, Ohio Senate Bill 322 (implementation of infant mortality recommendations), the Ohio Equity Institute (a multi-city community organizing effort to support maternal health) and ROOTT (a non-profit community-based organization providing doula services and other community building supports). Planning strategies to address infant and maternal health are emergent and we anticipate the framework provided in this paper and case analysis can inform future efforts to directly engage maternal health as a focus of city planning.

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PLANNING FOR URBAN AGRICULTURE IN THE USA: FUTURE DIRECTIONS FOR A NEW ETHIC IN CITY BUILDING
Pre-Organized Session 176 - Summary
Session Includes 1128, 1129, 1130, 1132

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Urban agriculture (UA), which connects people to food through a diverse set of activities [8-10], is often, but not always, motivated by questions of equity and justice. Growing urban agrarianism is forcing planners to confront the role of local government planning and policy in UA. In the academy, scholarship is exploring the how and why of UA [2-7], while planning curricula is increasingly incorporating UA into coursework [11]. Despite the growing interest in planning for UA, the attention to ethics and equity remains missing, or at the very least, unclear. This pre-organized session, inspired by Jerome Kaufman's work [1], examines the degree to which questions of ethics are addressed in planning for urban agriculture. Kaufman's thinking and early work on planning ethics clearly drove his work on food – but he never explicitly wrote about this. The session, which is a preview to a forthcoming book, will feature five papers on the promise and pitfalls of planning for urban agriculture in the USA. Papers will address theory, (civic) practice, pedagogy, and municipal policy of planning for UA rooted in ethics and justice.

Objectives:

- To learn about innovations in urban agriculture by civic organizations
- To learn about how municipal planning and polices for urban agriculture address equity
- Understand how pedagogy of planning for urban agriculture can address issues of equity

THEORETICAL AND CONCEPTUAL FOUNDATIONS FOR A NEW ETHIC IN PLANNING FOR URBAN AGRICULTURE
Abstract ID: 1128
Abstract within Pre-Organized Session 176

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It's an article of historic interest that while Jerry Kaufman was a theorist at heart, and he worked to develop a definition and understanding of food system planning with a handful of other academics, the field in its first incarnation was lacking an explicitly theoretical perspective. It's perhaps understandable that they stayed in the realm of immediate practicality given the need to both educate and then enlist practitioners (and to a lesser degree other academics) in this new addition to the body of planning practice. Still, the limited attention to theory in a field that purports to engage in praxis--the discursive relationship of theory and practice in action--is worthy of addressing as food systems planning moves into a more mature state.

Herein, through a historical literature review, we explore past possibilities and draw out implied theoretical connections embedded in the first wave of food systems planning scholarship. We then also

outline current food systems thinking that is explicitly theoretical and challenges food systems scholarship to be more critical about how and where it is situated, and the implications of different types of action.The works discussed represent contributions to a new book on urban agriculture which is the backbone of this panel presentation.

Our aim in this review of past and present work is aspirational. Instead of dwelling on what might have been, we hope to inspire practitioners and scholars to consider what might yet be if food systems planning practice were more closely linked to theoretical advances and vice versa.

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Key Words: food systems, praxis, practice, theory

APPLIED ETHICS: CIVIC AGRICULTURE IN US CITIES
Abstract ID: 1129
Abstract within Pre-Organized Session 176

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In a growing number of cities, suburbs, and small towns, community groups and entrepreneurs are developing innovative approaches to producing food and in so doing they are fashioning various ways that consumers can relate to producers. Concrete activities connecting people to production characterize contemporary UA, and scholars are conceptualizing and describing these practices, using various methods and towards various ends (Jarosz, 2008; Raj, Raja, & Dukes, 2016; Van Veenhuizen, 2006). Much, if not all, of this work is motivated by questions of equity and justice.

This paper will document various approaches civic organizations are taking to UA, and describe and theorize the modalities of our understanding. The paper will explore how people are using various technologies and tools, e.g. social networking tools, mapping technologies, emergent land tenure arrangements, and embryonic business models in the practice of urban food production. The paper explores how the growth of urban food production varies by goals different people and organizations hold, and how questions of ethics, equity and justice folds into these goals.

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Key Words: Applied Ethics, Pragmatism, Food Systems, Urban Agriculture

URBAN AGRICULTURE AS A LOCUS FOR PLANNING PEDAGOGY
Abstract ID: 1130
Abstract within Pre-Organized Session 176

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Urban agriculture can offer a useful domain for students (and faculty) to interrogate questions of (in)equity and ethics. This paper explores urban agriculture as a locus for a pedagogy of equity. The first community food assessment completed in conjunction with a planning department was published in 1977 at the University of Tennessee, with the City of Knoxville (University of Tennessee-Knoxville Graduate School of Planning, 1977). It took almost another 20 years for the next two to be completed, at UCLA in 1993 (Ashman et al., 1993), and the University of Wisconsin in 1997, under Jerry Kaufman and Kami Pothukuchi's leadership (University of Wisconsin-Madison Department of Urban and Regional Planning, 1997). At the time, there were few/no urban planning classes on food systems, but such courses were just about to arrive on the academic scene. Janet Hammer's 2004 survey of community food systems and planning curricula demonstrated a high water mark at the time, and also in 2004, the American Institute of Certified Planners (AICP) awarded its national award for the best planning studio project to one focused on food systems (taught at the University at Buffalo). Since then teaching about and teaching with the food system as a topic for experiential learning has become a standard feature of planning programs across the US and Canada (Whittaker, Clark, SanGiovanni, & Raja, 2017). Yet, the degree to which coursework about urban agriculture and food systems wrestles with questions of equity and justice remains unclear. This paper highlights the pedagogy of urban agriculture and urban food systems in planning and design education with a special focus on issues of equity and justice. We include a 10-year post-hoc reflection on a national award winning practicum – *Food For Growth* – taught at the University at Buffalo that lay the foundation for a 15+ year old community-university partnership in Buffalo, NY.

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Key Words: Food systems education, Planning pedagogy, Studio education, Urban agriculture, Buffalo

ETHICS AND EQUITY IN MUNICIPAL PLANNING RESPONSE TO URBAN AGRICULTURE

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The growing community interest in UA has generated a response from local governments across the United States (Horst, Raj, & Brinkley, 2016). Municipal governments nationwide are adopting and enacting policies in response to UA (Raja et al.2018). The degree to which the implementation of these policies is grounded in ethics and equity remains unclear (Clark et al. 2017). This paper will explore the limits and possibilities of new governance mechanisms, planning processes, and policy implementation tools that are designed to support UA. We will especially explore the manner in which public policy responses wrestle with questions of equity and ethics in developing and implementing food plans and policies. Drawing on comprehensive national-scale survey of local government planners, the paper will include an overview chapter on the many ways in which city governments are addressing questions of equity and justice in planning for urban agriculture. Additionally, the paper will include qualitative case studies about cities that have been innovators in planning and policy for urban agriculture from across the United States.

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Key Words: urban agriculture, municipal policy, food equity, local government planning

TRACK 9 – ROUNDTABLES

PLANNING FOR HEALTHY AND EQUITABLE CITIES: INTERNATIONAL PERSPECTIVES
Abstract ID: 96
Roundtable

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OVIEDO, Daniel [University College London] daniel.oviedo@ucl.ac.uk, participant
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GUAN, ChengHe [New York University Shanghai] chenghe.guan@nyu.edu, participant

The Healthy Cities approach, originally proposed by the WHO in 1986, has shifted the attention of healthcare from disease treatment to capacity building aimed at preventing and managing chronic health conditions. Despite the long history of research on Healthy Cities, there are still many obstacles and challenges in prioritising health as a central focus of urban planning. Inherent tensions and trade-offs exist between planning for healthy communities and planning for equitable urban development as people who need the most in terms of health-promoting urban environments are often the ones living in areas lacking investments in healthy environments (Evans & Kantrowitz, 2002).

The first roundtable session on "Planning for Health" hosted by Dr. Chanam Lee was presented at the 2019 ACSP conference, which involved facilitated discussions around the three domains of protecting, developing, and restoring health through planning research, primarily in the North American context. This roundtable extends the scope of the previous roundtables to introduce international perspectives to the Healthy Cities research by bringing together early career researchers from Europe, North America, and Asia. Further, we intend to use this roundtable to discuss how the Healthy Cities research community can embed social equity as an important component in future research and practice.

For the first half of the roundtable session, the panellists and other invited members will present their research focused on emerging trends and social equity in relation to the Healthy Cities research. For the other half of the session, the moderators will facilitate open discussions on how best to promote international collaborations for the Healthy Cities research within ACSP and beyond (e.g. working groups, new conference track, journal special issues, funding, etc).

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Key Words: healthy cities, inequality, international, global south, public health

SETTING AN AGENDA FOR FOOD SYSTEMS PLANNING RESEARCH: KEY ISSUES, METHODOLOGIES, AND OPPORTUNITIES FOR THE NEXT 20 YEARS
Abstract ID: 477
Roundtable

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BRINKLEY, Catherine [University of California, Davis] ckbrinkley@ucdavis.edu, participant
RAMOS, Carol [University of Puerto Rico] carol.ramos1@upr.edu, moderator
KOTVAL-K, Zeenat [Michigan State University] kotvalze@msu.edu, participant
RAJA, Samina [University at Buffalo, The State University of New York] sraja@buffalo.edu, participant

Two decades ago, Pothukuchi and Kaufman called on planners to strengthen community food systems. Since then, scholarship in food systems planning has expanded and evolved to address a range of issues, including spatial disparities in diet-related chronic disease, persistent food insecurity, environmental impacts of food production and food waste, food sovereignty and social justice, equitable land access, and opportunities for local economic development. As research in food systems planning gains prominence, a formal assessment that reviews accomplishments to date, as well as strengths and gaps in the research is necessary to strategically move the field forward. The proposed roundtable seeks to address this need by sharing findings from a systematic scoping review of food systems planning research since 2000. Specifically, the scoping review charts a path between past and present food systems planning research; synthesizes theories and methodologies used in extant research; reflects on the degree to which research addresses critical issues, particularly with respect to equity and justice; and recommends directions for future inquiry.

In this roundtable, prominent food systems scholars on the panel with expertise in planning, public health, veterinary medicine, economic development, and natural resources, as well as roundtable participants will be invited to share their reactions to the scoping review. The following questions will be presented by the panel to guide the discussion and seek input on:

1. What are the key issues and debates in food systems planning research, and what is still missing?
2. How is the food systems planning field interfacing with other disciplines, such as public health, geography, etc.? Which relevant disciplines might be missing from existing research?
3. How are equity and justice being addressed in food systems planning research?
4. What are the prominent methods being utilized in food systems planning research?
5. How have data sources and analyses shifted over the course of food systems research to inform practice and policy?
6. What are the research gaps and opportunities to strengthen food systems planning research going forward?

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Key Words: food systems planning, food equity, research methods, policy

POST COVID-19: LESSONS FOR PLANNING FUTURE CITIES
Abstract ID: 795
Roundtable

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SOHYUN, Park [Seoul National University] sohyunp@snu.ac.kr, participant

JIAO, Junfeng [University of Texas at Austin] jjiao@austin.utexas.edu, participant
CORBURN, Jason [University of California Berkeley] jcorburn@berkeley.edu, participant
BLANCO, Hilda [University of Southern California] hblanco@usc.edu, participant
NDUBISI, Forster [Texas A&M University] fndubisi@arch.tamu.edu, participant

This roundtable aims to discuss lessons learnt from the globally spread Coronavirus epidemic regarding what city planning should do in the future. Since the 20th century, a number of large-scale epidemic outbreaks have raised global citizens' awareness of the prevention and control of infectious diseases (Patz et al 2004). Battling against health emergencies is a long-term challenge of adapting comprehensive city planning and governance to unexpected events, which forces us to work across the usual boundaries between government sectors, industries, and civil society (Giles-Corti et al 2016; Matthew and McDonald 2006). Meanwhile, big data and other new technology have been widely applied in healthy city planning in recent years. Accordingly, different from previous widespread health emergencies like SARS, COVID-19 involves a more complex network of countries due to factors like efficient transportation system and globalized city network. From the case of Wuhan, we can see the importance of community building, well-distributed healthcare infrastructure, goods delivery system, and big-data analysis in city governance (Chen et al 2020). Yet, it also reveals that we lack critical thinking on the preparedness for large-scale emergencies in city planning.It is important to consider how to support not only health promotion for non-communicable chronic diseases, but also emergency preparedness at different geographic scales (Boyce et al 2019).

The roundtable gathers scholars from the West and from Asia to enhance the understandings on how we can plan healthy cities for the future. The roundtable is supported by the International Association for China Planning (IACP).

The following questions will be addressed:

1) How to develop a long-term disease prevention and treatment mechanism for cities?

2) How can community planning support emergency preparedness before and during the period of epidemic outbreaks?

3) How can institutional innovation be fostered to ensure governance that supports health promotion at different geographic scales?

4) What was learned from everyday life in a population under quarantine to improve healthy city planning?

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Key Words: Community Health and Safety, Health Cities, Healthy Urban Planning, Big Data, Emergency Preparedness

PLANNING, IMPLEMENTATION, AND EVALUATION OF COLLECTIVE AND PLACE-BASED EFFORTS TO TRANSFORM FOOD SYSTEMS: REFLECTIONS FROM BUFFALO, NY
Abstract ID: 1199
Roundtable

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Efforts to transform food systems through community-led practice are underway across the United States. Many of these efforts, which often draw on collective and networked action by civic organizations, remain to be evaluated. Speakers at this round table reflect on the process and results of a new place-based program to transform the food system through a place-based cohort of civic and quasi-civic organizations in Buffalo, NY.

The city of Buffalo's food system presents both opportunities and challenges for its 258,989 residents (2012-2016 American Community Survey 5-Year Estimates). Physical access to good food in the Buffalo Metropolitan Area is limited; about 50% of households with limited vehicular access live further than a five-minute walk from grocery stores selling healthy foods . Multiple food assessments in the city suggest that Buffalo's black residents have worse physical and economic access to healthy foods compared to other racial/ethnic groups residing in the city (Raja et al. 2014). More recent data suggests that only 6.1% of white residents live in areas with limited supermarket access compared to 36.1% of black residents.

In recognition of the food-related challenges and opportunities in the city of Buffalo, in 2017 local and national philanthropic organizations developed and implemented a cohort-based and place-based program to promote food equity and food sovereignty in the greater Buffalo area. The goals of the program were to: foster ongoing collaboration within the food security network in the community; improve access to healthy foods (such as healthier options in neighborhood stores, establishing new healthy food retail or delivery options); create food-related job opportunities (such as culinary or other food-related instruction leading to job readiness or job placement); promote food entrepreneurship (such as business incubators or community kitchens); strengthen food skills (such as growing, preparing, and preserving healthy foods); and, establish food policy that supports above efforts or similar initiatives. Funders invested a significant amount of money through 13 civic and quasi-civic organizations to implement these goals in targeted opportunity areas of the city and region. The civic organizations selected for the program work in varied sectors of the food system including in food production, aggregation, retail, and food service. Some of the civic organizations are seasoned actors in the food system about whom a great deal has been written in the literature (Metcalf 2011; Raj et al 2016; Raja et al. 2014a) while others are newer to food systems work. The new program aimed to amplify the cohort's work, and to go beyond increasing people's physical access to good food to advancing equity and sovereignty in the food system. Now, two years later, Buffalo's experience sheds light on the successes and challenges of cohort-based food systems projects, as well as the challenges of evaluating a complex community-led initiative.

Although a great deal has been written about the community-led transformation, there is limited scholarship on the potential of collective and network action in transforming the food systems (Hoey et al 2017). Speakers at this roundtable will reflect on the potential and challenges of planning, implementing, and evaluating (PIE) efforts to transform food systems through cohort-based action. Speakers include researchers and community partners who will share their perspective about the likely success and challenges inherent in place-based and cohort-based programs.

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Key Words: food equity, cohort-based transformation, collective action, network analysis, food systems evaluation

TRACK 9 – INDIVIDUAL ABSTRACTS

ADDRESSING NEIGHBORHOOD CRIME RISK WITH EVIDENCE-BASED INTERVENTION -- A COLLABORATIVE APPROACH BETWEEN PUBLIC SECTOR AND NON-PROFIT ORGANIZATION
Abstract ID: 32
Individual Paper Submission

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An extensive body of literature supports the argument that crimes agglomerate in specific locations more than others because of the environmental characteristics (Caplan, Kennedy, & Miller, 2011; Hipp, 2017; Hipp and Kim, 2019). Among the practices of Crime Prevention Through Environmental Design (CPTED), researchers have been emphasizing the importance of crime risk assessment using locational attributes that are associated with the crime vulnerability(Caplan, Kennedy, & Miller, 2011; Caplan, Kennedy, & Barnum, 2019). Based on the crime-associated environmental factors, Risk Terrain Model identifies the target areas where the high crime risk exists. However, almost no study focuses on how to bridge the gap between the outcome of the Risk Terrain Model and effective policy-making in order to address the crime risks in the neighborhood settings.

This research aims to evaluate the Risk Terrain Model and its application in Evidence-Based Policing in metropolitan areas like the City of Dallas. The initial evaluation will be a comparative analysis of the identified risk vulnerability and incident simulation according to the Risk Terrain Model, and the actual crime pattern according to the Police Department. We will also examine the crime prevention interventions put forward by the joint effort of the public sector (the City of Dallas and the Dallas Police Department) and the non-profit organization (Child Poverty Action Lab). The research scope will be two Police Divisions of the Dallas Police Department: Southeast and Northwest. Four neighborhoods with the highest crime risks are identified with the Risk Terrain Model estimation, field study, and the examination of intervention-policy. For the Risk Terrain Model, the unit of analysis will be 225*225 square feet cells

within the identified divisions, during the time frame of 2018 to 2019. For the examination of intervention policy, the time frame will be a 90-day policy window (for daily crime incidents from the police department). Four types of crime will be examined in our study: robbery, theft, burglary, and aggressive assaults. We adopt a mixed-method approach by combining Risk Terrain Modeling and neighborhood participatory study methods (neighborhood meetings, interviews, and rapid-ethnography).

This research will shed light on the exploration of crime prevention policy by identifying the gaps and achievements in the collaborative interventions between the public sector and the non-profit organization. It also contributes to understandings the geography of crime and the knowledge of crime-in-place within the fine-grain neighborhood settings.

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Key Words: Crime Prevention Through Environmental Design (CPTED), Neighborhood Safety, Risk Terrain Model, Evidence-Based Policing

OUR HOME, OUR FOOD, OUR RESILIENCE: A CITIZEN SCIENCE AND PHOTOVOICE APPROACH TO FOOD ASSET MAPPING IN CANADA

Abstract ID: 67
Individual Paper Submission

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Growing urban populations and climate change are putting increased pressure on food supply to cities globally. A resilient food system- the systems and infrastructures needed for food production, processing, distribution, consumption and disposal (Pothukuchi and Kaufman, 2000) is required to ensure food security and the resiliency of cities in adapting to climate change. Working to address these concerns are scholars and practitioners in an emerging frontier called "food system planning" (Soma and Wakefield, 2011, Raja et al., 2008). In this field, food asset mapping (Baker, 2018) has been used to document available food infrastructures in cities. Food asset mapping conducted by planners, policymakers, or academics usually consist of a spreadsheet and a web map identifying the locations of supermarkets, restaurants, and food banks. However, food asset mapping has not included ecological and cultural assets important to food system resiliency. Further, what are considered "assets" may not reflect the lived experiences of marginalized communities. In contrast, this study applied a "citizen science" led food asset mapping involving participants (n=12) from Indigenous, racialized, and low-income communities in the City of Vancouver, British Columbia. It also combined interdisciplinary methodologies such as photovoice, a form of participatory action research using photography that helps surface the voices and experiences of the participants in the mapping process. In applying a citizen science approach, this study

seeks to integrate diverse perspectives to better inform policy and planning decisions and measure the efficacy of traditional food asset map vs. the novel food asset map.

The study aimed to answer the following research questions:1) how can a citizen science-led food asset mapping identify "hidden food infrastructures" such as spiritual, cultural, informal and ecological assets in the community? and 2) how can we innovate food asset mapping by integrating culturally relevant spatial tools such as photovoice to understand resident's (in)access to food? From a theoretical standpoint, the study applies practice theory, as it helps understand how and why a person might engage in particular food practices, or how food provisioning practices change over time through three factors: meaning, material, and competence (Shove and Pantzar, 2005). The meaning of food assets may differ depending on culture, economic background and gender, and accordingly, it is important to also recognize these differences. Findings from this study identified the importance of ecological knowledge both Indigenous and non-Indigenous in identifying natural food assets in urban centres, the importance of informal practices such as foraging, and the role of religious sites such as langars in improving food access for both Sikh and non-Sikh communities regardless of income, religion, and race. This study hopes to contribute to a new approach in food asset mapping, resulting in the identification and preservation of infrastructural (both formal and informal), cultural, ecological and spiritual food assets, and improved policies to ensure food system resiliency in British Columbia.

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Key Words: food system planning, food asset mapping, photovoice, food justice, food system resiliency

MEETING EVERYDAY NEEDS IN A DISASTER SCENARIO: RESOURCE MATCHING THROUGH LOCAL NETWORKS
Abstract ID: 87
Individual Paper Submission

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In this study, we approach community disaster preparedness planning from a resource-matching perspective by comparing community members' expectations regarding where they might turn for essential resources in a disaster scenario with what is likely to be available locally, taking into account the capacity of local social infrastructure. Situated in Washington State, we focus on a potential earthquake scenario such as a magnitude 9.0 Cascadia Subduction Zone event, which would cause significant disruption to conventional modes of resource access and likely cause communities to become dependent upon local resources. Drawing upon data gathered via community-level surveys and interviews with resource providers, we seek to understand the extent to which local resource networks are likely to meet community members' expectations regarding access to resources in a disaster scenario, with a specific focus on social networks and social infrastructure.

Walkable, mixed-use neighborhoods have been shown to encourage the development of social capital and place attachment during non-disaster times (Carpenter 2015). The qualities of the built environment also have influence on the degree to which people are involved in their communities, affecting their ability to build and strengthen social capital – an area that remains underexamined in built environment research (Leyden and Goldberg 2015). When hard infrastructure fails in disaster scenarios, "it's the softer, social infrastructure that determines our fate" (Klinenberg 2018, 15; see also Freitag et al. 2014). Community social infrastructure, comprising the physical and organizational structures that shape the ways in which people relate (Ibid), provides a framework within which individuals can interact to build social capital and strengthen community resilience. Immediately after Mexico City's 2017 earthquake, for example, people congregated in the city's parks and public spaces, which were adaptable and multifunctional. Those facilities also served to support social familiarity before the earthquake even happened, facilitating the construction of social ties that would later help people to deal with the consequences of the disaster (de Jong 2017).

This study specifically addresses the role of social networks and social infrastructure as potential substitutes for more brittle, failure-prone infrastructure in times of crisis. To explore this question, we draw from a community resilience sample survey administered in three characteristically different Washington State communities to understand what disaster preparedness skills and resources people have and which they are most concerned about being able to access in a disaster scenario. We also learn where participants think they would turn to access a range of essential everyday resources (water, medications, food, shelter, communication, first aid supplies, warmth, sanitation, power and transportation) in the event of a large-scale disaster. These results are compared to information gained through interviews with local service providers – the organizations, institutions, and agencies that support community social infrastructure – to understand their capacity and expectations for a disaster scenario. A gap analysis highlights areas for future study and potential implications for policy.

Understanding the importance of social infrastructure in a disaster scenario provides a more nuanced understanding of its role in everyday community life and its potential to connect people with a broader range of essential resources. By comparing the expectations of community members and resource providers, we can better understand where gaps might occur in a disaster scenario and help to improve communications between and among municipalities, resource providers and communities that could contribute to more targeted and efficient disaster preparedness planning. Understanding the role of social infrastructure in a disaster scenario could also help to reinforce broader planning efforts focused on supporting "whole communities" with access to a wider range of resources in response to planning concerns ranging from disaster mitigation to social equity to climate change.

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Key Words: community resilience, resource matching, disaster preparedness planning, social networks, social infrastructure

EMPIRICAL MEASURES OF FOOD EXPOSURE IN MEXICO CITY
Abstract ID: 118
Individual Paper Submission

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Obesity is a multifactorial and complex issue which many governments are trying to tackle. In recent years, the Mexican government has promoted solutions at an individual level, calling for better food choices, more physical activity, and providing social programs that alleviate hunger. However, focusing on behavioral effects is not enough to understand the mechanisms of what makes people healthy.

Using Mexico City as a case study, I take a more ecological approach, measuring people's food exposure with mobile phone data. Although unhealthy food dynamics has not been a problem exclusive to Mexico City, the influence of the US has been pervasive and direct through the infiltration of ultra-processed foods, food corporations, and the adoption of a developmentalist ideal of progress. Hence, my primary research questions are: what are the food exposures of Mexico City's denizens, what is the difference between measures of realized and potential food access, and how is this reflected on health inequities across the city?

Within public health and geography, many studies across the globe have tried to study the relationship between "food environments" and health outcomes; however, there has not been consensus on the results. This is primarily due to lack of data availability, ambiguous conceptualizations of "food environments", and confounding definitions of what constitutes a healthy or unhealthy environment. Moreover, most studies have focused on different community contexts, studying proximity to schools, work, or homes, making it difficult to have significant results across neighborhoods within cities.

Therefore, in this paper I study the demand for food using a GPS approach to track people's eating behaviors, taking into account their commuting activity spaces. Using a large-scale dataset of smartphone locations obtained from Cuebiq, business data from Mexico's economic census, and using remote-sensing techniques to identify street food, I conduct a detailed, space-time analysis of people's food exposures. This analysis allows researchers and policymakers to have a better understanding of different populations' eating behaviors and to distinguish between measures of potential access and realized access to food. Further, this model will provide public health practitioners with a better understanding of how food businesses affect neighborhood's social and health inequities across the city.

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Key Words: food exposure, spatial analysis, health inequities, mobile phone data, Mexico

WHAT DOES RESILIENCY LOOK LIKE IN A FOOD DESERT?
Abstract ID: 159

Individual Paper Submission

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The discussion of resiliency, whether we are discussing an ecosystem, focusing on the built environment or referencing a community, relies on the same premise; returning to the state experienced prior to the disaster or disruptive event. For example, Cutter et al. (2008) define the concept as the ability of a social system to respond and recover from disaster and to learn in response to that threat. Several years later, the National Academies (2012) define resilience as the ability to prepare, plan, absorb and recover from adverse events. In 2013, the Presidential Policy Directive 21 arrived at the definition of resilience as the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions.

Food resiliency embraces the same premise. It measures how quickly we can restore the food systems and recover access for those impacted by disaster (Tendall, et al. 2015). Ensuring stable food security before, during, and after disasters requires resilient food systems that can withstand and recover from disruptions. (Biehl, Buzogany & Baja, 2018). The premise: that access to food existed prior to the disaster. However, the question this paper poses the question: how does food resiliency look for those living in a food desert? Is resiliency the goal when the previous state was that of vulnerability?

A series of town halls, interviews and focus groups meetings were held in small cities within the nine counties surrounding Houston, Tx. The purpose of the meetings was to talk to those impacted not only by Hurricane Harvey but by other natural and manmade disasters that have affected the region in the past two years. Community residents who lived in food deserts, representing approximately 12% of the total 4.7 million in population, discussed life pre and post disasters; what recovery strategies have worked from the private and well as the public sector; what recovery efforts have yet to be tried. The most important outcome of the conversations was the realization that a larger community was aware of preexisting vulnerability, yet, the efforts to be "resilient" did not address food access, a basic necessity of life and the public's health.

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Key Words: food access, resiliency, disaster

FUELING URBAN INFORMALITY WITHIN FOOD SYSTEMS IN INDIA
Abstract ID: 203
Individual Paper Submission

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Research on food systems planning in developed countries is often focused on the consumers and their access to fresh produce. The food retail system in other parts of the world is often dominated by an informal network of operations that is not captured in mainstream academic discourse or research literature. This study's main question is: What fuels informality within the food systems network in a developing country? This study takes a holistic approach to assess not only access to foods for consumers, but also the perceptions and opinions of the vendors of fresh produce in a metropolis of a developing nation: Mumbai, India, where this traditional (informal) form of fresh produce retail makes up over 95% of the food retail sales in the country. Using a mixed methods approach, this study looks at the supply of and demand for fresh produce in the City and how these forces have shaped and sustained an informal network of food retail vendors that are a part of the culture and economic vibrancy in Mumbai. Results from this study indicate that the role of density, transportation systems, domestic/household structure, and a bureaucratic system rife with its own challenges have resulted in a distinct infrastructure of food retail networks that has harvested forms of inequalities and injustices that inherently fuel this informal economy. In a time where the country is going through regulatory change with regards to the economy and formal governance structure, the informal food network is also beginning to demand a change. The slow progress of the recently created Street Vendors Act at the national level, to help formalize and organize this economic sector, only aides in reinforcing and perpetuating the informality.

Implications for planning practice and scholarship point towards the necessity to address informality in a just and equitable manner. In developing nations, this is very hard to accomplish. However, understanding the culture, norms, and daily practices are essential to be able to suggest inclusive action and programs.

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Key Words: Urban informality, Food retail, Mumbai, India, Social space, Food vendors

MORE THAN FRYBREAD: ON DEVELOPING APPROACHES TO FOOD SYSTEMS PLANNING IN INDIAN COUNTRY
Abstract ID: 256
Individual Paper Submission

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Planning and its relationship among its many specializations and food systems has been explored with ample room for scholarly growth and application (Pothukuchi and Kaufman 2000). As fields interested in food systems have begun to develop nuances among concepts such as food security, food justice, and food sovereignty, so has the role of the planner in collaborating with stakeholders to improve the livelihood of communities to address their specific needs. These approaches include promoting community gardening, preserve agricultural land, and develop food system plans to address health disparities and chronic hunger, among others (Raja et al. 2008), illustrating the prominence of food systems planning as a planning domain in both urban and rural environments.

A third environment in which revitalizing food systems have been occurring are those within Tribal lands, oftentimes without formal planning activities. The intentional interference with indigenous food systems to both colonize and assimilate indigenous populations has had detrimental effects on dietary practices, cultural and ecological knowledge transference, and indigenous sovereignty, both historically and in

contemporary times (Whyte 2017). Despite this, different Native entities (Tribal Governments, NGOs, professional organizations, etc.) have collaborated to revitalize and retain knowledges relating to food. These efforts often have overlapping goals with food systems planning and show the direct link between the two.

While planning scholars has increasingly generated work to bring indigenous issues the forefront of planning scholarship (see Walker et al. 2013), the significance of food systems planning in a tribal context remains underdeveloped. As Sam Grey and Raj Patel have argued, "…food can be seen as the direct manifestation of the relationship between Indigenous Peoples and homelands, and it consequently occupies a central place in traditional thought", asserting that understanding food sovereignty must be interpreted through an indigenous worldview to promote indigenous food sovereignty (Grey and Patel 2015). As the field of planning contains within it sets of values intrinsic within its practice, not all planning approaches may be appropriate within an indigenous context. The same can be said for food systems planning. This lends the central question of this paper: How can food systems planning promote indigenous food sovereignty?

This paper aims to develop planning approaches to support indigenous food sovereignty on Tribal lands and understanding the limitations of food systems planning practice. Food system practices will include hunting, fishing, gathering, harvesting, and growing food, alongside the critical aspect of inter-relationality and responsibility. Drawing from Dawn Morrison and the Working Group on Indigenous Food Sovereignty's four principles as a guiding framework, the role of the sacredness, responsibility, self-determination, and policy reform become central to preparing planners to become more culturally cognizant of the intricacies regarding tribal planning more broadly, and food systems planning with indigenous communities specifically. Through greater education on the socio-cultural and legal dimensions involving indigenous peoples of the United States can planners help contribute to fostering an environment where the food goals of indigenous communities can be leveraged and supported.

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Key Words: Food systems, Tribal Planning, Indigenous food sovereignty

EXAMINING NON-LINEAR ASSOCIATIONS BETWEEN POPULATION DENSITY AND OBESITY: AN APPLICATION OF GRADIENT BOOSTING DECISION TREES
Abstract ID: 262
Individual Paper Submission

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Obesity, a major risk factor for type-2 diabetes and some cancers, has risen dramatically in the world. A cause of obesity is physical inactivity resulting from urban sprawl and auto-oriented development. However, the existing literature does not provide a clear answer to the simple but important question: what is the relationship between obesity and population density? On one hand, people living in dense areas tend to have a high level of physical activity (Giles-Corti et al., 2016), hence compact development and population densification have the potential to decrease obesity. On the other hand, several studies from China found that people living in denser neighborhoods could have a higher risk of obesity because of the number of limited spaces for physical activity (Sun et al., 2017). Moreover, many studies concluded that a compact built environment is not associated with the risk of obesity (Durand et al., 2011). The null effect may be because the positive effects of population density offset its negative effects.

By using the data from a 2014 national survey (China Labor-force Dynamics Survey), we scrutinize the relationship between waist-hip ratio and population density at both city and neighborhood levels in China, while accounting for the confounding effects of socio-demographics and other built environment attributes. We adopt waist-hip ratio as a proxy for obesity because body mass index fails to distinguish between fat and lean body mass and does not account for fat distribution. By contrast, waist-hip ratio is a more accurate indicator of visceral adiposity and obesity-related health risks.

We apply gradient boosting decision trees (GBDT) in this study. The approach was originally developed by Friedman (2001), and has many advantages compared with traditional multiple regression. First, it illustrates non-linear relationships between response and predictors by partial dependence plots. Second, it handles the multicollinearity issue, predictors with missing values, and does not require the response to follow any assumption. Because of these advantages, scholars applied this approach to explore the non-linear relationship between the built environment and travel behavior and offered nuanced implications for planning practice (Ding et al., 2018).

The results show that the built environment is more important to predict waist-hip ratio than socio-demographic variables. The most important predictors are the built area of cities among built environment elements and household income among socio-demographic variables. Most built environment variables have non-linear associations with waist-hip ratio and show clear threshold effects. In terms of population density, neighborhood population density shows a U-shaped linkage with waist-hip ratio. Specifically, within the range of 25 thousand persons per km^2, neighborhood population density is negatively related to waist-hip ratio. Beyond 170 thousand persons per km^2, it has a positive effect. Between 25 and 170 thousand persons per km^2, waist-hip ratio is relatively stable. Furthermore, within the range of 17 thousand persons per km^2, city population density has a negative relationship with waist-hip ratio. Beyond the threshold, it has no additional effect.

This study contributes threefold to the literature. First, it examines the non-linear influences of built environment elements and finds threshold effects. Second, it investigates the relationship between obesity and population density at both city and neighborhood levels, which is examined by only a few studies. The results inform both regional planning and local planning. Third, it accesses the relative importance of each built environment element in predicting obesity, offering evidence for the hierarchy of built environment improvements.

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Key Words: Built environment, Obesity, Machine learning, Threshold effect, China

YOUTH MENTAL HEALTH AND THE URBAN ENVIRONMENT: A REVIEW OF RELEVANT CONCEPTS, THEORIES, METHODS, AND CURRENT APPROACHES, AND A WAY FORWARD.

Abstract ID: 335
Individual Paper Submission

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Over recent decades the prevalence of mental illness among youth has continued to rise and has now reached critical levels (Collishaw, 2015), where pooled estimates suggest 13.4% of youth are affected by any mental disorder (Polanczyk et al., 2015). With projections suggesting that the global population will continue to migrate to urban areas in the coming decades, urban environments (United Nations, 2018), specifically, the human-made features of the external lived environment, are increasingly important determinants of health. Urban built environments have been associated with a number of mental health issues such as anxiety and distress (Prina et al., 2011). Much of the existing literature on urban environments and mental health, however, has focused on adult populations, leaving research on youth mental health comparatively understudied (Lu et al., 2018). Consequently, research into urban environments and youth mental health lacks comprehensive frameworks to guide future study and inform professional practice. This paper addresses the lack of such scholarship and builds on existing empirical evidence and theories of health and place to develop a comprehensive conceptual framework for youth mental health and the urban environment. In doing so, three important bodies of literature are synthesized. First, we describe the history and evolution of conceptualizations of the relationship between health and the urban environment in the fields of planning and public health. Second, we synthesize foundational theoretical bodies of literature and associated methods developed to understand and analyze health and the urban environment, namely time geography, the relational theory of place, temporally integrated geography, critical health geography, and collective lifestyles. Last, we explore the latest strategies and approaches to measure and monitor health and the urban environment, specifically urban preventive medicine, health in all policies, smart cities, mobile health, neurourbanism, and cognitive planning. Linking together these syntheses with the current literature on youth mental health and the urban environment, we propose a novel conceptually interdisciplinary and theoretically-informed framework for youth mental health and the urban environment to guide future research and professional practice. Throughout the syntheses and development of the framework, we also draw from the socioecological model to highlight the role of policy contexts, and we examine current literature on social media and digital networks to recognize the ubiquity of these important determinants of youth mental health behaviours and outcomes. The application of this framework in research settings supports the utilization of complementary methods (e.g., ecological momentary assessments and 'go-along' interviews) and the examination of new hypothesis such as the affective qualities (e.g., relaxation, stress) of various spaces and settings. Practitioners can utilize the framework to plan and design urban forms for groups with more varied behaviours and cognitive abilities (e.g., divided attention, distraction).

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Key Words: Framework, Mental Health, Review, Urban Environment, Youth

GOING GROCERY SHOPPING IN OKLAHOMA CITY: HOW LAND USE REGULATION INFLUENCED THE SPATIAL ORGANIZATION OF STORES, 1930-2020.
Abstract ID: 341
Individual Paper Submission

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Theme/Question

Grocery stores have long been part of the development of communities and contributors to the quality of life for residents. Like the public marketplaces that gave way to contemporary brick and mortar stores, the supermarkets of today offer an opportunity for planners to create economic, social, and environmental benefits for residents (Morales, 2011). Despite being an important component of the food system, grocery stores remain a somewhat understudied part of contemporary planning scholarship and practice. Recent historical accounts of the American food system focus more intently on food production including the preservation of agricultural land and the growth of new urban venues for growing food (Vitiello, & Brinkley, 2014). Understanding how cities have regulated and supported grocery stores and supermarkets in the past provides important insight into how these components of the built environment may be integrated into future community planning.

Today, the grocery store is \undergoing transformation that may impact its spatial organization and role within the larger food system. In early American cities, separate and specialized shops sold dried goods, meats, seafood, baked goods, vegetables and fruits; but, following the development of the automobile and suburban migration, the supermarket brought these diverse offerings together (Stanton, 2018). The advent of online retailing coupled with changes in the way Americans eat suggests another drastic reconfiguration of the ways that food is supplied to communities – a smaller physical presence with more prepared food (Ruhlman, 2017). These changes present both opportunities and constraints to food systems planners interested in enhancing local food security as grocery stores reorganize to address changing preferences and lifestyles.

Approach

This paper examines the history of grocery store development in Oklahoma City, and the promulgation of land use regulation over time. The public processes of zoning in the city of under a million people are influenced by the chaotic establishment of the city during the land run as well as a ad hoc, disorganized approach to planning dictated by economic interests (Anderson, 2018). I use archival research and field investigation to discuss the ways that social, economic, and environmental factors coalesced with local land use regulation to inform the location of grocery stores in the city over time. To do this, I construct a spatial database of contemporary and historic grocery stores. Using telephone directories, I map stores in

1930, 1950, 1970, and 1990 and geolocate contemporary stores through site visits to each location. Using these maps, I look at the ways store location, clustering, and density changed historically. I then use city records, council archives, technical reports, news reports, and photographs to explore the connection between the spatial arrangement of grocery stores and public policy.

Findings and Relevance

This study is currently ongoing but initial results suggest that the number, variety, and size of stores changed over time. Smaller, locally owned stores prominent in almost every neighborhood of early Oklahoma City give way to larger, more spatially dispersed, chain stores over time. Land use regulation appears to follow these changes to the food system rather than guiding them and in many cases focus more on issues like parking and traffic nuisance more than on location. For food systems planners these findings suggest the need for increased scrutiny of approaches that engage supermarkets and grocery stores as part of planning for healthier communities. While land use regulation may provide one mechanism for encouraging grocery store development, other strategies and approaches may prove necessary in order to ensure food is available locally for residents particularly given anticipated changes to the way grocery stores function in the future.

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Key Words: Food Systems Planning, GIS, History, Land Use, Oklahoma City

GOODS SUPPLY IN COVID-19 PREVENTION PERIOD IN CHINESE CITY: ADVANTAGES, RISKS AND EXPERIENCES OF STREET MARKETS
Abstract ID: 402
Individual Paper Submission

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Around the Spring Festival of 2020, the coronavirus disease 2019 (COVID-19) ravages China. Many cities have adopted the policy of "blocked city" or "blocked community". The supply of basic living materials in cities has become an important task and a major challenge. Huangshi City in Hubei Province, as one of the "hardest-hit areas", decided to "open the street market in an all-round way" to avoid the risk of spreading viruses in confined spaces like supermarkets and alleviate pressure on goods supplies. The author, as a citizen of Huangshi, supposes that despite the advantages of the policy, it also challenges the city's governance capabilities. On the first day of the policy's implementation, he submitted a proposal through the Mayor's Mailbox with practical improving strategies for street markets and discussed with related departments in detail. Some suggestions were adopted. 14 days later, with the implementation of the stricter Wartime Control, the street markets were officially closed again.

This paper summarizes the advantages, risks, and experiences of the 14-day transitional street market policy, aiming to examine how to use existing urban infrastructures and open space to formulate resilient goods supply strategies in an emergency, thus providing references for other cities.

Via documentation, this paper first points out that the street market as an informal economy has

advantages both in the construction of urban daily life and in the emergency time. However, it requires a set of integrated governance service mechanisms. By contrast, the results of the "movement-styled" governance in Chinese cities were often unsatisfactory.

Then, from the three links of infectious disease transmission, this paper analyzes the three major risks of opening street markets during the epidemic period, namely: a) The constitution and sources of peddlers increased the likelihood of the asymptomatic patients' presence. b) The location and ventilation of the street markets increase the possibility of virus transmission in residential areas. c) The analysis of the flow of people, the source and distribution of purchasers through big data indicates the possibility of people clustering in a short time.

The paper summarizes the measures taken by Huangshi City to avoid risks through interviews and evaluates their practical effects, including a) Strengthen the supervision of the street vendors' health and market hygiene; b) Arrange stalls scientifically and dispose of waste properly; c) Guide purchasers' travel through local information platforms; d) Adjust the division of duties among departments and establish a joint governance mechanism. These measures achieved effects and supported the operation of the street market.

However, the practice in Huangshi also met with obstacles and setbacks. Referring to global and national practices and guided by urban planning theories, this paper proposes improving strategies to utilize the street markets and urban open spaces as emergency supply infrastructures: a) Hierarchical planning, scientific locating; b) Establish "contactless" markets by using "low-tech" methods; c) Use the Internet and big data to accurately and dynamically control people flow; d) Through e-commerce and the multi-level collaboration of government, community, and enterprise, carry out centralized purchase and distribution of living materials, thus avoiding personnel contact to the greatest extent.

To sum up, using open spaces of different sizes to establish a flexible, provisional street market system is a practical and effective supply solution in special periods. However, it should review the risks, make adjustments according to local contexts, and proactively use the Internet, e-commerce, and big data techniques to stimulate the individual initiative actions and establish a consensus. Only in this way can we coordinate and instruct the city to respond effectively to emergencies and disasters.

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Key Words: COVID-19, urban governance, street market, resilient city

YOUTH OF COLOR AS ACTIVE ACTIVISTS: HOW ADVOCATING FOR CHANGE IN THE BUILT ENVIRONMENT INCREASES PHYSICAL ACTIVITY
Abstract ID: 450
Individual Paper Submission

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Promoting youth advocacy in health interventions has positive implications for increasing physical activity behavior in youth and environmental change in communities. An advocacy approach has potential positive impacts on the social and built environments of youth. Continuing research should focus on how youth can participate in planning and community development processes to improve their individual health and the choices available where they live, learn and play.

There is a clear need to unite analyses of built environment traits with other mechanisms of behavior change in future attempts to promote youth physical activity. These mechanisms include social and psychological variables like self-efficacy, self-image, and self-confidence. Missing from the public debate and academic scholarship concerning challenges of instrument effectiveness is a robust discussion of advocacy and empowerment. These two approaches could be considered as principal mechanisms for measuring and promoting physical activity behavior change, as well as change within the physical activity environment.

Youth advocacy is a promising paradigm that addresses these concerns. Advocacy is a community-led or grassroots approach that can address systems that shape society and our everyday lives. An advocacy approach employs various attributes—including self-efficacy, perceived control, leadership, and a sense of community—to advocate for policy, systems, and environmental change (PSE). This strategy has been successfully implemented in youth tobacco cessation interventions and is being assessed for its applicability to obesity reduction interventions. However, it remains relatively untested in youth physical activity interventions. The results from a nationally scaled implementation of the Youth Engagement and Advocacy for Health (YEAH!) program in urban, suburban, and rural low-income communities of color showed promising levels of physical activity and healthy eating improvement for many young people of color across diverse types of neighborhoods. Implications for planning healthy communities include a curricular intervention in local schools, non-profits, and cities in better understanding how to engage youth as part of the planning process for healthier, livable, more active communities.

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Key Words: youth planning, activist planning, minority youth, healthy communities, active living

WALKING VALUES, REPORTED WALKING BEHAVIOR, AND TRACKED WALKING BEHAVIOR: A PILOT STUDY COMPARING IN-DEPTH INTERVIEWS, SURVEYS, GPS AND FITBIT TRACKING IN BEIJING
Abstract ID: 452
Individual Paper Submission

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Introduction

The health benefits of walking as a physical activity have been widely recognized (Buehler, Götschi & Winters, 2016; Hanson & Jones, 2015). Research on walking behavior and its impact factors has been enhanced with the development of GPS technology (Huang, Moudon, Zhou & Saelens, 2019; Serrano et al, 2018). However, the relationship between walking values and tracked walking has rarely been examined. "Values" in this study refers to "one's judgment of what is important in life" (based on Oxford living dictionaries-English). This pilot study explores the causal relationship between walking values and tracked walking by comparing data from in-depth interviews, surveys, GPS and Fitbit tracking in Beijing. At the same time, it tests a method to collect data and detect walking trips, which is easy to implement without programming skills.

Methods

Thirty adult residents in Beijing were recruited to carry a portable GPS device in their pockets or bags and wear a Fitbit Charge 2 wristband for seven consecutive days in free-living circumstances. A semi-structured 45-minute interview was designed to learn people's ideas and tacit assumptions about walking. Participants also reported on their walking on a typical day via questionnaire. Data on walking time and duration were recorded by Fitbit. GIS was used to map all the trips tracked by GPS. The walking trips were detected using the time range identified by Fitbit.

Results

Results indicate that walking values influence walking, and the degree of strength of walking values is critical. Strong positive walking values motivated participants to have a high amount of walking, even under constraints. Strong negative walking values lead to no walking. Meanwhile, when walking values are weak, other factors such as time pressure, family needs, and built-environment more strongly influenced walking. Participants had many more walking trips for transport than for leisure, and they frequently walked to subway stations. Walking trips for leisure are generally much longer on average, and many participants occasionally walked after meals for leisure near home or workplace. Reported walking time is higher than tracked walking time among most participants.

Conclusions

This pilot project, using multiple methods, provides a rich and nuanced understanding of the relationship between values and walking behavior. Findings imply that strategies such as education and public advertisement to strengthen positive walking values can be useful in promoting walking. By contrasting people's ideas with their tracked behavior, it also raises important questions about common research approaches.

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Key Words: Walking, Values, health, GPS, Fitbit

PLANNING FOR HEALTH AND EQUITY IN CANADIAN PROVINCES, TERRITORIES, AND ONTARIO'S CITIES: A CONTENT ANALYSIS OF CANADIAN PLANNING LEGISLATION, ONTARIO GROWTH PLANS, AND ONTARIO OFFICIAL PLANS
Abstract ID: 470
Individual Paper Submission

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Planning legislation in Canada has yet to explicitly acknowledge the role of planning in preventing chronic mental and physical diseases that comprise the largest health burdens in Canada. With 2.5 billion more people expected to be living in urban areas in the next 3 decades [United Nations, 2018], there is an opportunity to explicitly and persistently link urban planning and health promotion through urban design. Chronic diseases such as cancer, cardiovascular disease, chronic respiratory conditions, and diabetes represent 70% of global mortality [GBD Risk Factors Collaborators, 2015]. While individuals' behaviours such as tobacco smoking, sedentary lifestyles, and poor diets account for the vast majority of chronic disease development, the contexts in which these behaviours are expressed are of increasing interest to researchers, policy makers, and planning and public health practitioners [Wray & Minaker, 2019]. There is an opportunity to shape communities with physical activity, social connection, and food access at the core of future urban development. This study synthesizes how provincial and territorial planning acts in Canada and growth plans and official plans from Ontario cities of at least 100,000, address health and well-being in Canada. We conducted a content analysis of all Canadian provincial and territorial Planning Acts (n=13) and associated policy statements (n=4), growth plans from the Province of Ontario (n=2), as well as official plans from single-tier, regional, and lower-tier municipalities in Ontario with over 100,000 population (n=25). We extracted relevant data and conducted a thematic analysis of health and health equity in each document (N=44). Planning as a determinant of health was noted either explicitly (commonly in terms of contaminated or hazardous sites) or implicitly (through a social determinant of health such as affordable housing policies). The objective of this paper was therefore to examine and analyze 1) the extent to which and how health and health equity are described within planning legislation in Canada, 2) the extent to which and how health and health equity are described within official plans in Ontario (Canada's most populous province), and 3) the extent to which and how health and health equity are described within two of Ontario's growth plans. This analysis identifies a number of health-related opportunities in current planning policy in Canada and how planning considerations of health and determinants of health are distributed across Provinces and Territories. The commitment to creating communities that are in support of the concept of "complete communities" - the development of communities that feature a diverse mix of residential and employment land uses - was shown to be apparent across all levels of planning legislation in Ontario. The findings from this research can help planning practitioners to explicitly shape future policy relating to urban infrastructure and health equity, increase Canada's commitment to planning for health and health equity, and create sustainable communities and built environments.

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Key Words: Health, Planning, Policies, Communities, Sustainability

SOCIAL ISOLATION, MOBILITY, AND HEALTH AMONG OLDER CHINESE IMMIGRANTS IN THE GREATER TORONTO AREA
Abstract ID: 615
Individual Paper Submission

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As older adults progress through the life course they are at higher risk of social isolation (Keefe et al., 2006), which has been shown to be more predictive of mortality than smoking cigarettes (Pantell et al., 2013). This social isolation could be further exacerbated when coupled with international migration, which also creates barriers to social participation and senses of belonging. Social isolation is both an associate of and potential cause for loneliness (House et al., 1988), and together these two phenomena have been shown to have a reciprocal relationship with worsening physical and mental health outcomes (Cacioppo & Cacioppo, 2014). Building strong social support networks is integral to supporting health among older migrant populations but built environments may pose barriers to their formation or quality (Lamanna et al., 2019).

To explore the impact of the built environment on an older immigrant population's social and physical health, this research takes a mixed methods approach through capturing data on individuals' daily mobility patterns and activities. Surveys and time-use diaries from 130 Mandarin-speaking Chinese immigrants over the age of 60 who moved to be near their adult children are collected across urban and suburban neighborhoods in and near Toronto, Canada. Additionally, semi-structured interviews of a subset of 20 individuals are conducted to understand why they may be experiencing social isolation and how their urban context influences these feelings. Time-use diaries are used to construct spatiotemporal activity spaces for each participant, allowing robust representations of participants' shifting experiences with built environments, allowing this study to move beyond commonly used residence-based measures. Quantitative results, including descriptive statistics and estimated model results, of the surveys and time-use diaries will be presented, with a focus on how social connections in Canada and urban mobility barriers impact levels of social isolation, loneliness, and self-reported health. Additionally, emerging themes from interviews will be used to supplement quantitative results, providing novel information about the experiences of older Chinese migrants in the GTA and context for time-use findings. These results will provide a multifaceted look at social isolation and inform urban planning policy aimed at improving overall levels of social and individual health among older, Chinese immigrants in an urban center of migration. As immigration continues to shape urban landscapes, understanding social relationships is key to incorporating this growing demographic into the urban fabric.

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Key Words: social isolation, older adults, immigrants, built environment, time-use

REDLINING OF 21ST CENTURY? RESTAURANT REVIEWS AND NEIGHBORHOOD EFFECTS
Abstract ID: 638
Individual Paper Submission

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The web 2.0 created new digital platforms in which consumers, by definition, consume, but also generate information. In general, people, as well as platform providers, assume that information under user-generated platform filled by thousands or millions of people is true and objective. We challenge this assumption by examining restaurant review websites of Trip Advisor and Yelp in the context of Franklin County, Ohio. Our exploratory and multivariate analysis uncovers several important structural patterns as well as certain kinds of biases.

First, as the number of review increases per restaurant, the level of rating also increases. In other words, if a restaurant does not receive enough number of reviews, its rating tends to be low. Second, poor neighborhoods tend to have more extreme ratings, such as very high and even more importantly very low. Third, our fixed-effect multivariate analysis demonstrates that certain neighborhoods indeed have low ratings controlled for the number of reviews, price range, and types of food. However, those neighborhood effects are not uniformly linear with the income level of the neighborhood. Overall, our findings indicate neighborhood effects as well as the cycle of low number of restaurant reviews were shown to negatively influence customer perception of the restaurant. Lastly, we provide implications for planning scholars and practitioners.

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Key Words: Restaurant review, Neighborhood effects, User-generated contents

COMPACT DEVELOPMENT AND BMI FOR YOUNG ADULTS: ENVIRONMENTAL DETERMINISM OR SELF-SELECTION?
Abstract ID: 750
Individual Paper Submission

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The literature widely reports a statistical association between the built environment and obesity (Ewing et al., 2014; Frank et al., 2019). What is less clear is the reason for the association. Is it environmental determinism, that is the effect of the built environment on individual behavior, with compact places inducing more physical activity and hence lower weight? Or is it self-selection, that is, the tendency of healthy weight individuals to select to live in compact places where they can be more physically active, and possibly of overweight or obese individuals to opt for sprawling places? Both theories have been promoted in the literature (Ewing and Hamidi, 2017; Cao et al., 2009). This study seeks to address this issue using data from the National Longitudinal Survey of Youth. We study body mass indices of survey participants, all young adults, at two points in time, and follow them longitudinally for a nine-year time period as they move from place to place. We estimate models for the entire cohort and also for young adult movers and stayers separately. We find evidence of self-selection, but not environmental determinism. First, we find that compactness is not associated with BMI in young adults for those staying in the same place for the entire period. Second, we find no association between changes in sprawl and the changes in BMI for the cohort of young adult movers. Third, our longitudinal analysis shows that young adults who are not overweight tend to move in the direction of greater neighborhood compactness, while overweight young adults tend to move in the direction of greater sprawl. As young adults are at a unique stage in the life cycle, these findings cannot be generalized to other cohorts. These findings do not suggest that place characteristics are unimportant, as planners need to meet the growing demand for walkable, compact and connected places, which are currently undersupplied (National Association of Realtors, 2017). Still, they do not provide evidence that place characteristics impact the behaviors of young adults and hence their weight. Rather they suggest that places that are compact appeal to more than half of the young adult population, and that this latent demand should be met by providing dense, diverse, and well-designed residential options even in the suburbs, through regional transportation plans and local planning and zoning. Education for primary and secondary students, who are about to enter young adulthood, could also play a role.

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Key Words: obesity, self-selection, longitudinal analysis, urban sprawl, young adults

RETHINKING HUMAN SERVICES EDUCATION DELIVERY IN RURAL COMMUNITIES: A REVIEW OF POLICY IN CANADA AND AUSTRALIA
Abstract ID: 760
Individual Paper Submission

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Helping professionals, specifically doctors, nurses, teachers, early childhood educators and social workers play essential roles in the vibrancy and health of communities. Educating, recruiting and retaining these essential workers is increasingly problematic and challenging in rural communities across countries like Canada and Australia. Factors such as geography and demography, a 'rural' culture, resource limitations, and workforce shortages (Strasser, 2001) complicate abilities to implement effective education, workforce planning and practice-training with corresponding downstream impacts to economic and community development—in essence, a vexatious and vicious circle. While effective education and training programs are key to supporting the successful delivery of rural health and social services there is a paucity of research that examines the design of training and education models within an inter-professional and community-based frame in rural jurisdictions. This research intends to answer:

How might we best design a training and education model to meet the needs of helping professionals during their primary training professional education in rural jurisdictions?

In what ways does the current policy context and broader education, health and service structures interplay with one another and impact and inform rural and remote health and service delivery?

This research paper presents a conceptual framework of rural and remote health developed by Bourke, Humphreys, Wakerman, and Taylor (2012), based on Giddens (1986) theory of structuration, to explain the connection of what happens in rural locales within broader structures and actions, while integrating health policy, community action, political decisions, and rural service delivery. It considers geographic isolation, health systems, and social structures to demonstrate that rural health and service delivery is understood as spatial and social relations among local residents in relation to the actions of professionals. It uses policy and document analysis as the main methods of data collection as well as personal reflection and insights. This research examines the empirical evidence and theoretical frameworks that underpin education and workforce development and planning in rural communities, as well as the role that post-secondary education (PSE) plays in labour market transformation in rural contexts. This research provides recommendations for community planners, policy makers and educators about how to build education and training methods for helping professions, particularly within rural and remote locales.

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Key Words: rural health, community health, education planning

A DATA-DRIVEN QUEST FOR SAFE TRANSIT STATIONS: AN EMPIRICAL ANALYSIS OF THE LINK BETWEEN TRANSIT MODE, STATION AREA, AND CRIME IN THE CITY OF CHICAGO, IL
Abstract ID: 774
Individual Paper Submission

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Public transit stops can have various impacts on their surroundings from revitalizing the neighborhood economy, to supporting job access and healthy communities. Much of these dynamics, however, remain untested since most of the focus in the empirical literature has been on public transit's effect on local property values (Bowes and Ihlanfeldt 2001ibeas et al. 2012). Safety; as the major pillar of healthy communities, could be at risk (or not) in mass transit stations. On the one hand, high concentrations of people may increase opportunities for criminal activity. On the other hand, they may contribute to eyes on the street deterring criminals during times when most people use transit such as during morning or afternoon commutes but not during other times (Paulsen 2012; Billings, Leland, and Swindell 2011; Ihlanfeldt 2003; Phillips and Sandler 2015). Whether and to what extent these two mechanisms exist, and which crimes are more likely to happen near transit stations might vary by the type and design of transit stops and stations, their placement, as well as the built environment surrounding the station (Paulsen 2012; Paulsen 2012). That said, there is limited recent empirical evidence of these relationships. In this paper, we help to close this gap in the literature and estimate the effect that transit design, placement of stops and stations, and the built environment surrounding them have on criminal activity distinguishing by time of day and type of crime. To reveal these dynamics, we focus on the city of Chicago. Chicago provides an ideal setting for this study due to both high transit crime rates as well as a relatively a higher diversity of station areas.

To do so, we draw on various sources of data. We use longitudinal point-level crime data obtained from the Chicago Open Data Portal. These data include all crimes that happened in Chicago from 2001 to the present. In addition to the specific location of crimes, the data include the time of day of the crime, its type (i.e. assault, theft), whether an arrest was made, and whether it was domestic related. We match these data to transit routes, stations and stops using General Transit Feed Specification data, as well as datasets from American Community Survey and Longitudinal Employment Household Dynamic to measure built environmental attributes of station areas.

We begin the analysis by categorizing transit stations, stops and connectivity throughout the route. We first measure density, land use diversity, and walkability in 1.25 miles around a rail station as well as bus frequency and stops. Combining these measures helps us to identify the station areas with strong urban vitality and human activity. Then we use propensity score matching and average treatment effect analysis to compare types and level of crime in different station types. Finally, we examine the interactions between the built environment surrounding stops, crimes, and arrests. Our results will shed light on the role that development surrounding transit stops, density, walkability and as well as land use have on crime. As such, findings from this study will provide critical insights for planning and policy development for safe and healthy communities. These are particularly important as many areas in the United States move to encourage use of sustainable forms of transportation and transit is seen as a key element in neighborhood development.

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Key Words: Crime, Transit-Oriented Development, Built Environment

NEOLIBERALISM AND THE BARRIERS OF DISABILITY TOWARDS AN INCLUSIVE CITY IN CHINA.

Abstract ID: 784
Individual Paper Submission

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The key role of urban studies is to break the barriers and boundaries so as to promote social mobility and mixture in cities (Mumford 2016). However, disable groups confronts unpredictable barriers in urban life. With particular political and economic context, disabled groups in China are to some extent trapped in a pocket which is hard to get rid of. This study aims to understand the mechanism in which people with impairments turn into disability and to investigate their potential trajectories to realize positive social movement.

A deeper understanding of accessibility, the highly contested policies and regulations urges a wider range of social-political theories to guide them (Gleeson 2001). Following the social model of disability, urban researchers make efforts to avoid people with impairments experiencing social isolation or exclusion from the mainstream, and propose an inclusive city model to promote social inclusion (Fricano 2008). While these concepts show their strengths for thinking about the social and spatial barriers to be removed, they neglect the fact that the disabled people confront a barrier system which restricts the possibilities of this group. These barriers include not only social-spatial inaccessibility, political-economic oppression, but also individual experience of impairment (Hall and Kearns 2001).

This study applies social ecological model and simultaneously considers the individual experience of impairments, the social and spatial accessibility, and the political-economic environment from a life course perspective (Kim and Moen 2002). The metaphor, pocket of disability, is used to represent the inevitable situation of disabled people with limited spatial mobility, isolated social connections, and few participations to political economic activities. Based on this framework, the study focuses on the role of these multi-scale factors in shaping people's experience of getting impairment, losing the capability of mobility, economic activities, and social participation in different pockets of their life course. Distinguished from previous studies, the ultimate goal of this study is not to help disabled people join the mainstream, but to find alternative trajectories for disabled people to escape from the pocket, and realize their individual development and social movement in the inclusive city.

This study is based on the fourth largest city in China, Shenzhen. The method adopted here is a mixed-method approach. It applies quantitative survey to examine the life course period, the everyday life, the different types of needs, limitations, and barriers of six types of disabled people. Then it applies qualitative in-depth interviews to delineate the narratives of being disabled. The quantitative and qualitative data are combined to understand how the multiple social ecological factors affect the onset, limitation, and capabilities of being disabled.

We conclude that disability process in urban China is a path of social immobility in current neoliberal society. The political economic environment, such as Hukou policy and the combined social welfare policy exclude social vulnerable group from welfare support from the state, which play an important role transforming the onset of impairment into a permanent disability. Then the inaccessible physical and social environments in urban area block disabled people home and restrict their economic and social participation. The recent neoliberal capitals in social welfare create products that add up the capabilities of some disabled people, but also create further exclude disabled people who are not afford such products.

This paper combines social ecological model and life course perspective to dynamically understand the onset and the following experience of being disabled, which can help to find alternative trajectories for disabled people's individual development and social movement. The findings also bring new debates on the notion, the ultimate goal, and the practical strategies of inclusive city in urban studies.

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Key Words: disability, social-spatial accessibility, social immobility, political economy, inclusive city

BENCHMARKING SCHOOL WALKABILITY
Abstract ID: 789
Individual Paper Submission

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Background: Walking to school provides children with an opportunity to engage in physical activity and to establish good habits for active lifestyles in their adult life. Despite the growing efforts to promote active school travel, most interventions have been relying on limited evidence drawn from general behavioral studies, due to a lack of studies that explicitly measure the walkability of school environment as related to how many children actually walked to and from school. The challenge can be ascribed to both a lack of data on school children walking and the difficulty to transfer findings directly into program benchmarking. As a consequence, the effectiveness of the interventions often remains unevaluated, making it difficult to prioritize resource allocation and secure continuous funding support.

Objectives: (1) In collaboration with Washington State Department of Transportation, we utilized the 2016 Washington State Student Travel Survey, a uniquely large dataset of 11,424 participants from 242 K-8 schools, to validate built environment, sociodemographic, and school policy factors identified to characterize walkability in the literature against observed walking behavior of children. (2) We then deployed a two-stage verification method to construct a walkability score and to estimate the percentage of children walking for the rest of 1728 schools where walking information was not available. The performance of the algorithm was tested under different data availability scenarios.

Objective 1: We performed the analysis at both school and child levels to ensure the stability of the results. We used negative binomial model at the school level, and hierarchical logistic regression model at the child level. At each level, we also used conditional inference tree to rank factors by their magnitudes of impacts. Two sets of models yielded similar results. For built environment, the presence of sidewalks near schools was most strongly related to children walking. For sociodemographic determinants, the proportion of children living close to the school was the strongest factor, followed by school encouragement, and the percentage of low age students.

Objective 2: We developed a z-score based scoring algorithm to measure the walkability of school neighborhoods and the percentage of children expected to walk, by applying best subset regression on a subset of the dataset (66 schools in King County). We then verified the score performance using the rest schools with survey data. Before applying the score to all Washington State schools, we tested the scoring algorithms under three different data availability scenarios, where sidewalk data, student home location information or school policy was not available. Results showed that our algorithm performed well under all scenarios. In Washington State, the main barrier to having more children walking was high traffic exposure. Schools with high traffic exposure and students from low income family, thus lacking alternative commute options other than walking, could be the target of future funding programs.

Implication and future work: (1) Study results add empirical evidence to student active travel. Interventions in the school neighborhood built environment and policies for schools to encourage walking and to have children attend schools in their home neighborhoods are promising approaches to increase the rate of walking. (2) The developed scores serve to benchmark the walkability of K-8 schools in Washington State and to help prioritize funds allocation to support active school travel by ranking schools by needs and identifying components of the school environment that could be improved to most effectively increase the likelihood of walking. The stability of the scoring algorithm shows the potential to transfer this methodology to other cities and States.

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Key Words: walking to school, machine learning under data scarcity, evidence-based decision making, scenario testing

"GEOGRAPHIES" OF ACCESS TO PRIMARY HEALTH CARE OF AGEING PEOPLE – THE CASE OF LISBON METROPOLITAN AREA, PORTUGAL
Abstract ID: 814
Individual Paper Submission

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Several authors have reflected on access to health services, considering the existence of several dimensions that go beyond availability and accessibility (Levesque et al., 2013) but Siegel el al (2016) report that the issue most important is accessibility, because of its impact on others. This statement is particularly evident when communities with equal accessibility potentials have different patterns according to population characteristics. In the context of ageing that characterizes societies, age is thus an increasingly relevant factor, because for the same population figures, an older population needs more health care (Ma et al. 2018). In addition, factors stemming from the economic constraints resulting from the crisis contracted demand from elderly (Doetsch et al., 2017). This communication aims to verify the potential accessibility of the elderly population to primary health care in the Lisbon Metropolitan Area (AML) and confront them with their demand patterns. Results shoes intra-regional differences related with socioeconomic conditions of the elderly, their family background, mode of transport and type of service. This approach considers two methodological phases: in the first, using GIS Network Analysis, the potential of population coverage to an area covered by a 15-minute physical accessibility to health facilities is calculated, considering the two-way pedestrian mode. speeds; The second is the result of a survey conducted at AML, which analyzes the demand for health equipment (mode and time of travel). It was concluded that despite the fact that primary care healthcare equipment is programmed as a proximity service, the differentiation in service delivery and the different socioeconomic characteristics of the

elderly population point to relevant differences in the context of AML.

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Key Words: Accessibility, Primary Health Care, Ageing people, Equity

THE ROLE OF ACTIVE MODES IN THE CONSUMPTION OF SERVICES BY THE ELDERLY POPULATION: A READING FROM LISBON METROPOLITAN AREA, PORTUGAL
Abstract ID: 828
Individual Paper Submission

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Active modes as walking or cycling, are often seen as a factor of urban sustainability (Egan, 2004; Banister, 2008), but also as a pillar for planning livable communities (Lowe et al., 2015) with better health by minimizing cardiovascular, respiratory and health problems as obesity (Muhlbach, 2012). Thus, the transport modes chosen in the consumption of goods and services, associated with the places of demand and individuals' territorial perception (Sauter, 2003), shape the conditions that support healthier and livable communities. This paper aims to understand the mobility patterns of the elderly people in the Lisbon Metropolitan Area, emphasizing the use of active modes in the acquisition of goods and services. This study comes from the application of a survey to 408 families spread across 11 study areas in different urban contexts of the AML, focusing the analysis on the age group over 65 years. It is already possible to advance that the perception of the majority of respondents regarding the safety of walking or cycling in the area surrounding their dwelling is positive. Demand for more frequent goods and services and leisure spaces such as groceries and markets, banks and gardens is usually recorded in the vicinity of housing or the workplace and by walking, as opposed to supermarkets, health services and sports equipment. The degree of use of active modes is higher in the most densely populated areas, however, there are variations related to the urban typology and the location of the study cases in the context of the AML, as well as the family composition, namely if we are dealing with families of 1, 2 or more individuals.

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Key Words: Active modes, Services consumption, Aged population, Urban sustainability

MAPPING THE WAY TO HEALTHIER CITIES: A CASE STUDY OF FOOD ENVIRONMENT MAPS TO IMPROVE HEALTH AND PLANNING POLICY
Abstract ID: 829
Individual Paper Submission

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Planning and public health have a shared origin story: both disciplines emerged out of concerns about how rapid urbanization and industrialization in the 19th century impacted population health and well-being. Because many factors determine the health and well-being of a population, there is a lack of clarity about what constitutes health policy. For example, it is well-established that planning policies related to improving public transportation access improve population health through reduced traffic-related injuries, improved air quality, and increased rates of active transportation. Although these types of policies are not "health policy" per se, they have major impacts on population health. More recent research has begun to explore how planning for food systems impacts population health and well-being. One thread of this research examines spatial distributions of different types of retail food sources, and some planning policy has attempted to modify residents' geographic access to food (e.g., through improving supermarket access in "food deserts"). However, there is a lack of clarity about how empirical evidence is used in decision-making related to health (Oliver et al, 2014; Kneale et al, 2017). Common knowledge would suggest that in this digital age, policy makers rely on the latest scientific evidence to inform their decision-making processes. However, a growing body of evidence suggests that the use of evidence in health-related decision-making is inconsistent at best (Kneale et al, 2017; Shaxson, 2019; Cairney et al, 2016).

Planning academics and practitioners have a long history of theorizing place-based, community decision making related to city-building (Whittemore, 2014). To our knowledge, however, planning theory has yet been applied to public health decision making. This is a particularly strong gap given the localized nature of public health, and the place-based, community decisions made by public health units to improve health.

This project uses planning theory to explore decision-making processes of policy makers through a case study of food policy and interactive food environment maps. Local, provincial, and federal government organizations are increasingly interested in place-based determinants of food choice (i.e., food environments), given that poor diet is responsible for the largest global burden of morbidity and mortality (Lang et al, 2018). Municipalities are increasingly paying attention to local food policies to improve Canadians' access to nutritious and sustainable foods, despite important gaps that currently exist (PHAC, 2017). Food mapping (mapping the locations of different types of food outlets) is a commonly used and very well understood form of food environment assessment (Health Canada, 2013).

Approximately 25 qualitative interviews with participants from planning, public health, research, and policy fields will be conducted to how decisions that affect community retail food environments are made in Canada, the types of evidence used to make decisions, how useful existing food environment maps are for decision making, and how policy makers use maps and map data. The interview data will be analyzed using Meyer and Ward's (Meyer & Ward, 2014) pluralistic approach which includes the verification of

planning theory and the potential generation of a theory pertaining to how decisions are made around food environment policy.

Evidence gathered through the interview process will be used to inform a proposed interactive mapping tool for Canada. The research project will contribute to an understanding of how policy decisions are made about the retail food environment in Canada at different levels of government from both a planning and public health perspective. Planners will be able to use data from the mapping tool to inform their decision making and carry out food environment assessments easily, with the goal of enacting policy change and creating healthier places to live.

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Key Words: public health, food environment, policy, decision-making, planning theory

URBAN OUTDOOR PLAY IN THE SOCIO-CULTURAL CONTEXT OF WEST BENGAL INDIA
Abstract ID: 845
Individual Paper Submission

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Free play is defined as the voluntary activity of a child and their freedom to play without any compulsion. Play, in children and adolescents, contributes to physical, intellectual, social, and emotional development. While the importance of public spaces has been a matter of concern for long in the planning policies of a city, the exclusion of children from urban planning policies is a long-accepted debate in planning for children literature. This paper addresses the issue of healthy development of children in an urban context by investigating outdoor play opportunities in the global south with a focus on three different sized cities of West Bengal in India. It has been established previously that independent child mobility is primarily dependent on outdoor play activities that a child exhibit. The theoretical constructs of the paper are governed by three aspects of planning – child development, urban play-spaces, and socio-cultural impacts on outdoor play. The study investigates the 'what,' 'where' and 'when' aspects of outdoor play through survey data from 400 students (aged 11 to 14 years), 60 teachers, and 40 students in three different sized cities of West Bengal, India. Follow up interviews, spatial analysis, and ethnographic observations helped to explain the survey data and primarily contributed to understanding the aspects of socio-cultural factors in outdoor play.

Less than half of the children responded to engage in outdoor play regularly. The study found that though

most of the children played quite frequently, it was mostly limited to traditional play activities such as cricket, soccer, and badminton. The concept of free play seemed to be absent both among adults and children except on a few occasions. Children living in the small to mid-sized cities showed a higher probability of playing 'make-believe games' that do not require equipment. Several children identified their flat terraces as favorite play spaces with their friends. This was a novel finding in terms of where children played outdoors in non-western cities. Only 30 percent of the children acknowledged any support from adults for play activities. Younger children and their parents preferred low-traffic streets near residences for outdoor-play than parks located further.

Ethnographic study through behavior maps, videos, and photographs was made in a school playground where the administration forbade play due to parents' demands. It was the only play-environment where free play was observed in abundance. When traditional equipment was unavailable, children recreated regular or innovative play-activities through natural or human-made objects such as tree-branches or lunchboxes. Social interactions among children was found to have a positive impact on their play behavior. Survey results showed several children engaged in outdoor play activities from 7 pm – 9 pm. Interviews revealed that this was a cultural factor, as most families' dinner time was as late as 10 pm. Culturally, it was also found that though the adults of the society and school administration acknowledged the importance of outdoor play, they seldom encouraged or supported outdoor play activities of children.

This paper sheds light on the usage of residential streets and rooftops as essential play spaces for children, and thus expresses the need for urban planners to investigate these micro-systems within the city as everyday urban spaces for children. The study shows the necessity of leadership roles by parents and educational institutions to encourage free play among children. The paper concludes with a discussion for further research in understanding the nuanced cultural idiosyncrasies of the play-place-responsive approach to enrich the literature on the relationship between place and play in children's literature, especially in the context of the global south.

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Key Words: Children on Streets, Urban Play Spaces, Socio-cultural context of Play, Active Living for Children, Global South

IS URBAN SPRAWL A DRIVING FORCE OF INCREASING INEQUALITY IN HOSPITAL ACCESS FOR THE ELDERLY?
Abstract ID: 849
Individual Paper Submission

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The spatial distribution of hospitals determines patients' physical accessibility to healthcare, which is a factor related to the quality of life, public health, and social equity, particularly for the elderly. The accessibility for the elderly in an aging society has been increasingly gaining attention due to the conflict between this population group's limited mobility and auto-oriented urban sprawling development which

is frequently recognized as a barrier to accessing opportunities such as health care service. However, studies of hospital accessibility by elderlies are lacking in the literature. Therefore, this study aims to fill in this gap through exploring the linkage of this accessibility issue and urban sprawl using the Greater Cincinnati Metropolitan Area (GCMA) as a case study in the ten-year period from 2000 to 2010.

Urban sprawl mainly refers to the low-density expansion of urban space, followed by a series of economic, social, and environmental issues, such as waste of land resources, traffic congestion, social segregation, environmental degradation, and loss of agricultural land (Jarah, Zhou, Abdullah, Lu & Yu, 2019). With the gradual emergence of the disadvantages of urban sprawl, how to define and measure urban sprawl and how to resolve corresponding issues have become an important subject of current urban planning research. This study takes GCMA as a case to develop a urban sprawl index to measure urban sprawl using ten indicators (area, shape, discontinuous development, strip development, leapfrog development, horizontal density, population density, agriculture impact, open space impact, traffic impact) from three dimensions: urban spatial configuration, urban growth efficiency, and external impacts (Jiang, Liu, Yuan & Zhang, 2007, Osman, Arima & Divigalpitiya, 2016). The urban sprawl index is calculated through a weighted sum of ten indicators using census tract in GCMA as the unit of analysis. This index indicates the spatial difference in the extent of urban sprawl in GCMA between 2000 and 2010.

This study will then develop a model for evaluating the connection between the developed urban sprawl index and hospital accessibility for the elderly using the 2010 travel survey data in the Ohio-Kentucky-Indiana Region (OKI). The individual data from the survey will be used to calculate the hospital accessibility for the elderly and non-elderly separately and then aggregated to the census tract level. With the calculated results, we will be able to examine the existence of spatial mismatch between the elderly clustering neighborhoods and hospital service areas in 2010, and the difference in hospital accessibility between the elderly and the non-elderly. At the end, we will examine the association between the urban sprawl index and the hospital accessibility for the elderly using an Ordinary least square (OLS) regression to test the hypothesis that places with more sprawl create barriers to accessing hospitals for the elderly group.

This study will advance the knowledge of understanding the linkage between urban sprawl and health service accessibility. In this aging society, the study will support coordinated hospital planning and urban development policy formulation from a perspective of social equity in public health.

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Key Words: elderly, hospital access, urban sprawl, health care equity

SPATIAL DECISION SYSTEMS FOR INCENTIVIZING ADOPTION OF ORGANIC FARMING
Abstract ID: 888
Individual Paper Submission

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This paper attempts to frame the issue of 'transition to organic farming' as one of 'community incentivization strategies' for supporting the development of ecosystem services. It uses a spatial analysis approach that translates GIS data on ecosystem services provided by agricultural land to a Payment for Ecosystem Services (PES) model that incorporate incentives for farmers to adopt organic practices and remedy some of the current market failures. The paper speaks to community organization in rural and developing country contexts, sustainability of food systems, and application of geospatial analytical tools to such analyses.

Background

Actors across the globe have been pushing for organic farming for not only its purported health benefits, but also to reduce the impact that inorganic practices and chemicals have on the environment. Some studies, for instance, record improvements to water quality, soil health and biodiversity on organic farms and its surrounding areas; this is contested by others that record "metabolic rifts" with natural systems (Ref). However, challenges with large scale adoption of organic practices remain: (i) The transition to organic farming results in temporary drops in agricultural productivity on farms for a period of three to five years, an economic shock that subsistence farmers in developing countries typically cannot absorb; (ii) Agricultural inputs such as fertilizers and pesticides transmit to surrounding land holdings and downstream soil and water bodies, which extends the overall spatial impact of the farm. This is felt more so in small land holdings where individual farmers have small impacts on environmental quality (boundary and scale problems), thereby expanding the actual problem to a community level or network problem; (iii) Poorly functioning markets for less attractive organic produce suggest that farmers do not get adequate returns on investment.

Policies that incentivize farmers to adopt organic practices and remedy some of the current market failures can be framed as a Payment for Ecosystem Services model that provide monetary compensation to farmers for the environmental benefits that their farms have; it also has implications for Participatory Guarantee Schemes (PGS) in organic farming that hold individuals accountable to their communities.

Methodology

The paper uses remotely sensed data and imagery of agricultural lands combined with data on typical agricultural produce and productivity to develop a model that might be used as input to a Decision Support System that quantifies an appropriate incentive scheme. The algorithm first estimates the spatial extent of polluting agricultural practices and places them within the larger context of the ecosystem impacts that they have. It then attempts to valuate the transition from inorganic to organic farming as the value of these network ecosystem benefits.

Results and relevance

A preliminary analysis shows that the economic value of these varies largely by topography, landholding size (network impacts) and the quantum of farmers who shift. This model builds on previous efforts to quantify individual ecosystem services such as soil loss or biodiversity by (i) combining them in an integrated framework and (ii) introducing network impacts to determine a critical mass needed for the shift to be viable, thereby introducing a community impact component to such shifts.

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Key Words: Ecosystem, Agriculture, Community, Geospatial, Environment

AN ANALYSIS OF POSSIBLE BARRIERS TO THE GROWTH OF COMMUNITY GARDENS LOCATED IN SAN BERNARDINO COUNTY AND LOS ANGELES COUNTY
Abstract ID: 937
Individual Paper Submission

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Community gardens are a common land use and social activity in urban agriculture. Among the social, environmental, health and economic benefits of urban agriculture, we see very little growth in having more community gardens in urban communities. Although there is plenty of research on the benefits and the necessity of community gardens, there is little research on the barriers that hinder the growth of community gardens. "Barriers" are defined in this paper as obstacles that prevent the development or progression of a community garden. Community gardens are important to urban agriculture and the social needs of a community, so why are we not seeing more gardens in low-income communities? What are the challenges that cities and organizations face when trying to establish community gardens? Are community gardens a priority in urban communities? As we try to look closer into the barriers that hinder the growth of community gardens, semi-structured interviews with city employees (planners, community service managers, community development directors, etc.), garden owners, and non-profit organizations were conducted, transcribed and analyzed to examine which barriers are the most apparent. Interviewees have confirmed barriers that have been researched in other scholarly work such as the lack of land availability (Irvine et al., 1990; Angotti, 2015), funding (Twiss et al., 2013), NIMBYism (Lejava & Goonan, 2012), and policy and institutional barriers (Mikulec et al., 2013); but after researching cities in San Bernardino County and eastern Los Angeles County, findings suggest that other barriers such as language, application fees, communication with vacant lot owners, and barriers within non-profit organizations themselves are also playing a role in the slow growth of community gardens. It is with the hope that this research sheds light on how support from local governments can relieve most barriers to community gardening. Urban agriculture is a growing phenomenon and cities are starting to incorporate these policies into their general plans and zoning codes but a lot of local, smaller cities are still behind. As city planners and researchers, it is important to reveal the challenges that are faced when trying to establish urban agriculture in order to close the gaps and better inform/create policies that are more inclusive to address the needs of the community.

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INVESTIGATING THE BUILT ENVIRONMENT, TRAVEL DISTANCE AND IMPROVED CANCER OUTCOMES
Abstract ID: 951
Individual Paper Submission

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The built environment is a significant context in which health-related barriers can be formed. The literature on the associations between the health and built environment addresses the neighborhoods' physical attributes as one of the critical elements determining the individuals' overall health outcomes and behaviors such as their physical activity, obesity and cardiovascular disease (e.g., Saelens and Handy 2008; Brownson et al. 2009). Though in cancer studies, the majority of previous literature highlights the effects from accessibility to health care providers, and only a few studies have emphasized the contribution of the built environment to cancer outcomes (Davidson et al. 2005; Hurley et al. 2014). Furthermore, earlier research usually employs the built environment attributes to mediate or control the role of other cancer determinants such as patients' socioeconomic status on cancer risk factors, and they rarely concentrate on the built environment as an independent driving force behind patients' decision-making in cancer-related behaviors. So, the literature appears ambiguous when it counts for the effects of built environment variables on cancer outcomes.

This study aims to explore the associations between the residential built environment, distance to health care providers, and years of being tumor-free after radiotherapy treatment. We seek to answer: 1) to what extent the residential built environment and accessibility to cancer care providers influence on patients' behavior in obtaining health care treatments, and 2) how these factors influence on improved radiotherapy outcome.

The present study uses a cross-sectional survey of cancer patients in the USA, 2019. We utilize data related to those cancer patients diagnosed and followed radiotherapy treatment while considering their residency length during radiotherapy treatment (n = 143). The Geographic Information System (GIS) was used to calculate the travel distance from patients' residential neighborhoods to their health care providers for radiation treatment. We also geocoded patients' home addresses and measured built environment characteristics, including density, street network design, land-use diversity and distance to transit. Socioeconomic attributes of the participants, including gender, diagnosis age, and race, were considered in our model as the controlling variables. Utilizing from the structural equation model, we investigate the effects of built environment on tumor-free years after treatment by considering the mediating role of travel distance to radiotherapy hospitals.

Results indicate that longer travel distance to hospitals is associated with more tumor-free years after radiotherapy treatment. Cancer patients who reside in neighborhoods with a longer distance to public transit are more probable to travel to distant hospitals for their treatments. Furthermore, living in lower density areas is related to longer travel distance to hospitals and higher tumor-free years. Controlling the role of race indicate that white patients are more likely to follow their treatment in distant hospitals compared with other races and have higher improved outcomes after radiotherapy.

Investigating the patients' travel distance to health care providers reveal that patients who decide to receive radiotherapy treatment in farther centers that may offer higher quality treatments have more significant improvement in cancer outcome. It seems that the benefits of presenting at a high-quality cancer center can overwhelm the downsides of travel burden because travel distance can be mediated by access to high volume hospitals located in remoter distances.

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Key Words: Built environment, Travel distance, Cancer Treatments, Tumor-free years

IMPROVING ACCESS TO KIDNEY TRANSPLANTATION FOR AFRICAN AMERICAN RESIDENTS THROUGH A COLLABORATIVE PLANNING PROCESS
Abstract ID: 985
Individual Paper Submission

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This paper assesses the utility of adopting a collaborative planning process to create a community outreach program addressing racial disparities in access to kidney transplantation (KTX) in the Western New York (WNY) region.

Nationally, the number of Americans with end-stage renal disease (ESRD) is currently 900,000 and is expected to increase to 2 million by 2030 (United States Renal Data System, 2004). Kidney transplantation is the optimal treatment for people with kidney failure. The African American community has a greater burden of chronic kidney disease (CKD). African American patients are 3.7 times more likely to have ESRD (USRDS, 2017), but 24% less likely to receive a kidney transplant when compared to white patients ESRD (USRDS, 2014).

Barriers hindering transplant access include income, health insurance coverage, geographical distance to a transplant center, cultural backgrounds, lack of information, and covert racism (Bratton et al., 2011). Despite increased transplantation opportunities, racial disparities in transplant access are attributed to numerous medical, socioeconomic-, health literacy- (Harding et al., 2017; Grubbs et al., 2009), and system-level barriers. Compared with white patients, African Americans are more likely to have misinformation about transplantation and inadequate discussions with physicians. Consequently, African Americans are less likely to be referred to a transplant center (Ayanian et al., 1999; Harding et al., 2017), and when they are referred, it is generally later in their disease progression (Kasiske et al., 1998; Joshi et al., 2013).

For this reason, communities now prioritize improving equitable access to KTX as part of local efforts reduce racial and health disparities. The Regional Center of Excellence for Transplantation and Kidney Care at Erie County Medical Center (ECMC) is adopted a collaborative planning approach to plan and

create a community outreach program targeting African American residents in the region. ECMC is located in Buffalo, NY, a Primary Care Medically Underserved Area (PCMUA), and a high proportion of its patients are low income urban residents and Medicaid enrollees. For this reason, ECMC is a critical resource for uninsured/underinsured area residents, and services are targeted to those hardest to reach, areas of greatest unmet need, and those facing the greatest obstacles in access to healthcare services.

A multidisciplinary project team at ECMC utilized a collaborative planning process to develop and implement a transplant outreach program. The project team includes ECMC's transplant program director (MD, MS), departmental research director (PhD, MUP), and university student research team. The team conducted a multi-method qualitative study (Silverman & Patterson, 2014) to describe the regional ecosystem of transplant access (Patzer, 2020) in WNY, pinpoint current barriers confronted by African American patients, and identify culturally competent practices for future outreach and engagement efforts. The team engaged key transplant stakeholders, including patients, caregivers and families, and staff from nephrology practices, dialysis centers, and the transplant program, in individual meetings and group discussions. Stakeholder feedback was supplemented with observations and field notes gathered by the research team at collaboration meetings and outreach events held at dialysis clinics, nephrology practices, and the transplant center. The team implemented open and focused coding to synthesize key themes from transcripts and field notes.

The team's process was driven by stakeholder engagement and laid the foundation for implementing the transplant outreach program. Community input addressed the need for culturally competent transplant education and outreach practices in an underserved community. Study findings describe the nature of stakeholder engagement, discuss the benefits and challenges of implementing a collaborative approach, and identify best practices for community health planning. Results suggest that a collaborative approach may be effective in engaging hard-to-reach resident populations to address health disparities.

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Key Words: Collaborative planning, Community health, Health disparities, End-stage renal disease, Kidney transplantation

PLANNING APPROACHES THAT CAN RECOGNIZE RURAL FAMILIES STRENGTHS: A SYSTEMS AND NETWORKS ANALYSIS OF CHILD ABUSE AND NEGLECT PREVENTION
Abstract ID: 989
Individual Paper Submission

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New frameworks in child abuse and neglect prevention promote public health and strengths-based, community engaged approaches to prevention (Browne, 2004; Fortson, et al, 2016). Child abuse and neglect risk is highly correlated with contextual conditions like poverty, family capacity to respond to stress, and in some cases (particularly with neglect) personal capacity to respond (Maguire-Jack & Showalter, 2016). A statewide consultation with 99 community rural and urban leaders and staff members, representing a range of formal and informal institutions, points to gaps in even basic supports, resulting in stress to families as well as for prevention providers and community organizations (Author, et al, 2020) and suggesting that better rural planning is needed to support family and child well-being.

In this strengths-based analysis, we first outline rural families' needs, as reflected through providers' perspectives on prevention work. Basic needs include supports for shelter, furniture, small fees for such things as drivers' license registrations and school expenses, transportation in a state that does not fund public transportation, quality child care, access to higher education and retraining, mental health supports, physical health supports, emergency services, disability supports, and recreation needs. Prevention frameworks suggest that baseline needs such as these are critical for relieving stress; and more importantly, providers' input points to the way communities' are already engaged in helping to meet family needs. Providers also reveal, however, constant and inventive collaboration through digital and interpersonal outreach which relies on their own initiative, suggesting a fragile informal system. The analysis suggests that there is potential to build on and strengthen the prevention work that is already underway to support families. However, this data also points to administrative barriers, including funding and mandate restrictions, which prevent advocacy to move ahead, suggesting that prevention efforts are repeatedly only plugging the gaps in family supports.

The findings suggest an urgent need for a different planning approach to support resilience of rural families, one that can "see" strengths in the ways that rural communities already function, but which also has a theoretical base for visioning next steps. Rural communities' needs cannot be met with the current center-periphery funding and administrative models (Vilches, Pighini, Stewart, & Goelman, 2017). Planning for rural communities' families' needs should offer a coherent whole picture, including targets for improvement and outcomes, identifying key players, and collaborative stakeholders. We use an inter-organizational networks analysis approach (Popp, Milward, MacKean, Casebeer, & Lindstrom, 2014) to identify nodes of coordination, and, based on qualitative analysis, periphery connections that could be strengthened if they were better connected. Systems analysis additionally offers a focus on how macro and micro levels interact, in ways that reinforce system biases that continuously disadvantage rural and impoverished families. Prevention workers and community leaders spoke to what they would do if they had a million dollars: we need to provide theoretical leadership to assist in planning a way forward.

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Key Words: rural, family, networks_analysis, neglect, social_planning

DEVELOPING A MULTILEVEL APPROACH TO CHARACTERIZE AND ANALYZE TRANSPORTATION DISADVANTAGE

Abstract ID: 1032
Individual Paper Submission

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An estimated 3.6 million people annually are unable to get timely medical care due to a lack of transportation in the US. Transportation disadvantage (TD), characterized by a lack of reliable transportation access, is a multilevel concept that comprises a combination of individual and area-level barriers, such as lack of car ownership, along with place-based barriers including residential location, dispersed services, and inadequate public transport. While TD is a recognized barrier to healthcare access and healthy lifestyle choices, its definition and associated impacts continue to be investigated in a fragmented manner. Much of the health services research on this topic has focused on individual-level TD (i.e., vehicle ownership) and has failed to capture the area-level determinants of TD (food, healthcare and job access). Medicaid Non-Emergency Medical Transportation (NEMT) is one example of an intervention to alleviate individual-level TD and its impacts on healthcare access in our most vulnerable populations. High NEMT usage can also be an indicator of individual-level TD. However, little is known about the interactions between TD at the individual and community levels, and how they influence health outcomes.

In response, we investigate three specific research questions: (1) How can we best develop a comprehensive measure of TD (2) What is the spatial distribution of NEMT utilization in the context of area-level TD and does this vary based on age, gender and race? (3) Is there a statistically significant relationship between area-level TD and individual NEMT utilization? To reflect these multi-level barriers, we develop an expanded measure (index) of TD as a combined construct of mobility and access. Our area-level measures are constructed at the zipcode tabulation area (zcta) as this corresponds to the spatial identifier in the Medicaid data. Using a comprehensive dataset that combines Medicaid NEMT utilization data, and contextual measures of TD, we investigate the relationship between area-level and individual-level TD for the State of Georgia.

We conduct exploratory analysis with clustering techniques to detect meaningful, data-driven groupings in the data. We test data-mining based segmentation techniques that can accommodate numeric and categorical data types such as Hierarchical Clustering and Two-Step Clustering. The segmentation analysis will also help describe "anomalies" to our hypothesis, such as ZCTAs with high area-level TD and low NEMT utilization. The segmentation analysis provides us with data-driven methods to explore the necessity of estimating separate models within each population subgroup. We also create typologies of data based on individual characteristics of race, gender, age, and eligibility criteria. This will be the first step in our exploratory data analysis to detect meaningful groups across which disparities can be seen. For our confirmatory analysis, we specify a multilevel generalized linear model using NEMT utilization as the dependent variable and the area-level TD index along with socio-economic characteristics, demographic characteristics and other health-related as independent variables. We will use count data modeling methods such as Poisson/Negative Binomial regression for this purpose.

While TD is a recognized barrier to healthcare access and healthy lifestyle choices, its definition and associated impacts continue to be investigated in a fragmented manner. The existence of safety-net TD interventions such as Medicaid NEMT is currently under threat. There is also a lack of evidence linking the efficacy/utility of NEMT provision in the context of area-level TD. The biggest gap in knowledge is that interventions for different aspects of TD (food access, healthcare access, job access) are implemented and evaluated in silos, for different health outcomes, for different timeframes, different geographic contexts, and using small populations, making generalizability and systems-based decision-making

challenging. Thus, this analysis lays the foundation for developing a systems-based approach to alleviating TD and its associated health impacts.

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Key Words: Transportation Disadvantage, Access, Health, Medicaid

SNAP RETRENCHMENT AND NEIGHBORHOOD FOOD ACCESS IN PITTSBURGH, PENNSYLVANIA
Abstract ID: 1056
Individual Paper Submission

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This study explores the place-based effects of food welfare retrenchment in a mid-sized metropolitan area, Pittsburgh, Pennsylvania, a city that recently saw the closure of a previously-heralded "food desert" supermarket intervention (opened 2013). The Supplemental Nutrition Assistance Program (SNAP, formerly "food stamps") is the largest form of federal food assistance and one of the largest welfare programs in terms of its cost and reach. In addition to the benefits to individuals and households, the program has been deployed as a counter-recessionary means of economic stimulus, with various analyses identifying a "multiplier effect" to SNAP benefit dollars. Most recently, the American Recovery and Reinvestment Act (ARRA) of 2009 expanded the program's eligibility criteria and increased average benefit amounts for participants; since 2014, many of these provisions have been allowed to sunset by lawmakers, and/or local economic conditions have improved, resulting in large reductions in program enrollment and benefit allocation. Yet, economic geographers and community activists have raised concerns over the spatial unevenness of recovery. In persistently poor communities, SNAP represents the primary food budget for a large proportion of households; thus, reductions in SNAP eligibility or allocation amounts without an equivalent rise in income stands to unbalance neighborhood food retail economics. Studies from major metropolitan areas illustrate potential linkages between the SNAP expansion and increased food retailer availability. This study considers the food environment impact of SNAP reduction by integrating six years (2014-2019) of monthly ZIP-level SNAP redemption data from Pittsburgh, with food retailer availability based on city licensing and inspections data. Using multilevel modeling approaches, this explores the association between reductions in SNAP benefit redemption and subsequent food retailer closures. Relevant covariates at the retailer (e.g., store type, number of inspection violations), neighborhood (e.g., race/ethnicity, population density, car ownership, SNAP participation rate), and city (e.g., unemployment rate) are included in models, and used to describe the kinds of places, households, and retailers that may have been affected most by broader SNAP declines.

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Key Words: SNAP, food access, welfare, neighborhoods, community development

REGIONAL FOOD SYSTEMS PLANNING FOR ALL: EXPLORING POTENTIALS OF INSTITUTIONAL PUBLIC FOOD PROCUREMENT AS A JUST FOOD SYSTEM
Abstract ID: 1068
Individual Paper Submission

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Public food procurement is a comprehensive, interrelated approach to transform the conventional modes of food production, distribution, and consumption. The expanding global corporate food system in recent decades has threatened local food economies and made food supplies more vulnerable. The profit-oriented food system has undermined the livelihoods of small-scale farmers and increased disparities in access to healthy foods. On the farm side, the large-scale industrial monoculture by food corporations has impaired ecological sustainability and caused the loss of biodiversity. Imbalance of power in the corporate-dominant food politics, however, makes it challenging for alternative voices to participate in democratic decision-making and build collaborative governance towards sustainability transition in the current food systems. While non-profit and private-sector efforts to re-embed and regain the ownership of food systems are emerging in many global cities, such as food hubs and farms to school programs, few of these efforts have been led by the public sector.

With the case of the Urban-Rural Coexistence Public Meal Program (UCPM) in Seoul, Korea, this study investigates an emerging food politics around government-led institutional food procurement, focusing on the program's core agendas - "the local" and "the environment-friendly" - and its governing structure across multi-level stakeholders. The UCPM is an urban food policy launched by the Seoul Metropolitan Government to establish short, direct supply chains between small- and mid-sized rural farmers and urban institutions such as daycare centers and welfare facilities. Selected rural towns and urban districts within Seoul are paired one by one so that urban institutions can directly source healthy local foods via designated public meal centers. For this place-based public food procurement system to function, multiple stakeholders across urban and rural areas have been involved in the UCPM from the Seoul Metropolitan Government, urban district-level governments, rural local governments, participating urban institutions, rural farmers, to grassroots organizations operating the public meal centers. Two years of implementation of the UCPM pose a few critical questions in pursuing "the local" and "the environment-friendly" in place-based public food procurement: 1) what does "the local" mean, particularly in the city without significant agricultural production? 2) what are the potentials and limitations of consumers-oriented movements for "the environment-friendly?" 3) how are rural initiatives to revitalize local food markets clashing with increasing public demand for sustainably-grown food?

Methods to answer those questions include a) direct observations at district public meal centers and local food centers in rural towns (where food is being aggregated from the countryside), b) semi-structured interviews with government officials, involved/excluded grassroots activists, local farmers, participating urban facilities that are the ultimate users of foods (e.g., day care centers), and selected members of the UCPM civic council (total 32), c) document review of the government's master plans, pertinent local ordinances and food plans, and the civic council meeting minutes, and d) secondary data analysis of survey data obtained from the Seoul Metropolitan Government. Four types of governance have been identified in this study as the critical pillars of the UCPM: a) partnerships between the government and grassroots organizations, b) trust-building between urban and rural actors, c) cooperative channels

between different government departments relevant to food procurement policy, and d) future collaboration with excluded local food actors. This study highlights the importance of being local as opening an alternative market based on urban-rural relationships beyond geographical and administrative boundaries. Building a collective vision towards "the environment-friendly" across urban and rural stakeholders is also crucial in promoting place-based food procurement. Ultimately, lessons from the UCPM will provide insights into the building of collaborative governance for other global municipalities that want to implement public food procurement as a transformative policy to innovate regional food systems.

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Key Words: Transformative Food Systems, Public Food Procurement, Short Food Suppy Chains, Food Governance

PLANNING URBAN AGRICULTURE IN TORONTO: FROM POLICY SUPPORTS TO PRACTICE CHALLENGES
Abstract ID: 1082
Individual Paper Submission

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Urban agriculture has played a significant part of the cycles of recognizing and ignoring food as an urban system. At its nadir, food production within cities and their immediate surroundings has been regarded as a hobby, a recreation activity, a land use awaiting 'higher and better uses' – if regarded at all. Nowadays, with much more attention paid to urban agriculture, this is now seen by numerous professionals (including planners) as a valuable contributor to food security, environmental qualities, livelihood, community building, and more.

Compared to most other cities in the Global North, Toronto has long acknowledged food security challenges and its own role in working to address them. After 30 years of the Toronto Food Policy Council, 20 years of the Toronto Food Charter, and 10 years of the Toronto Food Strategy, Toronto is recognized internationally for governance, knowledge and capacity responses to food system issues. Within this history, urban agriculture has long been a key area of interest in relation to food systems. The Toronto City Council's unanimous endorsement in 2012 of the GrowTO Urban Agriculture Action Plan culminated a long collaboration by a mix of actors, including City staff, civil society activists, researchers and design professionals. This document sought to provide a road map for a wide range of "recommended actions and changes that will help Toronto's urban agriculture movement grow and flourish."

This paper reflects on this collaborative process and considers how certain GrowTO recommendations were able to be implemented and others not. The city's reputation as a leader in urban agriculture belies a complicated relationship between the municipal bureaucracy and those seeking to move urban farming from a set of ideas to realizations in the ground, with a proliferation of very diverse projects across the city. As many actors have sought to design and implement projects, numerous challenges related to government policies and professionals have come to light.

To get a clearer idea of the governance processes and instruments related to urban agriculture, as well as the reality of how urban agriculture projects have encountered City-related challenges, I undertook with colleagues a study from two different angles. On one side, we interviewed key actors from across multiple City divisions and agencies about how their unit has been dealing with urban agriculture as part of its work. On another side, based on our long involvement in the urban agriculture movement locally, we identified projects that have encountered various types of City issues.

We thus confirmed that all sorts of projects have been running into challenges emanating from the City, and most of these challenges relate to various regulatory frameworks – planning regulations, zoning code, building code, etc. – which form the bread and butter work of planners. Not only have the frameworks themselves presented a variety of challenges, but so have the lack of references in these frameworks and of guidance to compensate for the problems resulting from such regulations and absences. We were able to construct case studies that analyzed in some detail the impacts of regulatory and policy issues on various projects.

While planners can provide important positive innovations in food systems, including urban agriculture initiatives, regulations, attitudes and professional practices of planners can cause significant negative challenges to such innovations and initiatives. A generally supportive policy environment in a city is not sufficient to enable these to be realized if day-to-day practices are unsupportive. The paper concludes with an examination of how new collaborations seek to address these challenges, based on the understanding gained of the intricacies of project development and those of practice by City actors, with planners at their center.

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Key Words: urban agriculture, Toronto, action plan, regulations, municipal staff

ASSESSING THE IMPACTS OF NEIGHBORHOOD ATTRIBUTES ON EVALUATIVE AND EMOTIONAL SUBJECTIVE WELL-BEING USING THE THREE-FACTOR THEORY AND PIECEWISE REGRESSION
Abstract ID: 1094
Individual Paper Submission

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Comprehending and promoting well-being has been regarded as a key goal in academic research and policy making, as it has long been considered key to the creation and maintenance of healthy, productive societies (Diener & Suh, 1997; Durand, 2015). Many countries utilize objective proxies of well-being, such as income, literacy, and life expectancy, as well as subjective measures, such as how life is perceived and experienced by individuals (Durand, 2015). The subjective approach of measuring

perceptions and life experiences has been characterized as subjective well-being (SWB). Subjective well-being is defined as "a person feeling and thinking his or her life is desirable regardless of how others see it" (Diener, 2009). This definition highlights the thinking and feeling dimensions of SWB. Thinking refers to the evaluative/cognitive dimension of SWB, where the evaluation of individuals' lives in predominantly positive terms leads to higher SWB. Feeling refers to the emotional/affective dimension of SWB, where a preponderance of positive emotion over negative emotion leads to higher SWB.

As urban planners focus on designing and maintaining living environments, they have the potential to enhance the well-being of residents and provide opportunities for all to flourish. It is, therefore, critical for planners to understand how the built environment influences well-being. Neighborhood environments can influence people's SWB through their physical characteristics, social environment, access to services, opportunities they afford their residents, and the promotion of certain kinds of behavior. Despite the theoretical importance in linking planning to SWB, the attention to SWB in planning is relatively recent compared to disciplines such as psychology and public health. There remain significant gaps in the planning literature, including inadequate research on the emotional aspects of SWB and the omission of key SWB determinants in analyses due to a lack of interdisciplinary perspectives. In addition, the use of techniques such as importance–performance analysis is prominent in planning and has been used to identify neighborhood infrastructure investment priorities to improve residents' well-being. Such analyses assume that the relationship between neighborhood attribute performance and its influence on SWB is linear and symmetric. However, a growing number of studies from fields such as economics (Kano, 1984; Mikulić, 2007) and sustainability planning (Ramaswami, 2020) have questioned this assumption, suggesting that the influence of neighborhood attributes on SWB may be asymmetrical and that viewing the world through a linear and symmetric lens could lead to the misallocation of resources.

In this study, we hope to fill current gaps in the literature by examining whether the influence of neighborhood environment attributes on evaluative and emotional SWB is linear or asymmetrical while drawing from the interdisciplinary literature on SWB to include a comprehensive list of determinants in our analysis. In testing the symmetry of these relationships, we employ two analysis techniques—three-factor theory regression and piecewise regression—to check the sensitivity of findings to modeling techniques.

For the study, 400 respondents were randomly selected from six neighborhoods in the Twin Cities Metro Area, MN with varying neighborhood environments and interviewed between October 2016 and October 2017. Data was collected using paper surveys and a smartphone application over a seven-day period and included measures of evaluative and emotional SWB, socio-demographic characteristics, neighborhood perceptions, and other variables known to influence SWB.

Using three-factor theory regression and piecewise regression, we could identify improvement priorities based on the nature of the relationship between neighborhood attribute performance and SWB (symmetrical or asymmetrical) and average attribute performance. In addition, by comparing results from three-factor theory regression and piecewise regression models, we found evidence that suggests the sensitivity of findings to the modeling technique used. Contributions to existing research in the field and policy implications will be discussed.

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Key Words: Subjective Well-Being, Neighborhood Planning, Happiness, Neighborhood Infrastructure, Built Environment

PHYSICAL ACTIVITY IMPACTS OF MOVING TO A WALKABLE COMMUNITY: A NATURAL EXPERIMENTAL STUDY
Abstract ID: 1168
Individual Paper Submission

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Background: In 2015, the US Surgeon General issued a Call to Action to promote walking and walkable communities. Creating walkable communities is now well-recognized as important strategies to promote physical activity and health of people of all ages and abilities. Despite the increased awareness and promotion efforts, disease burdens associated with sedentary lifestyles remain high. Further, while empirical evidence is accumulating to confirm the cross-sectional link between community environments and physical activity, their causal relationships are just beginning to be explored.

Objectives: Using the survey and accelerometer data captured from those moving from auto-dependent to walkable communities (cases) and similar participants who did not move (comparisons), this pre-post, case-comparison study examines if moving to a walkable community increases physical activity in a significant and meaningful way.

Methods: This study utilizes a unique natural experiment opportunity where a new, master-planned, and walkable community is being built with over 3000 homes. Data came from 115 participants (cases=37, comparisons=78) from Austin, Texas, who completed two waves of one-week long data collection, as part of the Active Living Austin project. The two waves provided pre-move baseline and post-move follow-up data for cases. Their matched comparisons completed the two waves during similar time frame. Physical activity was examined using average daily minutes of moderate-to-vigorous physical activity (MVPA). Difference-in-Difference (DID) was used to test the significance of the pre-post differences between cases and comparisons, while accounting for the potential biases/errors resulting from this non-randomized observational study design.

Results: At baseline, comparison participants were more active than case participants (68.9 vs. 52.2 MVPA minutes/day). However, at follow-up, cases showed a significant increase in MVPA, while comparisons showed a significant decrease. DID confirmed that pre-post MVPA differences between cases and comparisons were statistically significant (p=0.011). On average, cases increased their daily MVPA by 7.6 minutes, while comparisons decreased MVPA by 2.8 minutes. DID based on the weekday-only daily MVPA was also significant at the 0.05 level. After controlling for significant covariates (gender and ethnicity), DID remained significant at the 0.05 level. The pre-post difference was greater among Hispanics (+10.0 minutes) and woman (+11.7 minutes), compared to their counterparts.

Physical activity impacts of moving to a walkable community was further examined using the 37 case-comparison pairs matched in baseline age, gender, ethnicity, income, daily MVPA, and Walk Score, based on propensity score matching. We conducted 1 to 1 nearest neighbourhood matching using logistic regression. After the matching, there were no significant differences (p>0.05) on covariates between cases and comparisons. The overall $\chi 2$ balance test was not significant ($\chi 2(5)=0.997$, p=0.963) suggesting satisfactory matching.

Results from the 37 matched pairs showed that the pre-move MVPA minutes were lower among cases (52.2 vs. 64.0 minute) but the post-move measures were similar between cases and comparisons (67.7 vs. 53.7). DID was also significant (p=0.015) with a mean increase of 7.6 daily minutes among cases and a mean decrease of 3.3 daily minutes among comparisons.

Conclusions: This study showed that moving to a walkable community indeed increased residents' daily MVPA and therefore helping to reduce the risk of developing various chronic conditions linked with physical inactivity. The MVPA benefits hold true across different demographic and socio-economic groups, with even greater benefits found for Hispanics and women.

Implications: This natural experiment study provided new evidence supporting significant and meaningful causal effects of walkable communities on physical activity. It helps justify the implementation of policies and practices necessary to create more walkable communities to encourage population-level lifestyle changes toward being more active and healthier.

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Key Words: walkable community, physical activity, active living, walking, natural experiment

PLANNING STRATEGIES FOR CONTROLLING EPIDEMIC SPREAD: CHALLENGES, AND NEW DIRECTIONS IN IRAN: LESSONS LEARNED FROM COVID-19 OUTBREAK
Abstract ID: 1176
Individual Paper Submission

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Local governments can play a major role in controlling epidemic spread, especially, during the early stages of viral outbreaks. The recent COVID-19 outbreak in Iran showed the unpreparedness of the State and local governments to manage and control the epidemic spread. This research reviews different policies that has been adopted around the world to control the recent outbreak, while focusing more on the situation on the ground in Iran. We discuss the adopted urban planning strategies in regards to public health and the challenges in the prevention process when there is a lack of integrated system between healthcare systems, and other services and decision makers in the government. Despite the fact that Iran has one of the best healthcare systems in the region, the country became one of the most vulnerable counties with one of the highest death rates.

Reducing the unnecessary person by person contacts has been of the main goals of decision makers. Replacing face-to-face systems with virtual and digital systems across industries had been a common strategy. However, both macro and micro level management of local governments were not as effective as they could. For example, monitoring, modeling, and managing travel patterns was neglected in the early stages of outbreak. We compare the adopted and proposed short, medium, and long strategies such as a) spatial stratification of cities based on land use, activities, density, transportation infrastructure, medical facilities, food accessibility, and the affected areas; b) real-time monitoring of affected residents, both confirmed and presumptive positive cases; c) facilitating two-way communications between citizens and decision makers; d) defining and redefining safe districts; e) defining critical vs noncritical amenities and services; f) mandatory and voluntary relocations and their potential benefits and threats.

We analyze these strategies through the framework of urban informatics. We discuss appropriate data types, data gathering approaches, data analytical processes, and integrated and data-driven decision-making processes. At the end, we discuss the challenges and opportunities in each stage, and provide recommendations for better integration of the health decision-making system and urban planning to reduce the rate of outbreak or control of epidemics.

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Key Words: Epidemic disease, temporal-spatial analysis, Coronavirus outbreak, Iran, data-driven decision making

ENVISIONING TRANSFORMATIVE FOOD SYSTEMS CHANGE: UNDERSTANDING THE ROLE OF MULTI-STAKEHOLDER ENGAGEMENT AT THE CULINARY AND NUTRITION CENTER IN SPRINGFIELD, MA
Abstract ID: 1248
Individual Paper Submission

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Equitable access to good food is a critical element in building healthy communities. While the conventional food system is criticized for contributing to poor health outcomes, environmental degradation, and a low-wage economy, the alternative food movement is presented as a transformative solution with the potential for fundamental change. It promises varied goals such as increased access to healthy food, promoting health equity, building environmental sustainability, strengthening local economies, and fostering food sovereignty. Yet, critics argue that the alternative food movement's transformative potential is threatened by the lack of a shared vision. Literature suggests that community-based multi-stakeholder coalitions – while engaging in participatory planning processes – can harness unique power in building consensus around food systems futures. But what kinds of futures? This research investigates the potential for cross-sector multi-stakeholder coalitions to promote holistic,

progressive, and equitable urban planning within the context of community food systems. To do so, this community-based research project engages with the city of Springfield, MA. A post-industrial "Gateway City," Springfield has concentrated low-income communities of color that have suffered severely as a result of systemic oppression and segregation, including a lack of adequate access to healthcare, good jobs, and healthy food. This has resulted in serious health inequities in the city. Home Grown Springfield is a school food initiative aimed at promoting health equity in Springfield by eliminating student hunger. Based around the Culinary and Nutrition Center, a brand-new full-service commercial kitchen and storage facility, Home Grown Springfield prepares healthy homemade meals for over 30,000 students across 60 educational sites using fresh, locally sourced ingredients. This qualitative case study examines the engagement process of the Culinary and Nutrition Center's Advisory Council, a multi-stakeholder coalition convened in 2018 to guide the project. The engagement process was envisioned by the Springfield Food Policy Council, Springfield Public Schools, and Sodexo, and funded by the Henry P. Kendall Foundation. Data was collected through in-depth interviews with 15 Advisory Council members, participant observation at 8 Advisory Council meetings, and a review of organizational documents. Using grounded theory and content analysis, data was analyzed to understand how the Advisory Council participants engage across difference to envision the future of the project and its impacts on the Springfield community. Research findings suggest that engagement of diverse actors promotes expanded project visions, which results in more holistic, progressive, and potentially transformative food systems change. In addition, it reveals challenges around the process of authentic community engagement and the dynamics of power-sharing between project leaders and community members. This research has multiple objectives: 1) to document the first year of planning and engagement around an innovative community food systems initiative; 2) to demonstrate the opportunity for planners to facilitate diverse cross-sector engagement for more holistic and progressive regional planning; and 3) to highlight the critical need for community leadership and decision-making in planning for sustainable and equitable community development.

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Key Words: food systems, participatory planning, multi-stakeholder coalition, health equity

PLACE-BASED SOCIAL CAPITAL AND NEIGBORHOOD SAFETY
Abstract ID: 1300
Individual Paper Submission

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Urban neighborhood characteristics and transition is important for formulating effective programs for revitalization and community development. This article is motivated from an intellectual tradition that seeks to explain variations of neighborhood outcomes such as crime and civic participation. While there are various factors that matter with spatial variations of neighborhood outcomes (inequalities) in an urban area, this study is particularly interested in place based social capital and their impact on neighborhood outcome such as safety. In urban planning fields, social capital has been applied in a variety of contexts to

explain the ability of a community to solve the problem of collective action. The spatial dimension of social capital arises from the fact that their value and the way they are valuable to an individual depends on the physical distance. Social ties/networks may be restricted by the geographic location. Thus social capital is location specific.

The paper examines the interconnectedness and spatial dynamics among social capital, civic participation and neighborhood safety (crime), using GIS and statistical models. The main research question is "Do social capital contribute to neighborhood outcome (i.e, lower crime rate)?" In doing so, a novel approach is introduced to create the social effect composite index to contain spatial dimensions of place based social activities. Thus the spatial dynamics of social indicators are analyzed at a finer level of analysis such as parcel and street level. The traditional and common method of social capital research uses survey methods, with the unit of observation being either metro areas or cities or counties or zipcodes. This method is not necessarily well suited to capture the spatial dynamic nature of neighborhood characteristics at a finer level, e.g. street or parcel level. The paper proposes methodological improvement to fill this research gap. The fast growth of GIS and spatial data removes former barriers to increasing spatial resolution, and the improvement of statistical modeling supports spatial data analysis of the research to be better worked. For empirical testing, SEM (Simultaneous Equation Modeling) and Path models are utilized. The study area is the City of Lincoln, Nebraska. Lincoln has a strong history of community organizations, voluntary activities, and neighborhood social capital supports.

The findings show that place-based neighborhood social capital and civic participation strongly influences the spatial variation of neighborhood outcome - crime. Government authorities see social capital as a heuristic tool that sheds new light on public intervention and the way in which public services can use this potentially valuable ingredient to attain their objectives. Along this line, the research reinforces the importance of developing formal organizational dimensions of social capital to support collective civic engagement in urban neighborhoods. To identify implication for planning practices, the paper discusses environmental strategies to promote positive social effects.

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Key Words: Place based neighborhood outcome, Neighborhood Safety, Community development, spatial dynamics of social capital, social environment

FOOD & NUTRITION SECURITY AND HUMAN RIGHTS IN THE DEEP SOUTH: EDUCATIONAL, ECONOMIC AND SOCIO-BEHAVIORAL INVESTMENTS CRITICAL FOR ADVANCING COMMUNITY HEALTH
Abstract ID: 1302
Individual Paper Submission

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The overall goal of this project is to define and develop a framework for implementing specific educational, economic and socio-behavioral investments, strategies and policies to sustainably address food and nutrition insecurity and related chronic diseases, as well as healthy lifestyles in Mississippi.

The UN Department of Economic and Social Affairs asserts that food and nutrition security is one of three grand challenges to sustainable development and that chronic and persistent food insecurity – often rooted in poverty – can negatively influence economic growth and development and ultimately, can decrease global security and stability. Results from the 2019 State of Food and Nutrition Security in the World conclude that world-wide two billion people experience moderate or severe food insecurity and with a lack of regular access to nutritious and sufficient food, these persons are at greater risk of malnutrition and poor health. The report also contends that moderate and severe food insecurity affects eight percent of the population in Northern America and Europe. In the US, according to data from the December 2018 Current Population Survey Food Security Supplement, 11.1 percent (14.3 million) of households were food insecure at some time during 2018. Income inequality increases the likelihood of severe food insecurity, the report indicates.

In the US millions live in persistent poverty and face high levels of food insecurity, poor nutritional health outcomes and high levels of chronic diseases. Of the 43.1 million of Americans that live in poverty, 41.1% live in the South, a region that also encounters other major obstacles such as low educational outcomes, high obesity rates and few economic opportunities. Food insecurity is a pervasive and serious issue facing the entire country, with highest rates in the Deep South, particularly the state of Mississippi. Mississippi has the highest rate in the nation - 20.8 percent of households are food insecure. Mississippi is also the poorest state in the nation. Fifty of the 82 counties in the state are considered to be in persistent poverty. USDA data also shows that 600,000 people - 20% of Mississippi's population, are considered to be food insecure, including 1 in 4 children.

The specific objectives of this research include:

1. Assess the trends and relationships between food and nutrition security, selected chronic diseases and socio-economic characteristics in Mississippi counties.
2. Evaluate current and potential investments, strategies and policies to address the intersection between food and health.
3. Develop a conceptual framework to operationalize human rights in advancing the intersection between food and nutrition security and community health.

The methodology is a mixed methods approach using secondary data and a Pearson's analysis to assess relationships. The research will also use the perspective of key stakeholders to develop a human rights framework to ensure communities' rights to food and nutrition security and good health outcomes. Anticipated results is that there would be a significant relationship between food, health and socio-economic characteristics and that there is a lack of appropriate investments, strategies and policies to address the intersection between food and health in Mississippi.

This work would be highly relevant to planning scholarship and practice to foster pro-poor and inclusive transformations focusing on people and place communities at the center to reduce socio-economic vulnerabilities to set ourselves on tract to end food and nutrition insecurity and improving health outcomes.

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HUNGRY TO GET THERE: WHAT ARE THE TRANSPORTATION CHALLENGES THAT LATINO IMMIGRANTS FACE GETTING FOOD IN MINNEAPOLIS.
Abstract ID: 1304
Individual Paper Submission

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Food access disparities in the Twin Cities region are influenced by a complex set of factors determining how people get to food. While the need to address food disparities is well known, what is less understood by urban planners is how transportation modes, choices and capacities influence the food access of under-represented groups as well as how they experience transportation modes. These analysis focuses on these gaps by investigating the transportation challenges that Latino immigrants in the City of Minneapolis face in accessing culturally relevant and healthy foods. The analysis answers this question through the data collection of six focus groups that included a number of qualitative tools: (1) focus groups based on coned questions asking what are the challenges that Latino families face in accessing cultural relevant and healthy foods through transportation? (2) The delivery of graphic surveys asking where, how long and how much money does it takes Latino families to get to food, and what transportation mode they use to access food? (3) And a participatory mapping exercise asking Latino families how they experience driving, taking public transit, walking and bicycling to food access points? We delve into the planning of the project, its partnerships, the development of research instruments and the major findings to explore how transportation influences the way that Latino immigrants experience their foodscapes. The findings include the development of a mixed methods qualitative data collection kit as well as qualitative data points addressing safety, access to alternative food sources and infrastructure improvements around transportation as key aspects of food access.

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THE EPIDEMIC OF OBESITY IN THE BUILT ENVIRONMENT OF DALLAS METROPOLITAN AREA
Abstract ID: 1312
Individual Paper Submission

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The influence of the built environment and community design has shown an impact on public health; whether improving community health or not. Meanwhile, chronic disease growth is occurring in many US cities, therefore; public health issues have been a concern for many years, especially when it is related to the built environment (Frank, et al., 2008, Ewing, et al., 2014). According to much research, the built environment contributes to causing health issues for children and adults, such as; obesity, high blood

pressure, type 2 diabetes, asthma, cancer, and heart diseases. The epidemic of obesity has been a health issue concern to cities and policymakers for a long time, thus; new projects approved, and new policies passed to control, mitigate, and reduce public health issues in many US cities. Improving and redeveloping communities to promote health is an approach many cities are adopting. Moreover, cities have initiated a public and private partnership to encourage physical activity. Indeed, many researchers who are investigating the role of the built environment in public health show that the built environment can support physical activity where land use and public transit are major keys to promote walking and bicycling. (Frank, et al., 2004, Kent, & Thompson 2012).

Cities all around the world are facing population growth whether at the level of births or new immigrants. Therefore, the demand for urban development expansion is necessitated to accommodate population boost. Consequently, the causes and consequences of public health issues escalating are associated with these population growths and the built environment.

As many US states, Texas state is facing a significant issue of obesity and other related diseases. According to the Centers for Disease Control and Prevention (CDC), the obesity rate among adults in Texas is 33.6% in 2016, while in the Dallas metropolitan area the rate is almost 32.3%. Moreover, some communities in the DFW area obesity rate exceeded 40% especially in the south, east, and west areas of Dallas city. Other cities that are auto-dependent such as Arlington and Fort Worth also embrace a high percentage of obesity rates. The risk of having other diseases is high in the DFW area, diseases such as, high blood pressure, type 2 diabetes, asthma, and heart diseases that are related to obesity. DFW area is an auto-dependent area, but public transportation is available. Although, many communities are served via public transportation, still; these communities have contained a high rate of obesity.

In this paper, we investigate the reason behind the increase in the obesity rate in DFW, even though, cities in the DFW area adopted many projects to promote healthier communities still the rate of obesity is increasing every year. As part of our research, we examine socio-economic, socio-demographic, and built environment characteristics to conduct the results of this research. We will use data collected from CDC, 500 cities, and The Behavioral Risk Factor Surveillance System (BRFSS) for public health data, and census data for examining socio-economic, socio-demographic. Cities' land use data is collected through cities open data and joined using GIS.

As a result, we expect income and race have a high impact on public health. Besides, the built environment is the most important factor that affects the lifestyle of an individual causing health issues.

The relationship between the built environment and public health has been investigated a lot in different cases. However, each research is a different case with different scenarios. Similar to these studies, our research is unique due to the attributions of this paper.

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Key Words: Public Health, The Built Environment, Obesity

SEEDS OF RESISTANCE: COMBATING SPATIAL INEQUALITY WITH COMMUNITY URBAN GARDENS

Abstract ID: 1341
Individual Paper Submission

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My work explores how urban community gardens can be spaces of social and environmental justice in communities of color. Santa Ana, California is the site of the most intense political activity in Orange County –over the past 40 years the Latinx population has been labeled as deviants and undesirables faced with a changing political, social, and physical landscape. In his work on Santa Ana, Gonzalez (2017) describes how redevelopment projects for housing, shopping centers, and transportation have "routinely spatially alienated Latina/o, the working class, and immigrant residents" of Santa Ana and reshaped the built environment. SanTana's working-class and immigrant residents have demonstrated resiliency despite the challenges facing their communities through activism and community organizing. The grassroots movements in Santa Ana have developed strategies to not only resist, but also adapt to neighborhood changes. This has resulted in community groups taking different approaches to combat the combined threat of gentrification (unwanted development and displacement) and racialized anti-immigrant policies.

One approach has been to create urban community gardens with the specific purpose of empowering the Latinx community of central Santa Ana by claiming their rights to space in the city to provide healthy and culturally sustaining foods, policy advocacy, and promote alternative economic models (Mares and Peña, 2010; Hondagneu-Sotelo and Ruiz, 2014). The urban garden is called CRECE (Community in Resistance for Ecological and Cultural Empowerment), and it serves as a public arena or outdoor civic center where ecological sustainability, community activism, and health promotion are all intertwined as community partners visit and collaborate with CRECE's gardeners and volunteers. Together this network of organizations, universities, POC farmers, and residents bring their unique experiences, skills, and knowledge to the space.

The garden has become a symbol for both resistance and healing in Santa Ana, it is a unique space because of its ability to connect personal empowerment and healing with broader political issues. It does this by introducing residents to agricultural practices that are rooted in ecological sustainability and cultural empowerment strategies situated in the larger political context. The garden has also become a space of depoliticization, a state that some consider to be apolitical, political abeyance, or even post political (Uitermark and Nicholls, 2013). Alternatives to resistance strategies are those that focus on solutions without political motivation such as growing fruits and vegetables for a community in need. While most scholarship describes depoliticization as something that replaces or is the opposite of direct resistance, in fact, in certain conditions alternatives and direct resistance combine into something that can only be described as politicization (Moor, 2020). These conditions include a more compact city, large enough to provide significant resources but small enough where daily interactions between fellow activists are far more common and resources are shared and utilized, compared to the spatial limitations of a large dispersed city where activists have a lot more ground to cover and don't interact as often or as meaningfully as a result.

The case of Santa Ana provides an opportunity to investigate: how gentrification has impacted local community strategies and narratives in urban gardens of Santa Ana? And, how has the community resisted and adapted to unwanted changes? As a mid-sized city by US standards, Santa Ana provides a window into a community in resistance that has embraced alternative strategies (depoliticization) along with direct resistance (i.e. non-violent protest, marches) to combat the real and perceived threat of displacement, not as an apolitical act, but as a political act.

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Key Words: urban politics, social movements, community gardens, food sovereignty, gentrification

PHYSICAL ENVIRONMENT VS. INDEPENDENT MOBILITY: EXPLORING CORRELATES FOR CHILDREN'S INDEPENDENT TRAVEL AND UNSUPERVISED OUTDOOR PLAY
Abstract ID: 1361
Individual Paper Submission

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Background: Children's independent mobility (CIM) refers to their moving around in neighborhoods without adult accompaniment and can be further specified as the freedom to travel to places (independent travel) and play outdoors without adult supervision (unsupervised outdoor play) (Hillman, Adams, & Whitelegg, 1990). CIM is important to children's physical, mental, and social development (Kyttä, 2004; Mackett, Brown, Gong, Kitazawa, & Paskins, 2007) and helps to create a stronger sense of community (Prezza & Pacilli, 2007). However, studies have shown rapid declines in CIM in many developed countries (Mackett et al., 2007; Page, Cooper, Griew, Davis, & Hillsdon, 2009). Meanwhile, compared to adults, children rely more on their immediate surroundings such as home and neighborhood environments due to their physical and mental immaturity. It is thus essential to better understand the underlying correlation between housing and neighborhood environments and children's independent mobility.

Objectives: This study examines the impacts of housing and neighborhood environments on two modes of CIM—children's home-based independent travel to non-school destinations and unsupervised outdoor play in home neighborhood while taking individual and social factors into consideration.

Methods: From November 2018 to July 2019, a bilingual parent/guardian survey was delivered to public elementary schools (K-6) in the Austin Independent School District, Texas, to collect information about children's travel and play, housing and neighborhood environments, as well as relevant personal and social factors. Geographic Information Systems (GIS) and field audits are used to capture neighborhood environmental features according to the home addresses provided by the participants. Logistic regression models were employed to predict CIM using multi-level factors.

Results: For 3-6 graders (N=364), about two thirds of the parents would allow children's independent travel to non-school destinations (68.2%) and home-based unsupervised outdoor play (64%), but mostly limited to a very short distance (5-minute walk) and a few destinations (e.g. friend's or relative's house). For physical environment, stranger danger in neighborhood was a significant negative correlate for both modes of CIM, while presence of apartment common areas was a negative predictor to unsupervised outdoor play. Other significant personal and social factors were also identified.

Conclusions: Findings showed the impacts of physical environments on CIM and implied the potential of relevant interventions. Follow-up analysis will include more objective environmental variables generated from GIS analyses and field audits.

Implications: This study will identify the essential housing and neighborhood physical environmental

factors that significantly influence children's home-based independent travel to non-school destinations and unsupervised outdoor play. It is expected that identified essential environmental features could be developed into operational design strategies and contribute to current conceptual frameworks and guidelines for child-friendly environments. It is also expected that the findings will be informative to policy-makers, planners, or architects in guiding future housing and neighborhood programs to create more child-friendly environment.

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Key Words: Independent mobility, Physical environment, Children, Independent travel, Unsupervised outdoor play

IMPACT OF AIR POLLUTION ADAPTATION MEASURES ON THE PUBLIC HEALTH
Abstract ID: 1379
Individual Paper Submission

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Air pollution, specifically the particular matters (PM) in South Korea deserves a greater attention, of which the level is ranked as second in the OECD countries. In order to reduce the negative impact of air pollution, the Korea government has implemented a number of measures such as air pollution warning system, air quality monitoring system, total pollutant load management system, and low NOx burners supply system. Among those, one of the most direct approaches is the text message of PM watch and warning to individual cellular phone. While it is widely used adaptive measures in this matter, and requires enormous budgets, the effect has not been clearly known.

In this backdrop, we aim to assess the impact of an important air pollution adaptation measure, the text message of PM warning and watch, on human health. We use the generalized additive model (GAM) to decipher non-linear relationship between the PM level and the number of patients of respiratory symptom, with the question variable indicating whether the warning alarm went off. Since the health effect varies depending on demographic, geographical and socioeconomic characteristics, we use the medical big data provided by the Health Insurance Review and Assessment Service, to control for patients' personal characteristics such as gender and age and administrative district attributes. The spatial scope of the study is South Korea, and the temporal scope is from January 1, 2015 to August 31, 2019. This research will evaluate the current warning system, and discuss the way to improve such direct top-down communication in the preventive measures for public health and promote public awareness.

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Key Words: Public Health, Air Pollution Adaptation Measures, Generalized additive model

THE EFFECT OF INDOOR GREEN SPACES ON CHILDREN'S EMOTION- AN EEG EXPERIMENT IN AN ELEMENTARY SCHOOL IN SEOUL, SOUTH KOREA
Abstract ID: 1381
Individual Paper Submission

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A population decline has been an increasing worldwide concern. Particularly in the South Korea (Korea hereafter), the total fertility rate was at record low - 0.98 – in 2018, which is much lower than the replacement rate of 2.1, meaning the current level of population would not be sustained in the future. Among the OECD member countries, Korea has been ranked as the fastest aging country, based on the projection from the 15.5 percent share of the elderly (65+). There is no exception for school age population. The current number of elementary schools students is only 40 percent of that of the 1965 in Korea. Out of the 6,001 elementary schools in the country, approximately 25% are classified as "small-school (total 60 students or below)", and 211 schools has been closed or merged to other schools. The reuse of those disused school building has not been discussed fully, thus the mere abandonment of those is common, generating nuisance to the neighborhoods.

At the same time, the child education has always required an attention. It is reported that the elementary school students in Korea has experienced lack of opportunities to engage in social interactions with their families and friends through leisure activities and events, compared to other countries such as Italia, Sweden and United Kingdom. Due to the excessive competition for academic achievement, their outdoor physical activities has been reduced while the mental strain or emotional tension has been increasing.

The Korean government has attempted to resolve the two aforementioned issues by converting the extra spaces from the reduction or closure of schools to some sorts of playground for the students. One of the examples is an indoor green space called MaeumFull (meaning mind-full) classroom installed in Jeon-il middle school, located in Seoul, the capital city of Korea. The project includes a simulated rain garden, resting area and gardening practice spaces.

This study aims to assess the effect of those indoor green spaces on students' emotion in class, more specifically, the status of "engagement," "valence," "meditation," "frustration," "focus," and "excitement" when they study, using mobile electroencephalography (EEG). Within the 20-minute experiment, the first ten minutes will be break time between classes and the second ten minutes will be the class time. Among the 50 participants, the half would spend time in the indoor green space, doing gardening activities or meditation, while the rest would spend time in elsewhere, doing other kinds of activities that requires equivalent amount of physical and mental exercise. The difference in each emotional indicators will be measured with analysis of covariance (ANOVA).

This study will shed light on the literature regarding the urban health and green resources, emphasizing the new analytical techniques, and will provide useful reference to urban planners on a mission of effective reuse of school facilities.

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Key Words: children's emotion, behavior, electroencephalogram

TRACK 9 – POSTER ABSTRACTS

A SUSTAINABILITY APPROACH TO FOOD SYSTEM PLANNING THROUGH K-12 PUBLIC SCHOOL AGROECOLOGICAL INITIATIVES IN PUERTO RICO
Abstract ID: 396
Poster

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Agroecology, a science, a practice, and a movement (Altieri, 2002; Altieri & Nicholls, 2004), has been proposed in Puerto Rico (PR) as an alternative to the colonial and corporate food system that prevails in the country. This movement is promoting an appreciation for local knowledge, culture, natural resources, and ecological relationships among healthy soils, crops, people, and communities (Ferguson et al., 2019). In PR, its development is the result of the efforts of civil society organizations and, specifically, young local small-scale farmers. As attempts to scale agroecology continue to emerge around the world (Mier et al., 2018), more countries use agroecology as a tool within state institutions, such as educational institutions, to transform the current input-intensive industrialized food system with a knowledge-intensive small farming system (Altieri, Rosset, & Thrupp, 1998). This research focuses on the agroecological initiatives that are emerging within the K-12 public education system in PR, filling the gap in the current understanding of which are the sustainability approaches needed to scale agroecology in these institutions. A descriptive case study method was used to conduct semistructured interviews with four selected schools. These knowers and experts should inform and guide sustainable food system planning efforts and future changes to public policy for scaling agroecology in K-12 public schools in PR. These facilitators and organizers shared their projects and their sustainability challenges, which allowed for the development of sustainability indicators to guide school food system planning for these and other schools. With the lack of food and agriculture literacy in the country, diet-related maladies, and food system inequities, these schools are paving the way for a food system transformation in PR.

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Key Words: School food system, Agroecology, Sustainability

FOOD ACCESS AND RACIAL EQUITY IN THE GREATER HOUSTON REGION
Abstract ID: 610
Poster

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Access to food is an important factor for deeming a population or community socially vulnerable (Cutter, Boruff, & Shirley, 2003) Communities facing a disruption to this access in times of disaster exacerbate the vulnerability of those with limited access prior to a disaster (Biehl, Buzogany, Baja, & R, 2018). Previous research that utilizes Geographic Information Systems (GIS) to study food networks suggests that surveying the availability of commercial establishments in areas with great or limited access to food can lead to greater understanding of equity (Forsyth, Lytle, & Van Ripper, 2010).

This research targets the Greater Houston, Texas Region to determine how equitable food access is to communities with people of color. Nine counties in the greater Houston area were selected. Five of these counties have populations of 500,000 or more: Harris County, Fort Bend County, Montgomery County, Brazoria County, and Galveston County. Four counties have populations of less than 500,000: Jefferson County, Liberty County, Waller County, and Chambers County. Grocery stores and food bank data were collected for each of the counties. Data from the United States Census was extracted about people of color and access to food. All three sources of data were mapped using GIS to establish patterns to score the equity of access to food.

These county maps were presented in a series of community meetings to discuss post Hurricane Harvey and how to make the region more equitable in times of disaster. Community residents helped provide local knowledge on access to food in the immediate aftermath of disaster. Counties with populations less than 500,000 faced more hurdles on accessing food than the more populated counties. The maps further illustrated to residents the disparity of vulnerable populations having access to food.

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Key Words: Food Access, Racial Equity, Food Desert, Region

ANALYSIS OF RETAIL FOOD ENVIRONMENTS SURROUNDING SCHOOLS AND NEIGHBOURHOOD SOCIOECONOMIC STATUS

Abstract ID: 701
Poster

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Healthy built environments are comprised of physical and social environment features, including food systems and retail food environments. As an emerging subfield of planning, food system planning identifies the need for knowledge and expertise on food systems within the planning profession (Soma & Wakefield, 2011). At the intersection of equity and the built environment, planners and researchers consider the unique needs of vulnerable populations, such as youth, when considering how to effectively and equitably intervene on the built environment to promote well-being. Extant studies that assess retail food environments surrounding schools in relation to neighbourhood socioeconomic status present inconsistencies among the findings (Kestens & Daniel, 2010; Seliske et al.,2009). Moreover, diverse municipal food policies aimed at increasing the nutritional quality of the food supply have been described (Mah et al, 2016). One planning policy proposes to reduce individuals' exposure to sources of non-nutritious foods (e.g., fast-food outlets and convenience stores), for example, through zoning restrictions. The first and most well-cited study to evaluate the impact of a zoning restriction on fast food outlets found no impact on population health outcomes (Sturm & Cohen, 2009), but this was likely due to the fact that the policy did not actually change population-level exposures to fast food outlets. Several communities in Canada are currently considering zoning restrictions to ban fast-food outlets and convenience stores from opening within walking distance (800m – 1km) of schools. The purpose of this research is to estimate the population-level exposure of youth to fast-food outlets and convenience stores under a number of different policy scenarios (800m ban, 1km ban, no policy) using the Region of Waterloo, Ontario, as a case study. Given the importance of equity in considering planning policy impacts, we also seek to explore how such a policy might differentially impact low- vs. high-income schools. We ask: "How would food environment exposures be projected to change if an 800m and 1km buffer fast food and convenience store ban was implemented surrounding schools at 1 year, 5 years, and 10 years post-implementation vs. no policy implementation?", and "How would these projected changes differ by the proportion of low-income children at secondary schools in the Region of Waterloo?" This study uses data from Ontario's ministry of education (secondary school locations, proportion of students from low-income families), the Region of Waterloo Public Health Department (public health inspection data on food outlet locations, food outlet types), and the local government (projected population growth) to answer these two primary research questions. Using ArcGIS, we will complete an overlay analysis of "unhealthy food exposure" using the Association of Public Health Epidemiologists of Ontario's school food environment indicator and school-level income (defined as proportion of students from low-income households). We will create separate maps for 1 year, 5 year, and 10 year "unhealthy food exposure" assuming that the policy would contain a grandfather clause for existing food businesses (similar to existing policies), and assuming a business failure rate of the national average. Finally, we will compare mean exposures for secondary school students over time and by school-level income to explore the equity implications over time.

Given that dietary risks currently comprise the largest global burden of morbidity and mortality, and that youth are quickly developing eating patterns that can track throughout their lives, this study examines potential equity impacts of a specific planning policy to improve population diet. Findings from this study will be of interest to a variety of different audiences, including planners and public health practitioners. Findings can also inform policy makers about projected impacts of implementing food outlet zoning restrictions as well as contribute to the existing research on food environments surrounding schools.

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Key Words: Equity, Policy Integration, Community Health, Food Systems Planning, Youth

A SOCIAL NETWORK CONCEPTUAL FRAMEWORK FOR CARRYING OUT ESSENTIAL EVERYDAY ACTIVITIES IN "BLUE SKY" AND DISASTER SCENARIOS
Abstract ID: 745
Poster

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This study comprises the development of a conceptual framework for understanding how people accomplish necessary everyday activities from a social network perspective; that is, we seek to understand the role that social networks play in the exchange of knowledge, resources and social support that enable the successful completion of essential everyday tasks in a community setting. This conceptual framework has been developed to encompass both "blue sky" (normal, everyday) circumstances as well as disaster scenarios in which access to certain resources and services might be severely limited. Specifically, we ask what roles social networks play in helping people to accomplish essential everyday activities, and how might this change in a potential disaster scenario. These roles are illustrated conceptually and then tested against data gathered from a community resilience sample survey of three characteristically different communities in Washington State, providing a real-world "ground-truthing" of the conceptual analysis.

Increasingly, our society relies on brittle infrastructure – technologies that are susceptible to system-wide failure (Townsend 2013). In disaster scenarios, the failure of brittle systems becomes more likely, with ripple effects that extend far beyond the immediate goods and services such systems are designed to provide. Social capital – social support that is accessed via social ties, or interpersonal relationships – can serve as a kind of "backup" for physical infrastructure when it fails (Freitag et al. 2014). Strong social networks have the potential to help communities remain functional during times of disaster and to thrive under normal circumstances (National Research Council 2009). However, social network analytical methods are not often applied in urban planning research (Dempwolf & Lyles 2012). In addition, widely-used tools for gathering data about disaster preparedness do not necessarily take social networks into account. For example, FEMA's National Household Survey (2017) focuses almost exclusively on disaster preparation in terms of individual- or household-level actions and does not address specific preparedness or mitigation actions that could be taken at the community scale or in cooperation with one's neighbors. Integrating the collection and analysis of disaster preparedness and social network information at the community scale constitutes a novel approach to researching the ways in which community resources and relationships can contribute to disaster preparedness.

We approach this study first through the systematic analysis of a set of essential everyday activities (cooking, bathing/washing, communication, transportation, maintaining health, obtaining shelter) to understand the potential contribution of social networks to each of these activities in the context of both

normal and disaster circumstances. This conceptual framework is described in a series of illustrative diagrams that highlight the interdependencies of different resources (e.g., communication and transportation networks) as well as the role(s) of social ties. The framework is then tested for robustness using social network and disaster preparedness data gathered from three communities, which includes information on social ties, trust, and willingness to share resources. The study concludes with a set of recommendations for future planning research and practice based on the conceptual framework and illustrated with the results of the sample survey and focus groups. Practical contributions include providing a new perspective on planning activities and initiatives, such as community events and programs that promote social connectivity, as co-beneficial in terms of building community capacity and supporting disaster preparedness.

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Key Words: community resilience, social networks, disaster preparedness, social capital, interdependent infrastructures

SPATIAL PATTERNS OF LOCAL HEALTH INEQUITIES
Abstract ID: 790
Poster

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There is a growing interest in health equity as health equity is central to promoting social justice and protecting human rights (Sen 2002). As health inequities result in significant socioeconomic costs both to individuals and societies and can be a major treat to social stability, a number of studies have examined the underlying factors and outcomes of health inequities (e.g., Shavers and Shavers 2006). However, there are only a few studies incorporating spatial information in health inequity studies although taking a spatial approach has been emphasized in public health (Koschinsky 2013). Prior studies also do not take a comprehensive approach by comparing different causes of health inequities and analyzing health inequities with a longitudinal analysis.

This study aims to examine health inequities by analyzing spatial patterns of local death rates. In this regards, this study asks the following research questions: how are the spatial patterns of local health inequities? Do the spatial patterns of local health inequities by death cause? Have the spatial patterns of local health inequities changed over time?

The principal dataset is the death data that the Statistics Korea collected from death notification filed at local administration offices and death medical certificates issued by physicians. We analyzed spatial patterns of local health inequities by using the crude death rate (number of deaths per 100,000 people) and the death rates of five major death causes in Korea, which are malignant neoplasm (cancer), heart disease, cerebrovascular disease, pneumonia, and intentional self-harm (suicide), at the local level in 1998, 2008, and 2018. We also analyzed spatial patterns of the change in local health inequities in two time panels,

between 1998 and 2008 and between 2008 and 2018. To analyze spatial patterns of local health inequities, we employed spatial analyses. We first calculate Moran's I statistic that measures spatial autocorrelation among localities based on death rates. Then, we employ local indicators of spatial autocorrelation (LISA) to identify specific locations of spatial clusters based on local death rates. Finally, we compare the spatial patterns of local health inequities that differ by death cause and time point. The empirical results show that localities with high and low death rates form clusters with other high and low death rates, respectively, which suggests that there are significant health inequities across the localities and time.

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Key Words: health, equity, death, spatial analysis

THE RETAIL FOOD ENVIRONMENT IN TORONTO ON
Abstract ID: 963
Poster

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In Canada, dietary risks comprise a larger share of morbidity and mortality than any other risk factor (Afshin et al., 2019). Inadequate fruit and vegetable consumption, for example, cost an estimated $3.3 billion per year between direct healthcare costs (30.5%) and losses in economic productivity (69.5%) in Canada (Ekwaru et al., 2017). Evidence suggests that the retail food environment (RFE) impacts the accessibility, availability, and adequacy of food within a community or region, and may be an important determinant of population health (Minaker, 2016). RFE research and policies have traditionally been concerned with geographic access to food and identifying food deserts – low-income areas with limited access to nutritious food sources or food swamps – marginalized areas saturated with fast-food outlets or convenience stores (Minaker, 2016). However, recent research suggests that food mirages – areas in which healthy food outlets appear plentiful but remain economically inaccessible for low-income households – may be a more appropriate metaphor for understanding population food purchasing and dietary intake (Minaker, 2016). Breyer and Voss-Andreae (2013) theorize that gentrification may lead to the emergence of food mirages, suggesting that healthy food access may be constrained by urban renewal. Within the contexts of rapid global urbanization and dietary impacts on human health, understanding processes by which urbanization and food mirages are linked is a worthwhile endeavour. Extant research often ignores economic dimensions of food access and excludes non-traditional food stores like specialty or ethnic food stores where lower-income households may shop for food at discounted prices (Wiebe & Distasio, 2016). Moreover, over 500 measures of the food environment currently exist, and different assessments suggest inconsistent program or policy interventions to varying degrees of effectiveness (Minaker, 2016). This research project asks the questions: "What is the existing state of the RFE in suburban and urban areas in Toronto ON?" and "What is the link between urban renewal and the emergence of food mirages in Toronto?" This study will leverage secondary geocoded data from the Toronto Healthy Environments Information System (public health inspection data for all retailers selling food in the city) to map the RFE using network distances from dissemination areas (DA) and traditional (e.g. grocery stores) and non-traditional (e.g. independent, ethnic or speciality grocery stores) food retailers. A social deprivation index will be created and applied for each DA using select variables available from Statistics Canada's 2016 census data including: median household income, unemployment rate, highest level of education attained, main mode of commuting, and visible minority. Index scores will be assigned to DAs to compare with geographic access to food retailers. To assess urban renewal as a causal factor of food mirages, changes in the following measures will add another layer of data across

RFE: housing prices, median household income, and increases in college- or university-educated individuals between 2006 to 2016 using Statistics Canada's census data and available real estate data.

Results from this study will contribute to a better understanding of population diet and can be used as supporting evidence towards local government policies and interventions to improve dietary intake. This study will also identify real costs and barriers to a nutritious and economically accessible diet, target DAs in need of support, and strengthen partnerships between planners and allied professionals. Lastly, this research will broaden the current state of food environment literature by considering alternative conceptualizations of the RFE, and specifically advance discussion on food mirages to explore the potential impact of urban renewal (i.e. gentrification) on food access.

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Key Words: food access, food mirage, gentrification, socioeconomic status, land-use planning

ASSOCIATIONS BETWEEN AVAILABILITY OF FARMERS MARKETS AND FOOD ACCESS: EVIDENCE FROM URBAN AND RURAL AREAS IN WISCONSIN
Abstract ID: 1093
Poster

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Farmers market is a great source of fresh fruits, vegetables, and other healthy foods in the United States. Unlike other food destinations such as supermarkets, supercenters, or large grocery stores, farmers markets provide food from agricultural producers directly to consumers. However, farmers markets benefit various socio-demographic groups differently (Singleton et al., 2015; Young et al., 2011). Current food access measures are mainly based on distance to supermarkets or food stores, whereas farmers' markets are not included in the food access measure (Ver Ploeg et al., 2015). There is still no clear evidence with regards to what impacts farmers markets have on the food accessibility in the United States.

This study aims to examine factors associated with food accessibility, and whether the availability of farmers market has a significant association with food accessibility in the state of Wisconsin at the census tract level. Data is spatially combined from the United States Department of Agriculture (USDA) Food Access Research Atlas and the USDA farmers' market directory.

Logistic regression models based on 306 farmers markets and 1,395 tracts are applied to examine relations between food access and four main explanatory variables, including population, household vehicle ownership, Supplemental Nutrition Assistance Program (SNAP) benefits, and availability of farmers markets. A geographically weighted logistic regression model is also applied to examine whether the factors correlated with food access have spatial variations across the state of Wisconsin.

The results show that in urban areas, food access is associated with less population and less household vehicle ownership at the census tract level. In rural areas, food access at the census tract level is significantly positively associated with population, and negatively correlated with SNAP benefit. However, availability of farmers market generally does not have a significant relation to food accessibility in both urban and rural areas. This result implies that farmers markets contribute little to community's food demand. There is a need to reframe the value of farmers market as a community-level strategy to improve healthy food access in the United States.

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Key Words: food system, community health

DIAGNOSING ACTIVE AND HEALTHY COMMUNITY: NEIGHBORHOOD PHYSICAL ENVIRONMENT AND SOCIAL EFFECTS
Abstract ID: 1314
Poster

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The research analyzes the interconnectedness of physical environment and place-based social effects in a neighborhood. The condition of a neighborhood built environment significantly affects physical activities, perception and the quality of life for residents. How neighborhood environment is designed and managed can have both positive and adverse effects on residents' behaviors, social activity patterns and social climate. Theoretically, safe, healthy and walkable neighborhoods are expected to increase the chance of social interactions and enhance the sense of community, which leads to the activation of social capital and civic participation. This paper empirically examines the associations among conditions of built environment and neighborhood social outcomes such as social capital, civic participation and crime.

The research method includes a wide array of objective measures available for city-wide analysis as well as field observation methods for the street level analysis. GIS provides useful analytics to analyze environmental inventory of neighborhood features and community design types. A novel approach is introduced to create the social capital composite index to contain spatial dimension of place based social capital. This work also develops and uses environment audit tools to measure the conditions of residential environment and walkable environment features. The field observation method provides detailed measures of both physical conditions and social patterns along street segments. The study area is the city of Lincoln, Nebraska. Ten neighborhoods are selected by the community design types, walkability, and neighborhood characteristics.

The findings clearly show that built environment conditions are strongly associated with place based social capital and neighborhood social outcomes such as civic participation and crime. To identify implication of our findings for policy, the paper discusses environmental strategies to promote positive neighborhood effects and reduce adverse effects.

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TRACK 10 – PLANNING EDUCATION & PEDAGOGY

TRACK 10 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS FOR SESSIONS

REFLECTIONS ON CRITICAL INTERNATIONAL STUDIO PEDAGOGY
Pre-Organized Session 82 - Summary
Session Includes 711, 712, 713, 714, 715

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Presenters in this session reflect on the role of critical international planning studios in furthering global sensibility but also social justice in planning education. Beyond the more tangible "products" developed for the mutual benefit of students and community partners—data and skill sets, strategy documents, and the like—global studios may also further students' critical problem-solving skills, foster their reflexivity, and sharpen their understanding of the potentially decolonizing role of planning. By developing students' critical awareness of the role of planning in complex urban environments characterized by informality and uneven relations of power, educators may better prepare students to build partnerships for just and insurgent planning while contending with epistemological differences.

Objectives:

- Improve studio pedagogy in international contexts.
- Develop equity focus in international studio pedagogy.
- Understand role of international studios in planning education.

RELATIONALITY AND EMERGENCE IN GLOBAL PLANNING STUDIOS: CRITICAL REFLEXIVITY FOR YOUTH ENGAGEMENT IN INFORMAL SETTLEMENTS
Abstract ID: 711
Abstract within Pre-Organized Session 82

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A relational perspective on global planning education calls for critical pedagogies that foster critical reflexivity, not merely among students but also educators, studio partners, and other interlocutors. However, creating productive spaces for such critical reflexivity is challenging in global planning studios, where deeply reflective engagements are contingent on time and funding limitations and limited by epistemological, linguistic, and other differences (Levkoe et al. 2020). Such studios often take place in informal contexts characterized by fractured and opaque governance arrangements, involving unpredictable encounters with actors whose roles, political influence, and interests are unclear and changing and whose activities cross governance and spatial boundaries. Given such complex relations of power, global planning studios can be productively thought of as emergent and relational, contingent on unpredictable encounters that are in turn shaped by ever-shifting governance assemblages. Such a critical-pedagogical perspective on studios as evolving and relational calls for pedagogical strategies that engage studio, project partners and residents in continuous reflection, not merely in formal sessions but also in informal and impromptu dialogical spaces. In particular, adaptive approaches to critical reflexivity are

important in contexts characterized by great inequity and marginalization, where students, faculty, and studio partners seek to engage with traditionally excluded groups, such as children and youth.

Youth in informal settlements are often stigmatized as trouble-makers, and social barriers prevent them from engaging in participatory planning and other visioning processes (Hardoy et al. 2010). In the case presented here, students used a variety of arts-based methods to engage youth in the informal settlement of Los Platanitos, Dominican Republic in research, visioning, and plan-making activities (Sletto and Diaz 2015). These activities emerged in support of a broader effort to address the severe challenges stemming from inadequate storm water infrastructure and lack of municipal solid waste collection in Los Platanitos, were informed by complex relationships among numerous governance and civil society actors, and coincided with students' own reflection through "everyday talk" (Kohl and McCutcheon 2015) during the course. The critical-pedagogical efforts with youth illustrate the utility of an emergent and relational approach to reflexivity, both as a means of fostering the critical co-production of knowledge by marginalized residents but also of developing reflective global planning practitioners (Schön 1987).

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Key Words: Critical reflexivity, Critical pedagogy, Global planning education, Informal settlements, International planning

REDRESSING IMPLICIT AND EXPLICIT LEGACIES OF POWER IN INTERNATIONAL PEDAGOGY
Abstract ID: 712
Abstract within Pre-Organized Session 82

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As urban planning educators, we often emphasize that the "public" is not a monolithic singularity but very much a plural. Working in the "public interest" necessitates this understanding of the diversity of "publics" and the importance of recognizing how our studies, plans, and interventions interact with, shape, and are shaped by different stakeholders' priorities in the public sphere. Within the context of international studios or practica, there is an extra layer of "public(s)" at the planning table—namely ourselves. Much as international development practitioners bring their own positionality and epistemologies of knowledge to bear on the projects they forward on the ground in the name of development, we who engage in international studios and practica do the same in the name of pedagogy and experience. Our epistemic selves, however, have rather sticky foundations that can be problematic in practices abroad. Watson (2003), Sihlongonyane (2015), and Winkler (2018) all warn about the difficulties of planning and the conflicting rationales at play when local planners, in their accounts from South Africa, engage with communities whose values and ideals fundamentally differ from that of public planning authorities. When international practica and studio enter local spheres of conflicting rationales, there is even more work to be done to dislodge Western-centric and colonial legacies from engagements. Indeed, these realities often lead educators and students alike to question the rationale for such international educational work.

In this paper, I explore under what conditions international studios and practica can work to directly address and mitigate both the implicit and explicit legacies of uneven power and diverse epistemologies of knowledge. I leverage the experience of leading an international practica between graduate students at the Massachusetts Institute of Technology and undergraduate students at the University of Eduardo Mondlane in Maputo, Mozambique around youth advocacy for water, sanitation, and environmental justice in the Mozambican capital. The case is one with a clear power dynamic, but one which also offered several opportunities to directly reflect upon and work to address perceived and real imbalances between all stakeholders involved—among students, between students and faculty, and of course with local residents with whom we worked. The paper explores efforts to "decolonialize" the practica in a consideration of everything from financing, logistics, grounded fieldwork and analysis, to client and partner relationship management, pedagogy, and experiential opportunities. Toward that end, I especially leverage the reflective practice exercises that students from both MIT and UEM engaged with, as well as my own participation therein, in deciphering evidence for what were more and what were less effective strategies for decentering the international studio from legacies of colonialism.

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Key Words: Pedagogy, Equity, Decolonialization, Practica

CROSSING BOUNDARIES EVERYDAY: ONE PEDAGOGICAL EXERCISE AT THE NILGIRIS FIELD LEARNING CENTER

Abstract ID: 713
Abstract within Pre-Organized Session 82

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Every other morning for seven weeks, a group of students at the Nilgiris Field Learning Center (NFLC) in the hill-town of Kotagiri start the day with a "Crossing Boundaries Exercise". The students include young people from surrounding adivasi communities and an equal number of Cornell undergraduates, who are spending 15 weeks at the NFLC, a transdisciplinary collaboration between Cornell and the Indian NGO, the Keystone Foundation. Dubbed the CBE, these exercises operate at multiple registers: at one level they are situated language learning (Tamil/English) around issues studied at the NFLC. At another level, CBEs make visible deep-rooted cultures that shape large societal and small everyday practices. In doing so they open peepholes into an other's world, even as the boundaries of one's own become clearer. Some CBEs include a field method used in the community-based research projects that take up the second half of the semester. The issues that CBEs pry open are essential to the goals of capacity building of community members from different groups at social distances from each other, as well as researchers, future policy-makers, and glocal citizens who need to come together to understand, plan for, and manage the fast-changing complex ecological landscape of the Nilgiri Biosphere Reserve (NBR). Describing the structure and outcomes of this pedagogical experiment allows this paper to get to the heart of issues that shape and condition interaction and engagement across boundaries – processes that are central to equitable planning in complex settings.

The NBR provides such a complex planning context. A global ecological diversity and endemism hotspot spanning 12 districts in three states, it contains an astonishing diversity of cultures and communities including more than 30 adivasi groups who, at about 16 percent of the total NBR population of 1.2

million people, are among the region's poorest and most marginalized. The adivasi make their livelihoods through a combination of strategies that include subsistence agriculture, growing small quantities of commercial crops, wage labor in plantations and other regional industry, and gathering non-timber forest produce for sale and consumption. As important is rapid small town urbanization and the challenges and opportunities this presents. For planners, the NBR presents unique governance challenges with multiple states and different political economic systems at work. Several institutions and organizations play a role in every district within the reserve: Forest and Wildlife Conservators; District Administration with elected representatives and administrators; the presence of Central and State Government agencies and programs; social groups based on caste, religious, or occupational affinities; numerous NGOs; and networks of businesses in a thriving economic base of tourism, expanding plantations, and growing industrialization that favors outsiders and urbanites. In addition to these formal organizations and the associated divisions of labor and authority, there are the interrelated informal institutions that structure locally embedded economic relations in communities, landscapes, and sectors.

The NFLC is intentionally structured to cut across boundaries that stymy the pursuit of sustainable development. At the NFLC, research meets practice; scientific theory engages indigenous ecological knowledge; biodiversity and socio-cultural diversity are not separate spheres; rural and urban are a linked continuum; and the health of the individual is understood as rooted in a healthy community. Is the NFLC successful? Assessment results make us optimistic on student learning outcomes. On the research front, we are seeing movement on questions that have stared at us from the ground for some time. In this presentation, however, we will focus on one pedagogical exercise that is integral to how we have operationalized this ambitious learning and research agenda. The CBE epitomizes the boundaries the NFLC community seeks to transgress.

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Key Words: pedagogy, sustainability, transdisciplinary, collaboration, participatory-research

SEEKING HOUSING JUSTICE AND ENVIRONMENTAL SUSTAINABILITY VIA INTERNATIONAL SERVICE LEARNING PLANNING STUDIOS
Abstract ID: 714
Abstract within Pre-Organized Session 82

PIMENTEL-WALKER, Ana Paula [University of Michigan] appiment@umich.edu, presenting author

The fight for housing rights and environmental justice and sustainability is one of the most pressing planning issues. The question for US based urban planning programs that run international service learning studios is to engage students in a collaborative and equal manner with client-partners from another culture. The goal of global learning via planning studios should be to   unpack complex problems associated with power imbalances and to co-produce deliverables that will enhance the existing capacity of client-partners to effect positive change.

International service-learning studios with an explicit social justice orientation can prompt students and

faculty to reflect on how their actions may be reproducing unequal power relations (Mitchel 2008). The instructor's choice of partners who will co-design students' deliverables plays a crucial role in the transformative potential of the proposed project. The choice of deliverables agreed between faculty and partners should allow for students to build relationships that produce spaces of invented planning practice as opposed to spaces of invited planning practice (Miraftab 2009; Sletto 2013).

This paper provides critical reflection of four urban planning capstone projects in Brazil. Two of the projects partnered with neighborhood associations of informal dwellers, focusing on slum upgrading, and two partnered with nation-wide housing movements, focusing on federal low-income housing policy and legal reform. Most clash of rationalities and imbalances in decision-making power happened when establishing co-produced upgrading with informal dwellers. The logic of citizen-led upgrading and place-making diffies student knowledge about formal planning processes. By contrast, the projects that partnered with housing movements highlight different paradoxes, such as ideological disparities between partners and some students. Brazilian housing movements are influential and the leaders are organic intellectuals. Some students feel intimidated to propose alternatives, while others may insist in imposing international development logics to policy reforms. The conflicting views are more ideological than epistemological.

According to Barbara Jacoby (1996) and many others (e.g., Porter and Monard 2001), service-learning should be guided by the philosophy of reciprocity and should embody an effort to move from charity to justice and from service to the end of need. Then, the challenges are different depending on the partners. Housing movements are complex organizations, and a couple of activists may raise issues of trust and representation with an university from the Global North. Several housing leaders understand the capstone projects as a cultural exchange and are surprised to learn about the student deliverables. In deliberating whether to collaborate, housing activists weigh the benefits of the exchange and deliverables against the time commitment of intensive fieldwork visits from foreign students. By contrast, the tangible benefits of eventual funding that student projects may raise to improve the settlement make the collaboration more explicitly beneficial. Yet, past improvements, such as waste management upgrades, playgrounds, cultural centers, rain gardens and decentralized sewage are minimal compared to the needs for large basic infrastructure upgrades. Finally, students evaluate the success of the capstone project based on the client-partners' satisfaction with deliverables and the potential for implementation. Notably, epistemological and ideological differences do not play a role in students' final evaluation of the project and fieldwork experience.

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Key Words: International service-learning studio, Housing Rights, Social Movements, Global Learning and Justice, Reciprocal Exchange

COLLECTIVE RECIPROCITIES: PROBLEMATIZING INTERNATIONAL STUDIO PEDAGOGY AND PRACTICE
Abstract ID: 715
Abstract within Pre-Organized Session 82

STIPHANY, Kristine [Texas Tech University] kstiphany@utexas.edu, presenting author

International studios create epistemological contexts in communities whose building cultures are difficult to access, identify, and represent (Roy, 2009). Yet they often do so at the expense of two characteristics that are rarely considered in planning education. First, that building cultures are not comprised only of physical artifacts like housing and infrastructure, but their ongoing production that varies across time and place (Davis, 2006). Therefore, the study of built environments requires not only historical, land use, and policy analysis, but also analysis of how the studio relates to existing social and ecological contexts. Second, if studio pedagogies are to also contribute to a broader spatial politics, it means that students must critically synthesize local and scientific data into responses for emergent urban conditions (Leonelli, Rappert, and Davies, 2017; Sletto, 2013). Drawing on a sequence of three graduate studios about incremental housing in Latin America, this paper examines the interaction among studio actors, diverse pedagogical methods (field studies, peer-to-peer workshops, and reviews), and the representation of emergent building cultures in Brazil, Ecuador, and Mexico. It offers contextual, ethical, and action considerations for how planners could deepen the coproduction of conventional studio structures, including (1) multi-scalar inquiry; (2) intra and extra-studio power relations; (3) data for design decolonization; (4) critical reflexivity; and (5) public medias. Using international studios to construct an alternative epistemological context reorients urban design from form-making to the social contingencies of place, but requires curricular innovation, links to non-academic communities of practice, and a critical knowledge commons.

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Key Words: Latin America, studio coproduction, design decolonization, incremental building cultures, urban transformation

TEACHING THE URBAN: REFLECTIONS FROM EXPERIMENTS IN PEDAGOGY
Pre-Organized Session 155 - Summary
Session Includes 859, 860, 861

SAMI, Neha [Indian Institute for Human Settlements] nsami@iihs.ac.in, organizer

More than 55 per cent of the world's population now lives in urban regions, rapidly increasing in low and middle income countries (United Nations, 2018). Although cities have emerged as global economic platforms for production, innovation and trade, urban areas are more unequal now than they were 20 years ago: 75 per cent of the world's cities have higher levels of income inequalities than two decades ago (UN Habitat, 2016). Given the complex and intersectional nature of urban problems means that there is a significant extant challenge to respond with appropriate modes of practice, theoretical frameworks and pedagogical methods. New and different institutional capacities and new knowledge paradigms are therefore vital to address the sustainable and inclusive urban development, innovation and technological

opportunities of the 21st century. This panel focuses on experiments and experiences of pedagogical approaches, methods and paradigms that are emerging to teach a new generation of urban practitioners that are equipped to deal with these urban challenges, with an overarching emphasis on engaging with questions of urban equity.

Objectives:

- Pedagogical innovation

NETWORKED GRASSROOTS PEDAGOGIES FOR EPISTEMIC JUSTICE
Abstract ID: 859
Abstract within Pre-Organized Session 155

ALLEN, Adriana [University College London (The Bartlett)] a.allen@ucl.ac.uk, presenting author
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Over the last two decades, we witnessed multiple calls to rethink dominant epistemological assumptions on urban change. Arguing for a new epistemology of the 'urban', Brenner and Schmid (2015) put forward a provocative question: through what categories, methods and cartographies should urban life be understood? However, with very few exceptions, the question of whose and what pedagogies should be part of more transformative epistemic framings of the urban is rarely tackled or even raised.

The presentation addresses this blindspot through an examination of networked learning in the case of the Habitat International Coalition in Latin America (HIC-LA). Grassroots organisations, social movements, NGOs, universities and research institutions, who are members of HIC-LA, identify and value the organisation as a 'school of grassroots urbanism', which fosters pedagogies that become generative for the social production of habitat. Building on a series of in-depth interviews, document analyses and participant observation with HIC-LA member organisations, the presentation examines this 'school of grassroots urbanism' through the lens of epistemic justice (Fricker, 2007). Thereby, it reveals pedagogic tactics and strategies that enable diverse urban practitioners to call out the power and ethics of producing, sharing and using knowledge in collective learning processes.

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Key Words: grassroots pedagogies, epistemic justice, grassroots urbanism, Latin American cities

(RE)THINKING THE TEACHING OF SPATIAL PLANNING AND URBAN DESIGN TOGETHER
Abstract ID: 860
Abstract within Pre-Organized Session 155

VIDYARTHI, Sanjeev [University of Illinois at Chicago] svidy@uic.edu, presenting author

How do we teach a mixed group of physical planning and urban design students about conceiving the future of places in meaningful and collaborative ways? Where do the boundaries of these two distinct (yet closely interrelated) fields diverge and overlap? This presentation will present useful insights and lessons learnt while designing and teaching classes comprising graduate students from both Urban Planning and

Policy as well as Urban design degree programs. For example, clarifying and exemplifying that planning work seeks to anticipate and adapt for a permanently uncertain future (Hopkins 2001) while clever urban designing involves intelligent organization of physical space using efficient and aesthetic criterions (Lynch 1981) helped students visualize the importance of their collective work. Better trained professionals critical to tackle messy and complex urban issues, especially those in the global south.

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Key Words: Teaching Urban Planning and Spatial Design together

AN INTER-DISCIPLINARY SOUTHERN URBAN PRACTICE: THE IIHS CURRICULUM
Abstract ID: 861
Abstract within Pre-Organized Session 155

SAMI, Neha [Indian Institute for Human Settlements] nsami@iihs.ac.in, presenting author
MITRA, Sudeshna [Indian Institute for Human Settlements] smitra@iihs.ac.in, co-author
BHAN, Gautam [Indian Institute for Human Settlements] gbhan@iihs.co.in, co-author

Started in 2009, the Indian Institute for Human Settlements (IIHS) is an educational institution committed to an interdisciplinary, southern pedagogical praxis towards what we term as Urban Practice. Over the past five years, IIHS has received approximately 700- 800 applications annually and each year selected a class of about 30 learners through a two- step admissions process designed to curate a class that is diverse across a number of criteria. Over five iterations, nearly 150 learners have graduated from the Urban Fellows Programme, a residential, full time, taught program. This paper reflects on the philosophy and design of the IIHS curriculum and then reads its intentions and design against an ethnography of our own interdisciplinary urban research and practice, situated in (but not limited to) the global south.

In doing so, this paper is a collective reflection from our faculty on three core themes: (a) what does it mean to train urban practitioners rather than urban planners, engineers, architects, designers, sociologists or economists, to name a few of the urban disciplines and sectors that broadly constitute urban education; (b) what it means to root such a curriculum in the global south but not be limited to it; and (c) what it means to bring practice- based teaching into the classroom in terms of pedagogical methods. We focus on the elements of IIHS' curriculum framework that sought to deliver on these outcomes, and then reflect on our experiences and experiments – both intended and unintended, foreseen and urgent – on how these elements played out with our learners who themselves come from a variety of disciplinary trainings and backgrounds. As a core archive, we draw on learner reflections, incoming expectations and post-graduation career trajectories, as well as the collective conversations of our faculty meetings between each iteration of the program and during it.

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Key Words: Pedagogy, Global South, Urban Practice, Interdisciplinary, Curriculum development

TRANSFORMATIVE PEDAGOGY THROUGH STUDENT AND COMMUNITY ENGAGEMENT: INCORPORATING CRITICAL THEORY AND EXPERIENTIAL LEARNING IN CURRICULUM

Pre-Organized Session 169 - Summary
Session Includes 968, 969, 970

WONG, Karna [University of California Irvine] karna.wong@uci.edu, organizer

How can we teach students to think critically and solve problems for their diverse communities? This session explores innovative teaching methods in planning and community development. Professors who are committed to student-focused pedagogy discuss how they incorporate active or experiential learning, develop project-based assignments, and collaborate with communities to teach the next generation of planners and activists. Their teaching philosophies emphasize critical race theory, engaged pedagogy, and seamless integration of theory and practice. They will share research on topics ranging from popular education and critical theories in emerging research, case study methodology on social and environmental justice issues, and ethnography on indigenous populations. They will also discuss teaching experiences at Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), and Minority-Serving Institutions (MSIs), and each will offer lessons learned about working with indigenous and other students of color, first generation college students, and students who speak English as their second language.

Objectives:

- Integrating critical theory and experiential learning into large (over 200 students) and small courses (20 persons or less) with graduate and undergraduate students, at universities on the quarter and semester schedule.
- Sharing innovative teaching methods and projects, such as creating photo and video fieldwork projects, partnering with nonprofit and community-based organizations, and using social media for outreach and communication.
- Exchanging ideas about designing course syllabi, lectures, readings, and assignments to be more contemporary, inclusive, and community-focused.

CHAMPIONING STUDENT AGENCY: FROM SHARING CLASSROOM POWER TO SHARING WORK WITH THE PUBLIC

Abstract ID: 968
Abstract within Pre-Organized Session 169

FLORES, Nina M. [California State University Long Beach] nina.flores@csulb.edu, presenting author

When training future planners, how can we as instructors use our classrooms as models for building a sense of community ownership and agency among participants? Urban planning classrooms offer a unique space for instructors to demonstrate everything from engaging in democratic educational practices by sharing classroom power with students, to increasing the number of strategies students learn for sharing work with public audiences. In an effort to work toward this goal, this paper explains and analyzes three pedagogical approaches for increasing student agency, both in the classroom and the community: syllabus co-construction, strategic social media engagement, and training students in distinctly non-academic writing styles used in Opinion Editorial (OpEd) or blog writing.

My approach to teaching is heavily influenced by both engaged and critical pedagogies. In her writing on

engaged pedagogy, bell hooks describes developing interactive relationships between students and teachers in which teachers are responsible for assessing the emotional intelligence in the classroom, and going beyond the surface level to determine what students know and need to know (hooks, 2010). In my classes, I find that engaged pedagogy works hand-in-hand with using critical pedagogies, which focus on relationships to power, rely on the concepts of teacher-students and student-teachers, and are meant to guide students to develop their own understanding of their world (Freire, 1970; hooks, 2004).

In urban planning classrooms, engaged and critical pedagogies can be ideal choices for teaching and have produced the three strategies discussed in this paper. Drawing on my experience teaching a range of undergraduate and graduate planning courses at public universities, as well as courses in social and cultural analysis, I highlight examples of each pedagogical approach. First, I discuss the idea of syllabus co-construction, in which students and instructors work together to co-construct course syllabi. This allows students to use the knowledge they already possess to guide deeper learning on issues critical to their lives and communities, which may include issues about which the instructor is unaware. Second, I describe several ways in which students can strategically engage with social media, whether through content creation or using social media for research projects. Lastly, I walk through the process of teaching students how to write OpEd or blog pieces, as well as the potential possibilities and perils of adding our voices and ideas to online public conversations.

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Key Words: critical pedagogy, engaged pedagogy, social media, public knowledge

CRITICAL RACE PEDAGOGY FOR STUDENTS OF COLOR – THE CASE FOR PLACE-BASED STUDENT EXPERIENCES
Abstract ID: 969
Abstract within Pre-Organized Session 169

NAKAOKA, Susan [Sacramento State University] nakaoka@csus.edu, presenting author

Approaches that incorporate culture and diversity into teaching community development tend to assume a White practitioner working with a community of color. For students and practitioners of color, there are limited models that speak to their unique experiences in community development. Critical Race Pedagogy (CRP) has emerged as an exciting strategy that centers the role of race in teaching, stresses the student's perspective, and highlights multiple epistemologies and ways of knowing. An offshoot of Critical Race Theory, CRP acknowledges that systems of oppression and discriminatory power dynamics are inherent in educational institutions (Lynn, 1999).   The main research question is: How can CRP integrate Indigenous, place-based community development models for Planning education? By utilizing a specific case example based in Hawaiʻi, CRP can be used to bring place-based, or 'āina-based interventions to enhance student learning. Offering guidance is a case study on Hoʻokuaʻāina, a Native Hawaiian non-profit that utilizes an Indigenous development model to cultivate taro, while building community through educational programming.

CRP, which can be characterized as "a crucial construct in challenging the inequalities that have evolved in the context of schooling in the U.S." (Jennings and Lynn, 2005, p. 15), has not been fully developed for the Urban Planning classroom. Application of this pedagogical method would mean acknowledging: 1. the endemic nature of racism in the U.S.; 2. the importance of cultural identity; 3. the necessary interaction of race, class and gender; 4. the importance of reflexivity; and 4. the practice of a liberatory pedagogy (Jennings & Lynn, 2005; Lynn, 1999). Other theorists add that CRP should include a challenge to dominant ideology, a commitment to social justice, the centrality of experiential knowledge and the

transdisciplinary perspective (Solorzano & Yosso, 2001).

This paper combines knowledge from 10 years of piloting CRP methods while teaching community development courses along with a case study research project of an Indigenous, place-based community-based organization. Specific Planning course assignments and experiential exercises that stress student narratives, the history of colonization and oppression, and social justice will be described. Of particular importance to Indigenous communities and students is connection to place. Thus, the case study of Hoʻokuaʻāina shows that by immersing themselves, literally, into the land or āina, students of color experience a deep connection with culture, historical oppression and their own genealogies. The exercise also allows for legitimization of Indigenous knowledge and of academia as both are reinforced in the dialogue surrounding the exercise which includes metaphor and story-telling. Although White students may also benefit from CRP, this paper privileges the experiences of students of color.

Findings indicate that CRP in planning community development courses can be achieved by: understanding the impact of race or indigeneity in a particular place; identifying key themes related to cultural identity of place and of the individual student; using experiential, place-based learning; developing the critical consciousness of student and instructor; and embracing transdisciplinary methods towards social justice outcomes. These lessons bring to mind an ʻōlelo noʻeau, or Hawaiian proverb: Ho'olohe Ho ke pepeiao, nana i ka maka, a hana ka lima - the wisdom of learning through listening carefully, observing with the eyes, and working with the hands (Pukui, 1983).

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Key Words: Pedagogy, Critical Race Theory, Indigenous Planning, Student Engagement, Cultural relevance

INNOVATIVE STUDENT PROJECTS WITH COMMUNITY-BASED RESEARCH PEDAGOGY
Abstract ID: 970
Abstract within Pre-Organized Session 169

WONG, Karna [University of California Irvine] karna.wong@uci.edu, presenting author

Community-based research (CBR) is a collaborative process to design and implement research projects to address co-identified needs between researchers and communities (Strand, 2000, p. 85). Planners, especially in the health and environmental fields, utilize CBR or community-based participatory research (CBPR) to gather local knowledge and implement interventions, policies, and social change (Israel et al., 2006). CBPR is characterized by a partnership between local residents, representatives from nonprofit organizations, social service agencies, and academic researchers. All members of the partnership contribute their expertise equitably, in addition to share decision making and ownership in projects. This approach is similar to popular education research when students become creators of their own curriculum as teachers, learners, and researchers and breakdown the traditional dichotomous "relationships between students and teachers, researchers and subjects, and schools and communities" (Freire, 1970; Rivera, 1999, p. 498).

This study explores how CBR can be integrated into planning and policy classroom curriculum and

assignments. Three example CBR projects discussed are community gardens in diverse communities, Safe Routes to Schools for youth, and universal/inclusive design for persons with disabilities. For two of these projects, the class partnered with nonprofit community-based organizations, and the third project was a partnership with a university campus center. Through course readings and lectures, students learned about different theoretical frameworks and specific research methods and skills. Student assignments incorporated research, fieldwork, spatial analysis, and visual design. Practitioners and community members were guest speakers in the classroom and at site visits. Students attended field trips with guided tours by local residents. Through CBR and project-based learning, students gained experience in writing case studies, building models to scale, observing transportation and traffic patterns, creating maps, and using photography for field observations about the built environment. By integrating community-based research into the classroom, this type of research is mutually beneficial for the students and community at-large.

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Key Words: community-based research, planning, pedagogy, curriculum development

TRACK 10 - ROUNDTABLES

REMEMBERING OUR WAY FORWARD: PLANNING HISTORY FOR PRESENT-DAY JUSTICE AND FUTURE RESILIENCE
Abstract ID: 391
Roundtable

WALSH, Elizabeth [University of Colorado Denver] elizabeth.walsh@ucdenver.edu, moderator
WILSON, Barbara [University of Virginia] bbwilson@virginia.edu, participant
KOH, Annette [California State Polytechnic University, Pomona] koha@hawaii.edu, participant
SLABAUGH, Dani [California State Polytechnic University, Pomona] yard2table@gmail.com, participant
DIAMOND, Alissa [University of Virginia] au2c@virginia.edu, participant

What do we need to remember from the history of planning and the evolution of urban structures to prepare our students to advance resilient, equitable, whole communities in the face of climate change and rising inequality? We recognize that planning history and theory courses are an important leverage point. Generally taught in the first semester of professional degree programs, these foundational courses shape

1) students' imagination of the field, its boundaries (including membership and leadership; admissible forms and sources of knowledge; timeline; and geography), and their place within the profession;

2) cultural and interpersonal norms and community practices for the cohort (and ultimately the profession and the institutional norms it shapes); and

3) students' conceptual and methodological frameworks for understanding and historicizing complex, dynamic contexts - an essential precursor to developing capacity for situated ethical judgement and practical wisdom.

The roundtable builds upon the 2019 ACSP roundtable and workshop on emotion in planning pedagogy at which many participants spoke of the difficulty in shifting classroom spaces beyond rationality and professionalization to encompass self-reflexivity, mutual vulnerability, and co-learning across dimensions of difference (Lyles et al, 2018). The focus of the roundtable will be to share curricular adaptations, pedagogical techniques, and community-building practices that respond to the three priorities named above and help expand the promise and potential of planning history and theory courses to prepare planners to advance climate justice and resilience in the anthropocene.

The dominant teleological view of planning's trajectory suggests that progress is assured and that mistakes of the past can be cordoned off in the past. Epistemic justice would require a more profound acknowledgment of the differential and relational experiences of place (Harjo, 2019). As they will practice within socially segregated and ecologically fragmented landscapes inherited from the past, students need creative strategies for negotiating these multiple worlds and publics. We consider teaching planning theory within a broader discussion of situated knowledges and suggest additions from social work, indigenous studies, black feminist theory, community psychology, contemplative practice, and critical race theory to the canon. We offer tactics and strategies for teaching planning history as multi-layered temporalities, archival methods and Afro-futurism for example, to approach history as a way of remembering our way forward.

Given their foundational role in the curriculum, an intentional and reflective redesign of planning history and theory is critical for the potential of future planners to nurture justice and resilience. As Grace Lee Boggs noted, "History is not the past. It is the stories we tell about the past. How we tell these stories - triumphantly or self-critically, metaphysically or dialectically - has a lot to do with whether we cut short or advance our evolution as human beings" (Boggs, 2012). What pedagogical techniques and curricular adaptations to standard PAB-approved planning history and theory courses can help our field fulfill its promise to present and future generations?

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Key Words: planning history, planning pedagogy, resilience, futurities

BECOMING MORE PURPOSEFUL: HOW CAN COMMUNITY-ENGAGED STUDIOS AND TEACHING INCREASE THEIR IMPACTS?
Abstract ID: 510
Roundtable

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Community-engaged studios, courses, and programs continue to grow in popularity in planning programs across the U.S. However, scholars frequently note the difficulties faced in meaningfully incorporating community engagement activities in their teaching and studio work, including: discussions of the difficulties faced in providing appropriate participatory training to students (Kennedy & Tilly, 2019), reflecting on issues of power (Sletto, 2010), and critically assessing who is really benefiting from these partnerships (Loukaitou-Sideris & Mukhija, 2016; Suckale et al., 2018). Additional questions are raised by faculty initiating this work as to how they might work towards leveraging their community engaged teaching activities towards research production (Sletto, 2013). Planners experienced in community engaged teaching will share their perspectives on the following questions:

What are the most significant difficulties faced in the pursuit of community engaged teaching efforts?

How might planning faculty leverage community engaged teaching and studio's efforts towards advancing their research and scholarly productivity?

Are there examples of programs or initiatives at the department, university, or field level that have worked in supporting faculty in bridging their community engaged teaching and research efforts?

How might planners participate in community engaged teaching activities while being mindful of the broader ethical issues of working in this area?

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Key Words: Community Engagement, Service Learning, Teaching, Studios, Education

COMMUNITY ENGAGEMENT: TEACHING AND LEARNING WITH COMMUNITY PARTNERS
Abstract ID: 635
Roundtable

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Community engagement in local decision-making is a fundamental principle of community development and planning practice. However, community engagement methods vary in their translatability to teaching in a traditional classroom or practicum setting. Partnering with community members or community-based organizations provides opportunities to enrich the learning environment and, when done correctly, yields outcomes for both students and the community. In addition, these strategies work to democratize learning spaces by opening up who holds authority in the classroom and disrupting traditional boundaries between universities and the communities they strive to serve.

This roundtable brings together academics teaching community engagement courses that embrace co-learning, mid- to long-term community partnerships, and other approaches to community-engaged teaching. The discussion explores how we are not only teaching engagement methods but also developing students' capacities such as listening, cultural awareness, and facilitation that are relevant to effective engagement. Participants will review the successes and challenges from the instructor, students, and community perspectives. The goal of the discussion is to share and reveal best practices relevant to teaching the next generation of practitioners working to achieve sustained engagement with increasingly more diverse constituents.

Questions the roundtable panelists seek to address include:

What are our student learning objectives and how are courses designed to meet these objectives?

How are we structuring deep and meaningful community engagement and developing long-term community partnerships?

How are we measuring success as both student and community outcomes?

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Key Words: Community Engagement, Community Partnerships, Capacity Building

TRANSNATIONAL UNIVERSITY-COMMUNITY COLLABORATIONS FOR POST-DISASTER RECOVERY: RESEARCH, EDUCATION AND ENGAGEMENT
Abstract ID: 735
Roundtable

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NAVARRO, Criseida [University of Puerto Rico] criseida.navarro@gmail.com, participant

Since Hurricane María struck Puerto Rico in 2017, multiple U.S. universities have embarked on university-community collaborations aimed at helping local communities recover. The predominant approach to these collaborations has been through studio courses, where instructors design learning spaces for students interested in community development and disaster recovery issues, while also developing opportunities for direct positive impact on the affected communities. While the learning component of these collaborations are for the most part successful (Kiely, 2005), to what extent do they positively impact local community recovery? What are the challenges in leveraging learning experiences for students with positive effects for local communities? What are the opportunities?

This roundtable will bring together community-engaged scholars from universities across the United States to share experiences and reflections on current – and past – transnational university-community collaborations. Although the main focus of the roundtable will be on university-initiated collaborations with local communities for post-disaster recovery and planning, it will also draw on pre-disaster experiences of service learning and partnerships in the University of Puerto Rico. Panelists will consider the following questions:

- What are some best practices for building and fostering transnational relationships for successful collaborations? What are some worst practices?
- How can researchers balance the education objectives with thoughtful community engagement?
- What are some of the challenges in managing expectations for both students and communities?
- How can universities from afar be integrated with existing local disaster planning and recovery frameworks?

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Key Words: studio courses, transnational collaborations, pedagogy, community engagement, disaster recovery

MAKE SPACE, TAKE SPACE: STUDENT ACTIVISM AND EXPERIENCE WITH EQUITY AND INCLUSION INITIATIVES
Abstract ID: 1204
Roundtable

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Institutions of higher education have long struggled to incorporate diversity, equity, and inclusion (DEI) into campus life. Past studies have documented the differential experiences students report across race, gender, and sexual orientation in the classroom and on campus (Harper, 2007). University administrations have made renewed DEI efforts after sustained activism by students across the country, yet they often fall short of transformative change by failing to institutionalize changes or fully integrate student perspectives into decision-making processes (Fisher, 2018). Although progress has been slow for campus-wide initiatives, there are individual planning departments that have implemented successful policies that address these issues with depth and care. Given the planning field's primary goal of enhancing the quality of life for all people living in the communities we serve, planning schools are uniquely positioned to be agents of change within the university context.

Students offer an important perspective to inform the programmatic shifts that are needed to ensure diverse perspectives are expressed, respected and supported. In particular, this conversation will focus around the pervasiveness of whiteness in academia--in the curriculum, in the spaces, in the people--and how students are creating spaces for a more diverse, inclusive, and equitable presence. However, creating these spaces can prove to be challenging as bureaucratic hurdles make it difficult for students to engage with administrative policy making and for timely implementation of DEI policies. Previous research has found that faculty and staff are able to avoid deeper conversation related to equity and inclusion by shifting language in official communications, but continuing to recenter majority culture and promoting colorblindness (Hoffman & Mitchell, 2016; Harper, 2007). Additionally, studies show that the burden of advancing DEI initiatives falls on women and people of color, reifying inequity among students (Hoffman & Mitchell, 2016).

For this round table, we offer various student perspectives as we facilitate a broader conversation on DEI issues in planning education. This conversation will begin by discussing the policy changes that students have pushed for at various institutions across the United States and the institutional roadblocks that need to be dismantled for this work to be successful. Then, it will turn toward pedagogical approaches that attempt to generate more spaces for diverse experiences within the classroom. Participants will discuss a two-pronged approach to pedagogy. First, this approach emphasizes the facilitation of complicated discussions throughout the curriculum. Second, it incorporates service-learning and civic engagement by taking students outside the university into the community to better understand lived experiences related to diversity, equity, and inclusion. These approaches apply a restorative framework to education by emphasizing the importance of identity and taking an active role in addressing the influences this has had for generations (Rhoads, 2016). We must train students to become agents of social change that recognize and engage with these challenging issues in order to dismantle the structural inequities that planning has helped create (Jacoby, 2017). This can only be accomplished by cultivating a campus environment that welcomes outside opinions, promotes inclusive perspectives, and engages in bold conversations.

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Key Words: diversity, equity, and inclusion, campus climate, university curriculum and policy, student activism, student voice

TRACK 10 – INDIVIDUAL ABSTRACTS

LEARNING TO WHEEL: AN APPROACH TO ENHANCING AN EXPERIENTIAL LEARNING MODULE ON ACCESSIBLE PUBLIC SPACE DESIGN
Abstract ID: 73
Individual Paper Submission

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Experiential learning to better understand accessibility barriers in the built environment for persons with disability has become increasingly popular. Examples include able-bodied participants going into the community in a wheelchair or being blindfolded to simulate mobility challenges or vision loss. Such an experience can help future planners to better appreciate first-hand the day-to-day challenges faced by persons with disabilities (Mulligan et al., 2017). However, these modules are not free of criticisms. For instance, a study showed that participation in a simulated exercise can lead to stereotyping persons with disability as 'less capable' (Silverman et al., 2015). Experiential modules tend to focus on the negative aspects (barriers, challenges) of disability rather than a more holistic understanding of the capabilities of persons with disabilities (Barney, 2012). Moreover, these modules may not in fact substantially improve participants' attitudes toward disability as some proponents claim (Wozencroft, 2015).

This work reflects on experiential learning approaches aimed to better understand urban design needs in the built environment for accessibility, using the wheelchair experience module at the School of Planning, Dalhousie University, as an example case. One of the criticisms of a simulated experience in literature is that a short-time simulation only helps, at best, to understand the challenges for persons with a newly acquired disability (Flower et al, 2007). In fact, actual wheelchair users typically have considerably higher skills in navigating physical barriers in the environment than the training module participants. To address this issue, our module has incorporated a wheelchair skills-learning component led by rehabilitation scientists at Dalhousie's Faculty of Medicine. By providing extensive training on effectively maneuvering wheelchairs, participants would potentially be better able to recognize 'actual' barriers experienced by wheelchair users and to subsequently work to develop priority design solutions.

In order to test our assumption, and explore additional ways to further improve the module, we asked: 1) does the wheelchair skill training substantively add to the students' understanding for better identifying design priorities? and 2) what modifications of the learning module might be beneficial, from a student perspective, to further their understanding for design needs? We measured participating students' (n=34) wheelchair skills (i.e. moving forward/backward, stopping on a slope, wheeling around an obstacle or gap, etc.) through a survey, and collected the accessibility audits for public spaces conducted by the students to assess the associations with their acquired wheelchair skill levels. Then, we conducted a focus group discussion to ascertain students' perspectives in their learning experience.

The analysis showed that the wheelchair skills are moderately correlated with the number of design solutions participants suggested. The nature of barriers identified are more relevant to the actual wheelchair user experience, judged by two volunteer individuals with permanent mobility disabilities. In the focus group, participants voiced that the wheelchair skill training was highly beneficial because it helped them extend their geographic range of observation during the exercise and investigate barriers in

more details. They suggested that the module should incorporate actual wheelchair users' participation as advisors.

Our study adds to the currently limited literature regarding experiential learning for the purpose of training planners to better design accessible built environments. It also contributes to critical discourse in planning pedagogy related to accessible space design. Current pedagogy often still operates within a medical framework of disability, where the mindset of professionals such as planners and architects is more to 'fix the problems' for persons with disability, rather than valuing their knowledge for better designs. The mind-shift for properly acknowledging the ability and expertise of persons with disability and their roles in (re)formulation of urban spaces can start with experiential learning modules, if those modules are executed effectively.

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Key Words: Experiential learning, Accessibility, Built environment, Wheelchair users, Public space design

ON THE OUTSIDE LOOKING IN: LATINX AND AFRICAN AMERICAN STUDENT PERSPECTIVES ON COMMUNITY-ENGAGED COURSES AT PREDOMINANTLY WHITE INSTITUTIONS IN PLANNING EDUCATION
Abstract ID: 204
Individual Paper Submission

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Over the past several decades, the university enrollment rate in the U.S. among African American and Latinx students has increased. Yet, African Americans and Latinx students still make up a smaller than expected percentage of those enrolled in planning programs when compared to the overall population. Despite the increased enrollment rate of African American and Latinx students in academia as a whole, and urban planning, research on their perspectives in planning remain understudied. There is even less research about Latinx and African American students' perspectives in community-engaged learning courses. Although prior studies on community-engaged courses provide insight into student experiences in planning programs, we lack information about the perspectives of Latinx and African American students in particular.

This article focuses on the perspectives of African American and Latinx urban planning students and their perspectives in community-engaged courses, interactions with students and faculty, and engagement with communities of color at predominantly white institutions (PWIs). We ask the following questions: What are African American and Latinx urban planning student perspectives on community-engaged learning in communities of a shared racial and ethnic background? How did students prepare for the experience? What are the tensions they perceive between their class and the community once they were immersed in the neighborhood? How did students feel after the course ended? What are the gaps in supporting African American and Latinx students in community-engaged learning in communities of a shared racial and ethnic background? The data presented in this article is part of a nationwide study of undergraduate and graduate urban planning students with particular attention to the perspectives of African American and Latinx students around issues of community engagement taking place in communities of color.

First, the article provides an overview of the literature on current perceptions and barriers in higher education for African American and Latinx students. Next, we describe the research methods undertaken. Our methods captured students' perspectives before, during, and after working in the community. Then, we outline our results, which show the perspectives of African American and Latinx students in community-engaged courses taking place within communities of color. Overall, our research findings show that Latinx and African American students felt unprepared to enter a neighborhood on the ground because they wish professors would spend more time discussing community engagement skills instead of talking about white privilege—these conversations from their perspective mostly seem to benefit white students. Students of color perceived faculty members to be most effective when they taught about racism without them feeling responsible for teaching others. Continuous written and verbal reflection proved to be effective and was beneficial to student learning when it was an ongoing part of the course, as opposed to at the end. Students of color enjoyed working in communities of color but, at times, felt pressured to keep these new relationships; they also felt disconcerted about their white peers' lack of empathy. Latinx and African American students offer some insights into how they felt supported by faculty or other institutions on campus during their community engaged coursework. Finally, participants provided recommendations on how to improve community-engaged learning in communities of color for students of color at PWIs. Through evaluating community-engaged courses taking place in communities of color in planning education at PWIs, our findings and recommendations provide important suggestions about how faculty and institutions can better support students of color learning outcomes.

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Key Words: Planning education, diversity, climate, community engagement, studio courses

THIRTY-EIGHT YEARS OF RESEARCH IN URBAN PLANNING: FOCUSED ON RACIAL EQUITY AND JUSTICE
Abstract ID: 386

Individual Paper Submission

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Have the concerns about racial equity and justice in the planning field continued and increased? There have been only a few papers reviewing the transition of topics in planning journals such as Gobster's "(Text) Mining the LANDscape: Themes and Trends over 40 Years of Landscape and Urban Planning" and Fang and Ewing's "Tracking Our Footsteps: Thirty Years of Publication in JAPA, JPER, and JPL." These studies did not center on racial equity and justice topics in their studies. Planning research has not persistently dealt with racial and justice issues over the 38 years, and there have been strong beliefs that racial equity and justice issues have not ameliorated, but aggravated (Sandercock 1998). Profession code of ethics for planners demands that planners "…seek social justice by working on expanding choice and opportunity for all persons, recognizing a special responsibility to plan for the needs of the disadvantaged and to promote racial and economic integration…[and] urge the alteration of policies, institutions, and decisions that oppose such needs (American Institute of Certified Planners 2016)". Although this ethic code is a requirement for planners, still many planners and researchers argue that racial segregation and inequality issues have not been enhanced for the past four decades.

The object of this research is to explore historical transition in research dimensions on racial equity and justice by reviewing the abstracts of all papers published in planning journals. Reviewing key planning academic journals' research topics from their inception reveals a long-term intellectual transition in a broad planning research context and gives us insights into how planning education and research have tackled the dimensions of racial equity issues over time. Learning from the past and incorporating this knowledge into how we plan, build, and design the equitable cities of tomorrow contributes to reducing biases existing in a planning system and ameliorating racial segregation and inequality.

In order to attain the objective, this paper uses text analysis and topic modeling with keyword frequencies, publication themes, titles and abstracts of published papers in major urban planning journals: Journal of Planning Education & Research (JPER), Journal of the American Planning Association (JAPA), Journal of Planning Literature (JPL), Journal of Planning History (JPH), and Planning Theory from 1981 to 2019. Topic modeling uses a generative probabilistic model to group data sets by topics, which sorts keywords and generates themes (Blei, Ng, and Jordan 2003). Initial study shows that the number of articles on "racial equity" among all the articles published in the Journal of Planning Education & Research between 1981 and 2019 was 19, 48, 68, and 143 in each decade. The results of the exploratory text data analysis show 1) the ebb and flow of research trend on racial equity that has existed over the 38 years, 2) the changes in research focus on racial inequality and justice, and 3) similarities and dissimilarities in the different journals' research subjects in relation with racial inequality and equity.

The outcomes of this research would motivate researchers to devote more attention to powerless groups and equity issues of just cities that we eventually dream of achieving (Fainstein 2000). For planners to make efforts to create and widely use planning tools for racial equity and justice, historical understanding of complex dimensions of racial equity and justice is necessary.

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"NOT TO MAKE THIS ALL ABOUT RACE..." PEDAGOGICAL STRATEGIES TO DECENTER WHITENESS IN THE PLANNING CLASSROOM AND PROFESSION
Abstract ID: 471
Individual Paper Submission

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PAB's current standards state that one of the "foremost responsibilities" of accredited programs is to "advance diversity and a culture of inclusion among the planning profession's future practitioners in the Program, particularly with regard to historically underrepresented racial and ethnic minorities" (PAB 2017). A recent report from the American Planning Association reveals a leaky pipeline in which students of color do not become practicing planners of color; racial minorities comprise 30% of recent planning graduates but only 15% of APA members with less than 5 years of experience (Vazquez & Dalton 2019). Nationally, planners of color only make up 7% of total APA membership.

However, inclusion and diversity efforts can remarginalize and reinscribe the inside-outside binary, especially when exposure to racial differences occurs through stand-alone modules or community studios in "disadvantaged" neighborhoods. It is urgent for planning educators to facilitate learning across various dimensions of difference without relying on students of color to instruct their classmates; discussions of racialized definitions of "safety" or indigenous protests against development can be integrated into class without relying on Black or Native students to bear the burden of representation. A 2016 study conducted by the Planners of Color Interest Group (Jackson, Garcia-Zambrana, Greenlee, Lee & Chrisinger 2018) highlighted concerns that studio classes reinforced problematic binaries that categorized planners as outsiders to the community. What happens, however, in programs located within Hispanic-serving institutions (HSIs) and historically Black colleges and universities (HBCUs), where student populations are "majority minority"?

I explore potential strategies to decenter whiteness in the planning classroom by emphasizing the emotional and relational aspects of urban planning. The default definition of planners as "objective" experts in service to the public interest delegitimized students' emotional and lived knowledge of socio-spatial injustice. How to facilitate discussions about community safety while many in the classroom continue to experience the traumas of over-policing and militarized borders? How to unravel the epistemic injustice in which emotions borne of firsthand experience render you unreliable? Students often apologized for "making this racial" and declared the need to consider "both sides" of the issue.

Using autoethnography emerging from teaching in a Hispanic-serving institution in Los Angeles County, this paper examines affective, pedagogical and intellectual strategies to foster a robust praxis of radical inclusion. An emphasis on positionality and situated knowledges can destabilize conventional wisdom and cultivate self-reflexivity; discussions can be designed to generate more questions than answers. Writing assignments were oriented to public pedagogy and "relational accountability" (Diab & Wilson 2008). Students had to explain a planning topic for a specific demographic of their choice, rather than creating a general plan for an abstract public that too often defaults to an imagined white middle-class resident. When designing materials to bring "disengaged constituents" into participatory planning, students drew from their own and their families' experiences of cultural and language barriers. Attention to the personal and emotional aspects of planning practice can reframe inclusion in ways that do not replicate how whiteness operates as the default mode within planning discourse and the profession.

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Key Words: emotions, racial equity, planning pedagogy

DECONSTRUCTING THE NOTION OF "PUBLIC SERVICE" IN THE CIVIC IDENTITIES OF US PLANNING PROGRAMS
Abstract ID: 481
Individual Paper Submission

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Public research universities were established with a civic mission to educate citizens to actively participate in a diverse democracy, and to create knowledge toward the improvement and economic development of society. Over time, however, as many universities evolved into world-renowned research engines, critics claimed that higher education strayed too far from its original civic purpose to focus on private gains. Literature on the transformation of higher education in the U.S. identifies best practices for reinvesting in pressing societal concerns and preparing students to participate in an increasingly diverse democracy. Given the influence they wield in higher education, as well as anchor institutions in their own local communities, research universities have unrealized potential to actualize their civic responsibility in the broader public education system.

How have these best practices translated to the civic identities of planning programs in U.S. public research universities? We address this question through an analysis of promotion and tenure guidelines of U.S. planning and planning-related programs located in public Research 1 universities along with deeper analysis of select institutions and programs. We examine the gaps that exist between the best practices of the engaged scholar and the ways in which public research universities operationalize and reward public service responsibilities and roles. Preliminary results suggest differences between planning programs located in universities with Carnegie designation status, the spatial location of the university within the larger community, and whether the planning programs are located in policy or architecture schools.

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PLANNING EDUCATION AND "FREE-CHOICE" LEARNERS: TEACHING THE YOUTUBE CLASSROOM
Abstract ID: 585
Individual Paper Submission

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Education is a critical part of the planning profession, both in academia and in practice. Academics very explicitly educate planning students, while practitioners often educate decision makers and members of the public before key planning decisions. Planners educate learners seeking instruction for a specific purpose: to earn a degree or to participate in decision making on local planning processes, such as a comprehensive plan update or corridor redesign.

There is another type of learner that does receive as much direct attention from planners: "free-choice" learners. They do not have goals or agendas within the institutional structure of school or a defined planning process, but instead are engaged in lifelong continuing education on topics that interest them. They read books, magazine articles, and newspaper articles; watch educational television programs; and visit museums and science centers. Increasingly, free-choice learners are turning to YouTube, the world's largest online video platform, to consume educational content. YouTube is the second-most visited social network on the internet, behind only Facebook, and the largest learning platform in the world.

Despite the large number of YouTube users and educational videos, there are relatively few videos and channels (the term used for accounts that publish videos) about city planning. This is a potential missed opportunity, as YouTube can provide basic education on planning topics to large numbers of people. Those free-choice learners who watch a city planning YouTube video may get involved in future planning processes and vote in elections and referenda.

This observation about the low number channels focusing on city planning education prompts the following research questions: How many free-choice learners can be taught by a city planning channel on YouTube? And who are these free-choice learners? To gain insight into these questions, the author used a novel methodological approach. They produced a YouTube channel that periodically publishes 5-15 minute educational videos on city planning topics, such as transportation, land use, and urban design.

YouTube publishes statistical data that can be used to answer the research question, including demographic data about viewers. This data is supplemented by a viewer survey of 716 respondents that asked them additional questions about their YouTube viewing habits and interest in city planning. The results show that 11.8 million people watched city planning videos over the 32-month study period. The viewers, for the most part, not practitioners, planning students, or otherwise involved in a planning process. This is a promising result that demonstrates the promise of publishing videos as a means of educating the general public. The analytics and survey results show some potential downsides of relying on YouTube to reach free-choice learners, however. YouTube's algorithm acts as a gatekeeper and doesn't recommend videos to all demographic groups equally. Content creators (YouTube's term for video publishers) cannot choose their audience, but instead must rely on YouTube to do it for them. YouTube also doesn't widely recommend videos they deem incompatible with their advertising program.

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Key Words: Pedagogy, Free-choice learning, YouTube, Social Media, Communication

WINNING IN SUSTAINABLE URBAN DEVELOPMENT: A GAMIFICATION APPROACH TO BETTER LEARNING
Abstract ID: 595
Individual Paper Submission

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Urban planning is a complex process which often requires a greater understanding of context, involves multi-tasking and could be intimidating for new learners. These tasks include but not limited to balancing the spatial interests of different stakeholders during social changes in globalization, providing an attractive environment for residents and newcomers, and reaching goals of sustainable economic growth. Given institutional differences at the local and national levels and individual's capacities due to their backgrounds, it is challenging for new learners to understand the core values of urban planning, such as inclusiveness, sustainability, and resilience, immediately and systematically. As for traditional classroom lectures, readings, and discussions, enthusiasm for both learning and teaching could easily diminish. Gamification using game design elements in non-game contexts could be an option. However, existing game-based pedagogy does not focus on the impact of globalization or urbanization on urban planning and students' difficulties or differences in intercultural learning.

Therefore, we designed a board role-playing game ("Fresh off the Boat") and take it as an experiment of gamified pedagogy. By drawing on the design of China's Go, land use in the U.S., and basic geometric principles, this game simulates the spatial conflicts and collaborations between (im-)migrants and local residents and allows urban planner make land-use options based on six combinations of policy goals (including one or more of these goals: maximized revenue or tax, balanced immigrant and residents ratio, maximized the space that can be occupied by local residents) randomly assigned to them.

We will test the teaching effectiveness of game-based classroom by applying the game in the undergraduate and graduate classes at the University of Florida, Florida State University, and Wuhan University. In each university, we will recruit 36 undergraduate students and 36 graduate students in social sciences including economics, public management, and urban planning. Before starting the experiment, they will take a questionnaire survey about their understanding of urban planning in the U.S., attitude towards immigrants and globalization, and learning interests in urban studies. We will randomly assign half participants into 12 game units (6 undergraduate units and 6 graduate units). In each unit, one plays as an urban planner, one plays as local resident(s), one plays as (im-)migrants. The urban planner can occupy the grids of the game board by using 7-color wood chips, which simulates zoning. According to the game rules, residents and immigrants will add their chess pieces of different shapes and colors on the dots of board and pile them strategically after urban planners' moves. Once all chess pieces are used up or no space to occupy or pile, each group will calculate the spatial value of the chess pieces for each player and compare the index of sustainability, accessibility, inclusiveness, and resilience with other units. The game will repeat twice, and players will shift to the other two roles, respectively. As the control group, the non-game participants will watch a video about modern urban planning in the U.S. and read studies about immigrants and sustainability. After games, all participants will take surveys again, which

cover not only the questions in the previous one but also new standard questions, open-ended questions, and individual interviews.

We will quantitatively and qualitatively compare the performance and feedback of students of control and treatment groups and the changes in their understandings of urban planning. We will also investigate their capacities in viewing the issues from different perspectives, the changes in learning interest, and opinions about differences between game and reality. This study will enrich the pedagogy of gamification in urban studies in the context of globalization and urbanization.

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Key Words: Behavioral analysis, competition, exclusion, win-win solutions, social equity

FLIPPING PROGRAM ASSESSMENT: USING STUDENT LEARNING OUTCOMES TO BUILD CRITICAL COHERENCE IN A COMMUNITY PLANNING CURRICULUM
Abstract ID: 690
Individual Paper Submission

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Program assessment is not a universally loved aspect of planning education, however investing intentionally in a process of clarifying, aligning, and mapping student learning outcomes can empower faculty, strengthen shared purpose, and create an adaptive mechanism to serve all involved. In our view, this is especially valuable for programs with a critical orientation. In Fall, 2016, the University of Washington, Tacoma (UWT) Urban Studies Program launched a new graduate degree in Community Planning. Recognizing that assessment of student learning is an important component of degree program development and culture, the faculty engaged a consultant to guide a two-year process of mapping the curriculum to student learning outcomes, revising the learning outcomes, strengthening the curriculum, and designing an assessment process. This effort brought increased coherence to a community planning degree whose faculty share a normative commitment to social justice and equitable development, enabling an approach to assessment that is driven by the mission of the program.

Developing an assessment process required a strong set of program-level student learning outcomes, a map of those outcomes onto the curriculum, a set of measures and data collection schemes, and a schedule for collecting and using assessment information in program review (Suskie, 2004). In this paper, we describe the process used at UWT to develop a curriculum map whereby we discovered that our learning outcomes did not accurately reflect our true intent for student learning and engagement in the degree program. Subsequently, we revised the student learning outcomes to capture the knowledge, skills, and professional competencies and values we wanted our students to have by the time they graduated.

UWT's Masters of Community Planning curriculum and the student learning outcomes had been developed through a process including community planning faculty, urban studies faculty, and other campus governance committees. The result was a full curriculum over a two academic year period

consisting of a set of 12 required courses (on the quarter system). From the outset, the program was focused on the ways in which community planning graduates could serve as change agents who are able to contend with complex political, social, and organizational environments (Taufen Wessells, 2018; Campbell, Tait, and Watkins 2014; Siemiatycki 2012). We had defined a set of learning outcomes that demonstrated how the curriculum focused on community planning in general, but less about the specific knowledge areas, skills, and values that students would obtain during their master's degree program. This realization and the resulting learning outcomes and curricular revisions demonstrate the value of assessment as a continuous check on student learning, program aspirations, and curricular logic (Walvoord, 2004). We describe how this begins with individual courses and faculty as the building blocks of program delivery; how collaborative review of course-level outcomes led to improved understanding and shared articulation of what students are meant to be learning, where, when, and why; and how the identification of assessment milestones creates mutual accountability among faculty, to students, and to communities with whom we intend to engage and partner.

Our learning outcomes are unique to our program and, we hope, authentic representations of what and how we teach AND what and how we expect students to know, do, and act in a professional setting. We share these outcomes and the process that led to their development to inform members of the audience on how and why student learning outcome assessment can be done to improve your program's success. Further, we hope to share insights and observations on our process to help others avoid pitfalls and advance to success faster.

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Key Words: student learning outcomes, assessment culture, curriculum design and revision, engaged learning, critical pedagogy

"WAKING UP" CASE STUDIES WITH REFLECTION ON PRACTICAL JUDGMENTS
Abstract ID: 720
Individual Paper Submission

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Active learning techniques prepare planners for problem-solving, recognizing the multi-paradigmatic, ethical, and political aspects of practice. While community-based studios provide experiential planning encounters, students' exposure to a wide range of planning practice is limited by the time-intensive nature of studios.

Case studies also broaden students' practice exposure by showing how planning episodes unfold. Cases are receiving attention in planning scholarship and education (e.g., Lincoln Land Institute case study series), and in planning for racial equity and justice (Krumholz & Wertheim Hexter 2018). Yet cases have a limitation: as historical accounts, they often fail to engage students in key moments of reflection-in-action and practical judgment that shaped the planning episode.

This paper argues that planner educators should "wake up" case studies by organizing them around a common reflection framework that focuses on the individual planner's practical judgments. In using a common framework, students can compare practical judgments across different form of planning practice, settings, and planners' approaches.

A reflective focus on practical judgments reveals the critical choices, moving them from implicit, unstated habits of practice to practical judgments open for examination. Critical reflection on these judgments offers students an opportunity to consider other choices possible in the moment, and the merits of the judgments made. It also provides a window into examining the role of planner as a human agent, context factors for the planning episode, and planners' cognitive and emotional processes.

The paper is based on a book project that includes seven critically reflective cases (Reflective Planning Practice: Theory, Cases, and Methods, forthcoming fall 2020, Routledge). The paper presents the reflection framework used by the case authors, including the following elements.

- Axioms and assumptions that underpin the planner as person
- The planner's interpretation of context
- The use of logic and emotion in making practical judgments
- The application of convention and invention in making practical judgmentsThe paper then reports on interviews with case study authors, conducted after they had written their chapters. The interviews ask them about: (i) the usefulness of the reflective framework, (ii) their experience of reflection for the case study; and (iii) recommendations for structuring case studies so that they are most useful to students.

Lastly, the paper shows how one of the cases, an entitlement decision on a Transit-Oriented Development in Hawthorne California, was integrated into class material. This case was used in a planning communications class, supplemented with video from city council meetings, to make the specific practical judgments come alive. This case reveals how the focus on practical judgments leads back to substantive and procedural knowledge in planning.

The paper's key finding is that focusing on practical judgments holds the key to creating effective cases. Cases must provide an opening for students understand the choices made, consider whether they would choose similarly, and develop a storehouse of practice lessons that they can use in reflection-on-action during their practice careers.

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Key Words: Cases, Pedagogy, Reflection, Reflexivity, Practice

ASSESSING THE DEMAND FOR MUNICIPAL PLANNING PRACTITIONERS: AN ANALYSIS 150 PLANNING ADVERTISEMENTS
Abstract ID: 830
Individual Paper Submission

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Central Theme / Planning Issue / Problem

Planners play an important role in helping to develop and manage communities. Planners are expected to possess specific skills and knowledge that equip them to complete a range of tasks, from conducting planning studies to engaging the broader community in planning. There is an expectation that planning schools, specifically those accredited by the planning profession, will provide the necessary training to ensure planners succeed. Similarly, the planning industry, particularly within the municipal sector, is actively engaged in recruiting skilled practitioners. The aim of this paper is to examine whether the skills and knowledge demanded by the planning industry aligns with the training provided by accredited planning schools. The paper investigates the question: what are the planning-relevant qualifications in demand by Canadian municipal governments?

Approach and Methodology

We collected 150 municipal planning employment advertisements from across Canada between 2018 and 2019. Advertisements were retrieved from various websites including the Canadian Institute of Planners, provincial planning chapters (e.g., Ontario Professional Planners Institute and Planning Institute of British Columbia), municipal websites, and other municipal organisations. The advertisements were coded and analysed to assess municipal government expectations regarding the education, specific knowledge areas, professional qualities, skills and tasks of planning practitioners. We compare the core functional and enabling competencies specified by the Canadian Institute of Planners, which is used as the basis for accrediting planning schools, to the skills demanded by the planning industry.

Major Findings

Our analysis revealed that municipal employers consistently demand qualifications that are directly linked to the competencies for professional planners as specified by the Canadian Institute of Planners. We found that most municipalities sought planning practitioners with a university degree – undergraduate and/or Masters. The most frequently cited academic discipline was planning. The majority of advertisements tended to target senior and junior professionals, with roughly half of advertisements seeking candidates with 3+ years of experience followed by 1 to 3 years of experience.

Most advertisements required that candidates possess knowledge of planning legislations, general planning processes and planning methodologies. Candidates were also expected to have technical knowledge regarding official plan and zoning by-law amendments, subdivision and site plan approvals, and be able to interpret technical plans and drawings.

The top skills expected of municipal planning practitioners were strong written and verbal communication, advanced computer skills, strong interpersonal skills, ability to make effective presentations, and analytical capacity. These skills generally align with the core competencies specified by the Canadian Institute of Planners.

The majority of advertisements expect planners to advise and provide recommendations to municipal councils and various committees on a range of planning matters. Over half of advertisements require planners to process different planning applications, including official plan and zoning amendments, site plans, draft plans of subdivision, minor variances and severances. Planners are also expected to write various reports, conduct research on planning matters, and liaise with numerous stakeholder groups.

Relevance and Implications to planning scholarship, practice and education

The finding from this research is important because it illuminates the planning-relevant qualifications in demand by Canadian municipal governments. This includes municipal government expectations regarding the education, specific knowledge areas, professional qualities, skills and tasks of planning practitioners. This research will be useful to planning practitioners and planning students hoping to hone

their skills and knowledge. Planning educators will also find this research valuable when developing courses that aim to strengthen students' skills and knowledge of planning.

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Key Words: Planning education, Planning practice, Planning qualifications, Planning skills, Municipal governments

TOWARDS A NEW GENERATION OF URBAN PRACTITIONERS: DIVERSITY AND INCLUSION
Abstract ID: 863
Individual Paper Submission

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The ongoing global urban transition, led by cities in the Global South, presents one of the defining development opportunities of the 21st century. Although cities have emerged as global economic platforms for production, innovation and trade, urban areas are also more unequal than they were 20 years ago: 75 per cent of the world's cities have higher levels of income inequalities than two decades ago (UN Habitat, 2016). New knowledge paradigms are vital to address the sustainable and inclusive urban development opportunities of the 21st century, and these need to be reflected in pedagogical approaches that can create a new generation of urban practitioners that are equipped to deal with these challenges. These new knowledge paradigms need to mirror the regional diversity, plurality and complexity of urban systems, urban residents and urban experiences, these challenges and the key actors and stakeholders embedded in them.

In order to enable these knowledge paradigms to have an impact on urban inequalities, it is not only curriculum and pedagogy that need to be addressed, but also who is in the classroom. Traditionally, the university as a space of learning has been a space of privilege, notwithstanding more recent efforts towards affirmative action in different forms across the world. While the question of affordability is linked to the financial structuring of universities, however, the admissions process is also a critical lever in enabling diversity in the classroom. In this paper, we present the process and results from an approach towards admissions that we have adopted for a 4-year old teaching Fellowship on urban practice, taught at the Indian Institute for Human Settlements in Bangalore, India. In an Indian context of deeply rooted inequalities along multiple dimensions, the question of diversity in the classroom takes on particular importance. Our hypothesis is that IIHS' mission of transforming Indian cities rests critically on our ability to enable diversity in the classroom, since this is fundamental to shaping urban practices that can challenge urban inequality.

The admissions process for the Urban Fellows Programme is designed to select an incoming class that has two kinds of diversity. The first is disciplinary diversity and a mix of core methodological approaches within disciplines. This diversity is core to IIHS' pedagogical values of imagining urban practice across

disciplines and domains of practice. In IIHS, there is a shared acceptance of inter-disciplinary exploration and engagement as valuable to the understanding of urban issues.

The second kind of diversity is that of identity, socio-economic status and more generally, life experience. The UFP admissions policy places diversity in the classroom as a valuable end in itself which enriches the learning environment by bringing diverse life experiences into the classroom. Further, there is recognition of historical inequalities and hardships in society.

As an outcome, we find that our admissions process has enabled us to curate greater diversity in the classroom, it affects our pedagogy, facilitates peer-to-peer learning and it fundamentally reshapes the conversation in the classroom. We find that it overall affects our Fellows' pathways into practice after the programme, and enables them to become more sensitive and reflective practitioners.

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Key Words: Planning education, Admissions policy

ON TEACHING CRITICAL THINKING: CENSUS 2020 AND THE CITIZENSHIP QUESTION
Abstract ID: 955
Individual Paper Submission

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Central Theme. Teaching critical thinking skills to students is an ongoing challenge, even more so with the current "No Child Left Behind" generation of students. They have become accustomed to mastering the material presented and repeating it back in papers or exams—which Chaffee calls "the lowest cognitive level of knowledge, the dispensing of facts" (1992, 121). Critical thinking, in contrast, employs "higher intellectual operations (such as application, analysis, synthesis, and evaluation)" (1992, 121).

This paper examines the use of a variety of media sources that addressed the controversy surrounding the Trump administration's proposal to include in the 2020 Census a question about whether or not a respondent is a U.S. citizen. Undergraduate students in an urban and regional theory class collected news articles covering "the census question," shared them digitally, and read each article. Each student was assigned to identify "clues" within each article that (1) provided information about use of facts vs. opinions and (2) identified any political bias in each article. They then wrote a 3-5-page paper in which they identified patterns in the two dimensions above and discussed real-world implications of the different positions.

Objectives. This paper will provide evidence of an effective way to teach students about political bias in news sources. It also provides evidence on how this exercise can change student views about the topic being examined, in this case, the U.S. Census. Finally, it provides insight into teaching students about qualitative (content) analysis (without labeling it as such).

Approach and Methodology. The paper will begin with a brief summary of the instructor's use of Ad Fontes Media's Media Bias Chart (2020) to identify publications based on overall source reliability and political bias. Their interactive version (5.0) classifies approximately 90 media sources on two continuous scales. Students found and shared about 30 articles on "the citizenship question" and analyzed them for content that signaled fact/opinion (four categories) and political bias (five categories). The papers they submitted and the language they identified as indicating where the particular article falls will be analyzed. Of particular use will be a comparison of where they placed the news source on the 4x5 matrix and how close they were to the Ad Fontes Media analysis. Student appendices with their content analysis will also be examined to reveal any patterns in how they interpret certain words and phrases. Next, student responses to two ex post questions will be examined: (1) What did you learn about the Census in this exercise? (2) What did you learn about the news media? Finally, the paper will discuss the effectiveness of the exercise as an experience in critical thinking.

Main results. The main result will be that the students adjudge articles to be more extreme that does Ad Fontes Media (further left or right on the political spectrum). Their evaluation of words and phrases is accurate, but their ability to spot linguistic "flags" that belie political stance is weaker. Regarding their knowledge of the Census, students will have learned more about its purpose and operation and, more importantly, to appreciate that even (the objective) Census can have bias built in. As to the media, the results will show that students will have become more careful—and critical—readers. In terms of critical thinking, similar exercises on other contemporary planning topics can be developed.

Relevance. Ultimately, this examination will introduce a concrete method for incorporating qualitative research methods, media literacy, and critical thinking into a variety of courses offered in a planning/urban studies curriculum. For students, the exercise may enable them to more critically understand urban planning and policy as it unfolds around them.

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Key Words: Planning pedagogy, Critical thinking, Qualitative analysis, Media literacy, Census 2020

TEACHING URBAN REBELLIONS AS PEDAGOGY FOR AN ANTI-RACIST PRAXIS
Abstract ID: 956
Individual Paper Submission

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My presentation will reflect on insights gleaned over several semesters teaching courses on possibilities of subaltern stories of urban rebellions to reframe the dominant white racial frames (WRF) that many undergraduates use to apprehend racialized urban inequalities. I will offer a glossary of place specific antiracist concepts that students acquired as useful indexes for evaluating their understanding of the urban origins of racialized policing, surveillance, re-segregation and privatization of public places and services. Specifically, it will reflect on the power of story mapping and possibilities of my Freirean, Fanonian and Black feminist inspired anti-racist pedagogy to realize the learning objectives below -

- Understand 'race' as a social and historical product of racist state projects and struggles against social inequalities and spatial segregation.
- Understand the WRF as the foundational violence of systemic and everyday racist violence.
- Understand how spatial practices like zoning reproduce racialized exclusions.
- Create a story map of place specific struggles against racialized inequalities.

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Key Words: Racialization, Segregation, Subaltern Social Movements, Urban Rebellions, White Racial Frame

YOUTH, FAITH, AND GENTRIFICATION IN TORONTO'S REGENT PARK
Abstract ID: 972
Individual Paper Submission

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Urban studies researchers across the world have been studying Regent Park's billion-dollar redevelopment process and how the newly "revitalized" mixed-income neighborhood has affected long-time social housing residents, who are primarily Muslim immigrants (Brail and Kumar, 2017; August, 2014; Laughlin and Johnson, 2011). However, few of these studies incorporate the perspectives of youth. This article analyzes the pedagogy of a Winter 2019 course in which undergraduate Urban Studies students and youth members of a neighborhood media arts non-profit collaborated to ask the question: "Who is this revitalization really for?" The class was committed to principles of "knowledge justice" and participatory action research (PAR) in which academics and community residents are collaborative partners in the process of designing an inquiry for the purposes of social change (Torre et al, 2012).

The two groups of students envisioned and co-produced their own media projects addressing revitalization and gentrification in Regent Park from the youth perspective. These projects included a podcast which explores how the Rap and Hip Hop culture of the neighborhood disintegrated during redevelopment; a YouTube mockumentary that exposes how inaccessible the neighborhood's new public amenities are to long-time social housing residents; a zine documenting subversive art and memorabilia of the rapidly changing neighborhood; a photography exhibition that counters mainstream media stereotypes; and an interactive timeline that embeds the life story of one Regent Park youth resident into the history of the redevelopment and its accompanying academic scholarship.

Analysis of these media projects, participant observation, focus groups, and students' written reflection reveal that the media, academic scholarship, and practitioners have missed an important aspect of Regent Park's story: the role that Islam plays in the lives of social housing residents, especially youth. This research examines how the students collaborated to reach these findings and argues that religion deeply affects the way one experiences the built environment and should be better accounted for in redevelopment planning processes.

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OBSERVATIONS ON RACIALIZED INEQUALITY IN THE MIDDLE EAST AND AFRICA: INSIGHTS FOR PLANNING RESEARCH AND EDUCATION
Abstract ID: 1014
Individual Paper Submission

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Extensive and systematic research on racialized inequality in the United States and a few other Western countries has provided insights into the phenomenon and guidance for remedial public and corporate policies and initiatives (Conyers, 2002). However, the knowledge from the research on racialized inequality in the West seems inadequate in understanding the phenomenon in parts of the world where the perceptions, experiences and overall 'realities' of the phenomenon differ remarkably from the West's (Schwarz et al., 2020; Al-Gharbi, 2019). This paper examines what it terms dimensions and perceptions of the social phenomenon that racialized inequality is in the Middle East and Africa (MEA), two geopolitical regions where the constellation of culture, tradition, political history, governance and economics presents a picture of racialized inequality, and reactions to it in the public, corporate and grassroots domains, quite differently from the West's. Across MEA, the contention in this paper is that racialized inequality remains a smothering and latent phenomenon that cannot be ignored but must be addressed tactfully in planning research and education. Which, or does any, of the existing main theoretical constructs of racialized inequality explain the phenomenon in MEA? What is the current state of research and education on racialized inequality in MEA? What are implications of the state of the phenomenon in the MEA for planning research and education in the region? These are the main questions that this paper will aim to answer, using evidence-based data from secondary sources or literature, from conversational discussions with willing informants in the region, and from 12 years of firsthand or personal experience and observations by the author in MEA. The paper will conclude by deciphering specific insights that can inform and improve planning research and education on racialized inequality in MEA.

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INDIA'S URBAN PLANNING CURRICULUM: PLANNING OR MARGINALISATION?
Abstract ID: 1186
Individual Paper Submission

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Considerable literature exists that exclusionary development in the form of slums, informal settlements and poverty in India and many developing countries are a result of faulty, bureaucratic and unwieldy Master Plans, a product of colonial style urban planning. Urban planning in terms of education is a comparatively new discipline in India with only 16 universities hosting planning programs. Examining the syllabi of urban planning curriculum in 4 public and private universities and the Model ITPI syllabus, this paper finds that despite much of the debate on inadequacies of the spatial or master plan, "field studios", a standard pedagogical tool of planning programs that focuses on scales of planning from zonal to regional planning remains central with an equal number of credits given to it vis a vis all the theory subjects. In contrast the paper finds subjects that lean towards equity based scholarship for the poor like public participation, informal settlements, decentralisation of governance, affordable housing are yet to be mainstreamed and are practiced in few (new) universities like Centre for Environmental Planning and Technology, and Indian Institute of Human Settlements. Concerns of social justice and specially so in the context of new urban policy developments like Smart Cities and AMRUT plans, continue to be undermined over "technocratic" master planning ones in urban planning curriculum. The paper discusses how antiquated recruitment rules formed during colonial times, and lack of protection of planning profession specially in private universities leads to increased hiring of professionals, who have spatial planning mentality and lack "critical enquiry" skills over planners, thus sustaining privileged power structures and creating marginalisation and peripheries in urban areas.

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Key Words: Urban Planning Curriculum, Inclusive Development, Smart Cities

THE FLORIDA RESILIENT CITIES PROGRAM: AN INTERDISCIPLINARY APPROACH
Abstract ID: 1292
Individual Paper Submission

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The Florida Resilient Cities (FRC) program helps communities across Florida develop the capacity to be more prepared for, and more resilient to, increased risk. Led by The Florida Institute for Built Environment Resilience (FIBER) at the University of Florida (UF), the program bridges community needs with design research through the College of Design, Construction, and Planning (DCP), partnered with faculty from across UF. The FRC resilient communities process 1) empowers and synthesizes values and goals of a broad range of stakeholders, 2) incorporates dependable baseline data reflecting future

conditions, and 3) builds local capacity to champion, fund, and implement projects. Through collaborative research projects, access to data analytic tools, community planning and design, FRC is helping Florida meet the challenges that lie ahead.

This paper reflects on the first year of FRC and examines the use of interdisciplinary methodologies such as public interest research and design, design thinking, communication and engagement to tackle the complex problems of disaster recovery and resilience planning. A comparison of methods is used to evaluate the FRC process and to examine how interdisciplinary teaching and research can 1) provide a more influential learning experience for students and 2) provide a thoroughly responsive process for communities in developing resilience strategies.

The FRC focuses on one community partner per year, in an initial 15- to 18-month collaboration. Through a generous grant from the Jessie Ball DuPont Fund, the first project is focused on the City of Port St. Joe's recovery from 2018's Hurricane Michael and long-term resilience. The first FRC team comprises FIBER, the Shimberg Center for Housing Studies, and the Center for Landscape Conservation and Planning. The FRC team has directed approximately $50,000 for eight research projects and academic courses that emphasize challenges identified by the community during fall workshops.

The Community Narratives research group comprises three teams who are focusing on community significance, the strength of social networks and the building of resilience as it relates to historic neighborhoods, natural resources and place-making. The Built/Natural Landscapes research group comprises three teams who are focusing on green infrastructure, stormwater management, sustainable park systems, and home-sharing as factors in building resilience for Port St. Joe residents and tourists in both everyday life and extreme or crisis conditions. The FRC is also supporting two independent courses, an interdisciplinary field course and a modular housing design and construction studio.

The projects were coordinated by FRC to tap into interdisciplinary thinking across multiple colleges within UF. In addition to the FRC team, project collaborators include Civil and Coastal Engineering; the Tourism and Crisis Management Institute; Levin School of Law; the College of Liberal Arts and Sciences; the Florida Climate Institute; and the School of Journalism and Communications. All research teams are working in Port St. Joe throughout the Spring semester, culminating in a community presentation and implementation summit, during which the community provides feedback on next steps for furthering design, applying for additional project funding, and/or developing implementation plans.

The "wicked problem" of climate change offers a complexity that students in the built environment disciplines should understand through multiple lenses. Combining the liberal art of design thinking with the long-standing planning ethic of public interest can create more thorough assessment of existing conditions and community needs, and an iterative process that reflects the cycle of resilience building. This initial assessment of the Florida Resilient Cities program will provide insight for the second year of the program, both in teaching methodology and community engagement practice, and as a basis for future program evaluation.

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Key Words: public interest, design thinking, resilience, interdisciplinary

PLANNING PEDAGOGY FOR RESILIENT COMMUNITIES: LESSONS FROM THE BUFFALO NIAGARA REGION'S CHAMPIONS FOR CHANGE PROGRAM.
Abstract ID: 1324
Individual Paper Submission

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Situated within socially segregated and ecologically fragmented regional landscapes and confronted by the challenges of climate volatility and racial inequities, how can we, as planning educators, prepare planning professionals and diverse regional community leaders to expand their collective capacity to advance social and ecological well-being and climate justice?

This broad pedagogical challenge is complicated by a number of issues and trends. First, issues of climate change and intersectional oppression are emotionally sensitive and pose differential threats to diverse groups of people. Past planning practices have induced traumatic stress reactions in neighborhoods, i.e., "root shock" (Fullillove, 2004). Emotional stress and trauma impede our collective cognitive capacities for creative thinking, long-term planning, and collaborative action. Operating under the influence of fear, we are more reactive and less trusting. Second, although professional planners learn to value diversity in theory, we less frequently have opportunities to engage productively with social difference in learning environments that cultivate trust and co-creativity, let alone develop competency in creating such environments in landscapes shaped by structural oppression (e.g racism, classism, sexism, ableism, etc) and associated social traumas. Third, despite over thirty years of planning schools including instruction in equity planning, advocacy planning, and participatory planning, planners today conform more often to a technical role in which they see themselves as value neutral experts, and less a political role, or even a hybrid role where they pragmatically use the tools most appropriate for the situation (Lauria, 2017).

In an attempt to address these regional challenges, the University at Buffalo School of Architecture and Planning and One Region Forward designed the "Champions for Change" (C4C) program, modelled off of other citizen planning academies in the country (Mandarano, 2015). C4C is an interdisciplinary for-credit course that partners students with diverse community leaders from the Buffalo-Niagara Region seeking to make change in their communities. The program is innovative in that it incorporates a variety of awareness-based practices informed both by contemporary findings in neuroscience, as well as the regions legacy of governance and leadership practices established by the Haudenosaunee (or Six Nations of the Iroquois). The Haudenosaunee participatory practices have in many ways laid the groundwork for our present-day democracy (Lyons & Mohawk, 1998). At the heart of the curriculum are the four practices of regenerative development as practiced and learned from the Haudenosaunee: Thanksgiving Practice, Law of Regeneration, 7th Generation Principle, and Great Law of Peace.

This paper presents 1) an overview of the pedagogical innovations of the course (and their theoretical basis in learning science), 2) research on the effectiveness of the program, and 3) exploration of the replicability of the program to places both within and outside of the bioregion. The research methods involve process-based assessment, participatory action research, and developmental evaluation. The program curriculum has a built-in assessment via an assortment of activities that examine each student leader and community leaders' progress towards the completion of their project plans. These findings will be complemented by follow up interviews with graduates of the program.

The research findings offer insight into how awareness-based pedagogical practices can support high-performing learning environments that foster collective creativity and collaborative action in diverse communities of learners. Awareness-based practices such as generative listening exercises helped cultivate trusting relationships. Findings offer insight about how universities, as anchor institutions, can best support civic infrastructure and the development of leaders who can positively impact regional actions towards a more just and flourishing future, both within the university and the broader community.

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Key Words: community resilience, community-university partnership, civic infrastructure, regenerative development, compassionate planning

TRACK 11 – PLANNING HISTORY

TRACK 11 – INDIVIDUAL ABSTRACTS

AFRICAN AMERICAN VOTING AND CIVIL RIGHTS ACTIVISM: HOW AFRICAN AMERICAN VOTER REGISTRATION SHAPED URBAN RENEWAL IN MONTGOMERY, ALABAMA
Abstract ID: 42
Individual Paper Submission

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The research question addressed in this paper is: what was the connection between the civil rights activism, including African American voting, and Urban Renewal in Montgomery, Alabama, USA, in the 1950s and 1960s?

The U.S. Housing Act of 1949 created the Urban Renewal program, allowing cities to acquire blighted areas and clear them for redevelopment, then sell the land to developers. The federal government initially paid 75% of the cost of the program. In 1954 the Housing Act provided more incentives to developers in urban areas to undertake urban redevelopment, including federally-backed mortgages, and termed the program Urban Renewal. The U.S. Urban Renewal program is well-known for targeting African American people and neighborhoods in cities throughout the U.S.

In the South, Urban Renewal also coincided with some of the most famous events in the U.S. Civil Rights Movement. In Montgomery, Alabama, African American neighborhoods were designated as 'blighted' and targeted for demolition as early as the 1940s, and many of the neighborhoods that were designated as blighted were home to prominent civil rights activists. This paper explores the history of urban renewal in Montgomery, Alabama, and argues that the designation of blighted neighborhoods and urban renewal areas in the city was in response to increased African American voting and civil rights activism among people who lived in those neighborhoods. The paper also chronicles the wide-ranging disinvestment in African American neighborhoods through the planning processes into the 1970s.

The method used in this research is an analysis of archival data related to urban renewal and the Civil Rights Movement in Montgomery, Alabama. The article also utilizes lists of African American voters from 1950 to 1968, Urban Renewal maps, and addresses of registered voters from historic city directories, to analyze the overlay of Urban Renewal areas on the homes of African American voters and civil rights activists. The paper argues that there was a significant overlap of urban renewal designations and African American voters, and this overlap was an intentional strategy to disenfranchise African American voters and remove them from the city.

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THE POLITICS OF PROCESS: EXPLAINING THE REVIVAL OF PROVINCIAL PLANNING FOR THE TORONTO REGION IN HISTORICAL PERSPECTIVE
Abstract ID: 153
Individual Paper Submission

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In 2005 and 2006, the Ontario provincial government enacted an ambitious regional planning regime for the "Greater Golden Horseshoe" region centred on Toronto, a vast area containing one-quarter of the Canadian population. The planning regime contains several linked elements, including a set of enforceable policies governing suburban land subdivision and the densification of established urban areas, as well as the protection of a rural "greenbelt" bisecting the region. This program is significant, both locally and internationally, due to its interventionism in land markets, its large geographic scale, and the strength of its legally binding mandates on local governments. It has also proven durable despite changes in governing party leadership and party in power and the ups and downs of the business cycle.

The enactment and ongoing implementation of this program is unexpected given past regional planning failures. Drawing on extensive interview, documentary, and archival research, I argue that the development and enactment of this regional planning regime was enabled by innovations in process rather than product. This paper documents the development of the Greenbelt and Growth Plan between 2000 and 2006 and compares it to a little-studied previous provincial government-led regional planning effort: the development of, and failure to enact, a set of Greater Toronto Area planning guidelines and binding policy statement (1988–95). I show that the earlier exercise was led by provincial public servants. There was only limited engagement with the primary stakeholders of planning policy: property developers, environmentalists, farmers, and local governments. As a result, the project garnered little political support and disappeared from view. In 2000–2003, an anti-planning, market-oriented, and populist Conservative government initiated a new regional planning process that broke this technocratic mould by adopting a highly visible and inclusionary approach to securing the input, agreement, and support of key stakeholders, including municipal leaders, property developers, environmentalists, and farmers. The goal of this interest-based negotiating process was to prioritize infrastructure investment projects. After 2003, the centrist Liberal Party retained the inclusionary process while redirecting it toward the development of conventional regulatory land use planning instruments. The policies ultimately enacted in 2005–06 were similar to those previously proposed by planners, however the open process provided a forum that, by virtue of giving key groups ownership over the policy problem and its framing, conferred legitimacy on latent planning knowledge. The paper concludes with a discussion of the framework's durability despite economic and political change.

This case is significant because it highlights the enduring distinction between metropolitan/regional and local/urban planning. As Fishman (2000) has noted, regional planning has proved largely immune to the participatory revolution that has occurred in community planning since the 1960s. In the Toronto case, the provincial government innovated an interest-based negotiating process that unlocked a durable, politically acceptable solution, exemplifying what Margerum (2011) characterizes as a policy collaborative. The social learning process, which emerged through the collision of the government's populist political agenda with the idiosyncratic experiences of key bureaucratic and political actors, facilitated the formation of trust and respect among disparate actors while constructing a shared understanding of problems and solutions. This account differs from and complements work by Sandberg, Wekerle, and Gilbert (2013), which focused on nongovernmental activism, by revealing the motivations and actions of political and bureaucratic actors.

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Key Words: Toronto, Ontario, interest-based negotiation, collaborative planning, regional planning, social learning

RUTH GLASS IN LONDON: GENTRIFICATION AND THE FAILURES OF POST-WAR TECHNOPLANNING
Abstract ID: 169
Individual Paper Submission

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It seems today that no writing about gentrification can begin without first referencing or quoting the infamous paragraph from which the word first appears. And this is a shame. The context offered by author and sociologist Ruth Glass has more to offer than just a word or paragraph reproduced. Her chapter is fundamentally a work of discovery, proceeding from observations of a transitional, post-War London. It is a response to theories around social Darwinism and the "Malthusian" city, and it sparked a rich lineage of debate and inquiry around urban change. What was Ruth Glass observing in London that others failed to recognize and why did it require an epistemological distinction?

This paper examines Ruth Glass' introduction to the anthology London: Aspects of Change by analyzing the Greater London Plan of 1944, the New Towns Act 1946, and the Town and County Planning Act 1947. Glass attributed the gentrification of London to all three measures (Glass, 1964); however, outside of her footnotes, they have not been examined in this context. This paper also recontextualizes cultural references and quotes that Glass relies on to bolster her argument. This multi-phased qualitative method helps excavate meaning and intention from a chapter that is so often quoted but rarely read closely.

This is not a story about displacement, though it does exist. Glass' "gentrification" is a historically-contingent artifact stemming from a series of technological advancements that restructured urban life faster than society could keep up (Ellul, 1973). Her chapter is a critique of early planning, a technology she perceived was wielded outside of its capabilities in a misguided attempt to control and limit inevitable growth. While some praise these measures as a means towards a unified, deontological class politik (Bell, 2000), Glass perceives them as an effective way to consolidate power to the élites and obscure claims for equity and justice.

This research combines historical planning practice with literature on gentrification and techno-politics. Through the lens of gentrification, this history can reveal insights into the causes and consequences of planning best practices. This paper concludes by asking for a renewed focus on the strengths, capabilities, and potential consequences of contemporary planning interventions.

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Key Words: gentrification, London

PONTE: STRUCTURAL REAPPROPRIATION AND INSTITUTIONAL REFORMATION IN EMERGING JOHANNESBURG
Abstract ID: 250
Individual Paper Submission

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Completed in 1975 at the height of Grand Apartheid-era ambitions, Ponte City is a hollow, cylindrical residential tower looming over northeast Johannesburg, South Africa. The racialized utopian imaginaries underpinning Ponte's design and its subsequent construction represent a concrete manifestation of the most panoptic of apartheid ideologies and desires: paranoid regulation and control of space, racialized inequality in social relations and reproduction, and an intense desire to shape South Africans' subjectivities (see Foucault 1978). Ponte illuminates aspirations of high modernist architecture and planning in midcentury South Africa, at the scale of a single building (J. Scott 1998). In this inquiry, I ask: how has the modernist Ponte City apartment complex been adapted and repurposed over time, and how do changing uses and perceptions of this building intersect with broader political and economic changes in Johannesburg and South Africa? To answer these questions, I problematize Ponte's formal structure, its architects, and the building's early reception using archival methods and a media analysis. I particularly draw on a close reading of a 1975 Planning & Building Development report from the building's architects, contractors, and management team. I analyze Ponte as a planning intervention in an era of modernist developmental world-making (F. Scott 2016), and then examine the building's multiple subsequent reappropriations since the pacted transition from apartheid governance to neoliberal post-apartheid democracy. In so doing, I consider global governance struggles against hegemony and apartheid, arguing that Ponte City represents both a key public site of apartheid-era ambition, of racial paranoia in the postaparthied era, and of counter-conduct and resistance both during and after apartheid (Mitchell 2002). Written, audio, visual, and cinematic media narratives about Ponte from the 1970s to the present day enliven the ways that Ponte City and its form have been inhabited with new and layered aspirations (Larkin 2018). I conclude by situating Ponte in a contemporary Johannesburg context laden with inequality and gentrification, eviction and urban dispossession, and renewed postmodern dreams of high-density residential living. In complex and often paradoxical ways, and across distinct institutional arrangements, I find that Ponte City as a building reflects, absorbs, and renders meaningful historical and ongoing struggles for power, dignity and livelihood in the City of Gold. Following the case of Ponte City, the planning practice should take seriously the role of significant singular built structures in shaping and in turn being shaped by environments of governance.

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Key Words: apartheid, high modernism, urban form, governance, Johannesburg

THE EVOLUTION OF THE COMMUNITY DEVELOPMENT POLICY SYSTEM IN THE UNITED STATES: FROM ROBERT KENNEDY TO RUBE GOLDBERG
Abstract ID: 304
Individual Paper Submission

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In the 1960s and 1970s a powerful neighborhood movement rose in opposition to federal programs, including urban renewal and highway building, which had devastated older urban neighborhoods. Gradually, the movement shifted from opposition to destructive policies to support for an alternative community development policy system. This paper traces that evolution of that policy system over the past half century.

A key moment in the transition from protest to programs was the formation of community development corporations (CDCs), nonprofits dedicated to revitalizing specific neighborhoods. Many community-based organizations spun off CDCs to implement locally controlled community economic development initiatives. In 1967, Sen Robert Kennedy helped pass the Special Impact program which in its first five years provided $855 million (in 2019 dollars), mostly for direct aid to urban and rural CDCs. The number of CDCs grew from less than 50 in 1970 to about 700 in 1978. (There are probably over 5,000 CDCs in the U.S. today.) In the 1970s, conservatives co-opted the language of neighborhood control, leaving little room for strong robust federal neighborhood policies, and after the election of Ronald Reagan in 1980 federal funding for community development plummeted.

Surprisingly, the community development movement did not shrink; instead it grew into something different: a community development industry -- with professional standards, credentials, and job ladders. Government support for this new industry shifted from policies with strong federal controls to policy tools that enterprising local actors could pull of the shelf and use with a great discretion. The passage in 1986 of the Low Income Housing Tax Credit (LIHTC) was a key moment. As the public housing inventory has shrunk, LIHTC has become the main program for producing new units of affordable housing. Tax credits are usually combined with other subsidies, such as CDBG and HOME funds, housing vouchers, local tax abatements, etc. The average CDC-sponsored project has about eight separate subsidies layered within it. The community development system resembles nothing so much as a Rube Goldberg machine: a dizzying array of policies tools must be wielded in complex sequences to execute a project.

What was forged largely out of political necessity has been gradually elevated into a virtue. The old top-down, government-directed community development approach has been criticized for mass producing sterile communities (think urban renewal or public housing). In place of this, according to proponents, we have evolved a system of flexible specialization that can fine-tune products to local communities utilizing public-private-nonprofit partnerships. The necessity of coordinating complex actions by so many different actors would seem to be the Achilles Heel of the community development system. Proponents argue, however, that community development practitioners have evolved dense networks that accumulate sufficient stores of social capital, or trust, to solve problems of collective action. Community development is not run by government but by a sophisticated system of network governance.

The paper concludes by examining the (often under-recognized) weaknesses of the tool-based, network governance community development system. Instead of addressing spatial inequalities, too often, the network governance system reflects them. Costly and complex implementation means that communities need sophisticated nonprofits to succeed. The poorest neighborhoods often lack them. Intermediaries, such as LISC, Enterprise, and Living Cities, which were designed to address this problem, do not come close to leveling the playing field. With philanthropies and supportive private actors unevenly distributed, key catalytic funding is lacking in many communities. Finally, the whole system is woefully underfunded. Without stronger government regulation and funding, drawing from an earlier era of community development policies, the community development system will be unable to address the challenges of increasingly divided cities.

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Key Words: Community development, neighborhoods, community development corporations, inequality, network governance

UNDERSTAND THE GENEALOGY OF PLANNING AND SPATIAL EXPRESSION IN POSTCOLONIAL SRI LANKA
Abstract ID: 333
Individual Paper Submission

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Urban spaces in postcolonial nations should not be taken as given, as self-evident. Instead, they are discoursed and contested within specific political, cultural, and historical contexts (see Perera 2004; Kusno 2007; Yeoh 1996). This paper demonstrates how the postcolonial spatial expressions in independent Ceylon (Sri Lanka since 1972) was shaped by the colonial knowledge of space and the Sinhalese Buddhist nationalist contestation of their spatial identity. To achieve this, we examine the making of the first town plan in postcolonial Ceylon, i.e., the Anuradhapura new town in 1949. The findings of the study contribute to the scholarship of nationalism and postcolonial urbanism. Notably, from the standpoint of social space.

Anuradhapura is the most ancient and vital sacred site for Sinhalese-Buddhists and is intimately connected with their cultural, religious, and historical. Influenced by nationalists, one year after independence, the Ceylonese government inaugurated the Anuradhapura new-town planning project on a site a few miles away from the location of ancient sacred monuments. The new plan reflects the Sinhala-nationalists' belief in their authority to "protect" Buddhist sacred spaces by removing incompatible practices –including secular ones-- from the site.

The new town planning also marks the location where Sinhala-Buddhist nationalist thinking met the postcolonial spatial expression. Although Anuradhapura has become a subject of interest for many historians, sociologists, anthropologists, and archaeologists due to its historical and cultural significance, there is no substantive knowledge about the making of the planning project and its impact on the Sinhala-Buddhist spatial organization (geography). This study fills this gap by investigating how the new-town project negotiated different standpoints and tensions of nationalist politics and the needs of the emerging nation.

The findings are derived from textual analysis, participant observations, and in-depth interviews with the professionals conversant with the project. Besides, we conducted a series of interviews with inhabitants in Anuradhapura to learn about the planning of the new town and its effects from local people, both descendants of inhabitants affected by the plan and newcomers.

By having a better understanding of the intersections of historical, cultural, religious, and national politics in shaping the modern planning and spatial thinking in Sri Lanka, this research will draw on and

contribute to the established field of Sri-Lankan postcolonial social space. By producing a discussion on how postcolonial urban spaces and their transformations can be substantive research subjects, the study contributes to the broader scholarship of postcolonial urban studies(see King 2006; Jazeel and Legg 2019).

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Key Words: Postcolonial Urbanism, Anuradhapura New Town, Ceylon, Spatial Expression, Nationalism

LIVING WITH RISK IN PUERTO RICO: DISASTERS, PLANNING AND THE HAZARDS OF COLONIAL EXPERIMENTATION
Abstract ID: 336
Individual Paper Submission

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In this paper, I critically analyze terms like "risk" and "resilience", through numerous planning and related literatures (Vale and Campanella 2005, Roy 2011) as a point of departure for a more detailed examination of the intersections between colonial experimentation and post disaster recovery.

As a colony of the United States, Puerto Rico has been the site of several governance experiments carried out by the Federal authorities. Previous scholarship (Torruellas 2018) has underscored how the Foraker Act of 1900—which established a civilian colonial government in the island—, the Jones Act of 1917—which, among other things, extended US citizenship to the residents of Puerto Rico—,the adoption of the Commonwealth status in 1952, and the 2016 passing of the Puerto Rico Oversight, Management and Economic Stability Act—which imposed a control board tasked with addressing fiscal problems —have imposed a series of governance frameworks that have perpetuated an unequal colonial relationship.

The paper expands the discussions on colonial experimentation through an in-depth examination of the federal rules and programs for post hurricane reconstruction and the neoliberal adjustment policies that are currently being deployed in Puerto Rico. In addition, it demonstrates, through historical research, how planning, and a distinct planning mentality (Boyer 1997) has played a fundamental role in this long experimental tradition (Hansen 1953, Tugwell 1968). The paper also explains how the simultaneous deployment of austerity initiatives and a massive reconstruction effort— a unique situation with few or no parallels—is generating new challenges for planning and increasing vulnerabilities in the midst of mounting disasters. Interestingly, these critical issues are rendered invisible through the strategic use of ideas like "resilience planning" and "risk management".

The analysis also sheds light on how the recent strings of disasters have become a "visceral catalyst" (Davis 2005) for several grassroots communities, which are responding and collectively building a community-driven recovery infrastructure that ensures that the historically marginalized and most vulnerable are treated with dignity and are also empowered politically.

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Key Words: Puerto Rico, Colonial Experimentation, Resilience, Austerity, Post Disaster Reconstruction

PLANNING INEQUITY: DESIGN DECISIONS AND ACCESS TO THE PUBLIC SPACE
Abstract ID: 353
Individual Paper Submission

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Community organizers advocate to "organize for the result you want." Planners often do the same through intentionality but also omission. This research illustrates how everyday planning decisions are the unseen fumes that fan the fire of racism in our cities. Systems of structural racism remain active in America, particularly through the placement and design of the built environment. Politicians, developers, and city planners have long used the built environment in cities and rural areas as a vehicle for exclusion of groups considered to be undesirable, which most frequently meant people of color or non-Euro centric ethnicities. This paper seeks to answer the question: "How have roads, buildings, and public spaces been used to reinforce exclusion and segregation?" It also seeks to uncover the questions not asked about ways that our laws and policies continue to perpetuate a system of exclusion. The obvious places to blame-- urban renewal, underfunded communities, social dysfunction--mask a continuing effort to design, replace, and situate the built environment to further exclusionary practices. The research examines
three historic sites where public space has been deliberately maneuvered to exclude certain communities: first, Preston Avenue in Charlottesville, Virginia, where a road redesign in the 1960s served as a barrier to surrounding communities for easy access to recreation and critical services; second, the analysis of Pittsburgh's Penn Avenue, which examines the changes in cultural identities of adjacent communities before and after urban renewal; and third, the archival study of one of the first recreational areas for African Americans in Virginia and West Virginia, now called Green Pastures, located in Allegheny County, Virginia. This paper argues that the motivations and location illustrate the behind scenes decisions and the creation of a "separate but equal" approach to public space that has been used as continuing exclusionary tool. Originally known as Longdale Recreation Area, a request in the 1930s from the NAACP to the US Forest Service created a park for the use of African Americans that was the only recreational area for Blacks across two states. The park opened in 1940 and was used widely by local African American communities until the present. Despite the successful creation of the park, the placement of the park was questionable. Much of the surrounding area was occupied by white communities, and the park was constructed in a remote location. Because of the limited highway system at the time, the park was difficult for African Americans to access. Using available archives, this paper speculates on the placement of streets, buildings, and parks that continue to generate 21st century planning controversies.

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Key Words: racism, inclusion, infrastructure, design, space

THE SHRINKING CITY IN HISTORICAL PERSPECTIVE: DETROIT, 1920-2020
Abstract ID: 604
Individual Paper Submission

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This paper argues for a new understanding of the shrinking city in the United States based on an analysis of Detroit's decline at the Census tract level over the past century.

In the early 2000s, when the shrinking city first emerged as a focus of urban planning scholarship, the members of the Shrinking Cities International Research Network chose an intentionally broad definition: "a densely populated urban area with a minimum population of 10,000 residents that has faced population losses in large parts for more than two years and is undergoing economic transformations with some symptoms of a structural crisis" (Hollander et al., 2009). Because this definition captured a wide range of cases across the globe, it encouraged international comparison and the sharing of best practices among practitioners working in disparate political contexts.

However, global cases vary widely with respect to the severity, endurance, and extent of decline. In the United States, many central cities have experienced continuous household loss for decades, even as their suburbs have grown. These cities are characterized by concentrated poverty, racial segregation, low educational attainment, elevated crime rates, diminished governmental capacity, and widespread property abandonment (Dewar & Thomas, 2012). Most are located in the post-industrial Rust Belt, and their decline is rooted in both deindustrialization and racism (Sugrue 2005). These facts make shrinking cities in the United States distinct from cases elsewhere, where deindustrialization is common but racialized abandonment is not (Hackworth 2019).

As a definition of shrinking city specific to the United States, Ganning and Tighe (2018) have proposed the following: Census-designated places with at least 50,000 people that have experienced a net loss of occupied housing units since 1970. This definition captures the eighty cities most often cited in published research. It is also advantageous for quantitative comparison, because digitized data is readily available for these cities from 1970 to the present. However, this definition fails to capture the full duration and extent of decline in many metropolitan areas of the United States.

In this paper, I propose an alternative conception of the shrinking city based on an analysis of tract-level Census data in Detroit from 1920 to 2020. This analysis reveals that Detroit's inner city was already in decline prior to the Great Depression—long before the "urban crisis" of the 1960s. By 1940, more than half the city's Census tracts were depopulating. Since then, the geography of decline has continued to

expand. Not only has the central city lost population in aggregate since 1950, many inner-ring suburban communities are also experiencing decline. This expanding zone of decline—once limited to the heart of the central city but now metropolitan in scale—is the shrinking city.

This conception of the shrinking city does not enable easy quantitative comparison—the historical Census data used in this study are not readily available for most metropolitan areas in the United States—so it should not supplant Ganning and Tighe's definition for most urban planning research. Nevertheless, it enables new comparisons across time and disciplinary boundaries. For example, this conception contributes to scholarship by historians and sociologists on the postwar decline of northern industrial cities by showing that decline began earlier than typically recognized, opening new opportunities for comparative research on the causes and extent of decline in different time periods. The tract-level geography of decline over the past century also suggests a new interpretation of the shrinking city: as a century-long backlash against the Great Migration.

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Key Words: shrinking cities, Detroit, urban crisis, deindustrialization, white flight

THE BUS WILL BE ALONG SOON: OPERATING SUBSIDY AND TORONTO'S TRANSIT REVIVAL, 1971-1989
Abstract ID: 645
Individual Paper Submission

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In both the United States and Canada, there has been ample federal and state/provincial funding for transit capital projects since the 1960s. (Jones 1985; Frisken 2007) However, federal funding for transit operations in the United States, and provincial funding in Ontario, were both ended in the 1990s. This has had significant consequences in both the United States and Ontario: numerous heavy and light rail projects have been built, but the service on those routes—let alone on the connecting bus network—is often very limited. This has led, in many cases, to stagnant ridership and little effect on the mode share of automobiles. This study will examine the case of Metropolitan Toronto in the 1970s and 1980s, when an infusion of provincial operating funding enabled the dramatic expansion of transit service—particularly in suburbs—and a lowering of fares. This produced unprecedented growth in transit ridership, despite far more modest rail infrastructure construction than comparable American regions like Washington and San Francisco (Mees 2009). It also led to a transit mode share that is virtually identical in the postwar suburbs as in the historic city center. Toronto's experience is also in contrast with American federal operating funding of the same period, which did not result in comparable increases in basic local transit service. The paper will explain the social, political, financial, and governance processes that enabled Toronto's unique path. In part, it owed to a metropolitan government that had come, through service improvements of the previous decade, to appreciate the viability of frequent transit service in suburbs. It also came from the absence of racism that so poisoned the relationship between city and suburb in that period in the United States (Bayor 1996). This study would provide a comprehensive history of the effects of operating

funding on Toronto's transit in the period, as well as a clear case that can be used to justify restoration of operating funding for transit in the present day.

The questions will be answered using historical research methodology. There will be extensive archival research at the Archives of Ontario and the City of Toronto Archives, as well as other archival repositories. It will also rely on interviews with senior political leaders, transit planners, and transit activists of the period.

This study has important implications for planning practice and for transportation policy, as it demonstrates a clear case in which operating funding produced the type of universal transit system that is essential to fulfill the right to equitable access to transit for all people (Attoh 2019). It also demonstrates that operating funding need not be a financial calamity for the system, as throughout the period, the Toronto Transit Commission maintained a fare recovery above 70%--a figure higher than any transit agency in the United States. Finally, this example of relatively modest operating funding producing major increases in transit ridership, even in auto-oriented suburbs, helps combat fatalism about transit's prospects and points the way to an important path for reducing the devastating impact of automobility on the climate crisis.

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Key Words: Transportation History, Public Transit, Toronto, Suburban Transit, Transit Finance

THE CONTESTED DESIGN-POLITICS OF TIANANMEN'S BEIJING: FROM FORBIDDEN CITY TO FORBIDDING SQUARE
Abstract ID: 746
Individual Paper Submission

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Tiananmen, both as a gateway to Beijing's Forbidden City and as an inspiration for a vast public square, reveals how the shaping of public space can become an extension of politics. In this sense, it is possible to speak not just of Beijing's Tiananmen but also of Tiananmen's Beijing. This paper, drawing on a wide variety of primary and secondary sources in both English and Chinese and illustrated by a succession of annotated and overlaid maps, traces the long evolution of the space south of Tiananmen as a locus of continual domestic and international political tension. The paper asks and answers the following questions: How has public space been constructed to serve political purposes and how has the performative dimension of that space—its rallies and its protests-- both reinforced and challenged those politics?

This single place has accumulated new meanings over hundreds of years: as a site for imperial rituals and as a place symbolically violated by the Western allied army's brutal entry into the Forbidden City following the "Boxer Rebellion" in 1900. It is a place for celebration marking the end of World War I and a focal point for the May 4th Movement that challenged the terms of the Versailles Treaty. It is a key site of strikes and spirited protests that erupted periodically through the 1920s, including what amounted to an outdoor political convention in 1925—all of this in uneasy tandem with staged celebrations. In 1935, the

space before Tiananmen served as a rallying ground against Japanese aggression but, in 1937, the triumphant Japanese used its very walls to declare their victory and spell out key policies. In 1945, following the defeat of Japan, Nationalist leader Chiang Kai-shek used Tiananmen to make his own power supremely visible, authorizing an enormous portrait of himself that blocked the middle part of the balcony. Then, following the ascendance of the Chinese communists and the declaration of the People's Republic in 1949, Tiananmen quickly—and literally—assumed the face of Chairman Mao. His portrait became a global icon—the backdrop for decades of mass rallies intended to show the might of the military and the loyalty of the people. And, after Mao's death in 1976, the space became the site of challenges to the regime, most famously and tragically resulting in the massacre of 1989. Since then, the PRC leadership has redoubled efforts to suppress memory of the carnage and instead re-establish the space in front of Tiananmen as a zone for celebratory display, all under careful surveillance.

Paralleling this story of political events and imagery, this paper discusses Tiananmen's physical transformation—both a place of control and a place where such control could be challenged. For five centuries before Mao, Tiananmen faced a narrow T-shaped open space, a walled enclosure with three closed gates--a place not yet called Tiananmen Square. The paper shows how the once-private imperial space in front of Tiananmen has been repeatedly re-invented as a place to display the reality of conquest, a place to visibly share the joys of victory, and a place for counter-government protest. Mao and his followers created a place for mass assembly and military display. Yet at the same time--as the pre-Mao Tiananmen space had long since shown--the very act of providing open space to gather at the key axial entry point to precincts of privilege also afforded a potential node for registering dissent. In China, as elsewhere, the exercise of control by those in positions of power has periodically caused counter-movements to develop in the very same places. No longer a passageway to a Forbidden City, Tiananmen became the historically-charged backdrop to a forbidding square.

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Key Words: design-politics, public space

THE FORMULA OF APARTMENT NEIGHBORHOOD UNIT - HOW TO TRANSLATE THE NEIGHBORHOOD UNIT INTO APARTMENT COMPLEX
Abstract ID: 824
Individual Paper Submission

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Apartment development is one of the main methods to build modern society after Korean War in 1950. Since the first apartment complex constructed in 1962, it has been considered as a solution to deal with fast growing housing demands and improve urban environment to build modern city of Seoul. A group of planners and architects added new modernist ideals in apartment complex, especially the neighborhood unit. This rule became a criterion to make a master plan of standard apartment neighborhood including modern public facilities. The original concept of neighborhood unit was translated into apartment complex, which increased density of housing units and public facilities. The neighborhood unit has been applied in apartment complex since the late 60s and transformed under different contexts and demands in

South Korea.

Apartment complex development in Seoul has been influenced by Clarence Perry's ideas of a neighborhood unit and Clarence S. Stein's plan of Radburn since the 1960s. The neighborhood unit plan was first applied in the Dongbu Ichon apartment development in 1966. This apartment complex planned to supply schools and commercial facilities in the center of apartment blocks. In addition, the designers of the Banpo apartment complex in 1971 intentionally placed its commercial strip along the main road and located small community spaces and parks within the apartment blocks. The apartment neighborhood unit likewise was materialized in the Jamsil development plan in 1974. A community plan based on a centered elementary school, including public facilities, was a rational decision for social life and administrative management. As a result, the Jamsil development plan was updated to a neighborhood plan, to make centered education facilities and separate pedestrian paths and vehicle paths. However, the commercial strip moved to the center of the complex, beside the schools and public facilities, to intensify the complex's internal network. The development plan of the Yeongdong (Gangnam) apartment district in 1976 was also based on the neighborhood unit, and the concept drawing of the apartment district showed more similarities with the Radburn plan. This concept drawing was applied on the master plan of the Yeongdong area that proposed 16 apartment district plans in different shapes and sizes.

The neighborhood unit for apartment development was consolidated for newtown development projects in the late 1970s and 1980s. Newtown projects transformed the neighborhood unit concept by combining it with new urban structures and systems. From the Mokdong development project in 1983, a linear urban structure was applied in apartment development. The Sanggye Newtown project likewise tried to apply improved neighborhood ideas in a large-scale apartment complex. It planned hierarchical traffic networks and separated pedestrian networks with open spaces that related to Perry's plan. The linear urban structure and overlapped system of community facilities became new neighborhood characteristics in the Bundang Newtown project in 1990s. This large-scale new town project proposed a systematic neighborhood unit plan within a super-block structure. Strong linear urban structures penetrated super-blocks, accommodating community facilities and neighboring commercial functions. These transformed neighborhood ideas have been developed by continuous newtown projects in 2000s. The linear community corridor and overlapped system have been kept in recent new town projects in Korea.

This research describes the translation of neighborhood unit into apartment complex based on case study. These applications consider gaps of cultural differences and ideals of modern society by apartment development. The neighborhood unit can be a key to see the transformation of typical apartment complex and understand standard neighborhood that modernist wanted to realize in Modern Korea.

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Key Words: Neighborhood unit, Apartment complex, Standard neighborhood, Engineer society, Public facilities

THE LEGACY OF INSTITUTIONAL RACISM IN TOWN-GOWN PARTNERSHIPS
Abstract ID: 844

Individual Paper Submission

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A range of studies examine the impacts university development and expansion have on adjacent neighborhoods, particularly lower income historically marginalized areas. While these tend to focus on modern practices in major metropolises in the US Northeast and Midwest (Carriere, 2005; Ehlenz 2016), few examine these impacts from a university's initial founding, and even fewer focus on this dynamic in small to mid-sized towns of the segregated South. Not only did local governments engage in structural racism to shape the segregated city, but major land grant institutions also made strategic decisions to promote and reinforce these decisions. Understanding the profound legacies of these decisions should inform current planning practice to appreciate the grievances and lingering distrust minorities have of local institutions, and to directly address the enduring injustices (Rothstein, 2017).

Using primary and secondary sources, including local plans, zoning codes, and maps as well as oral histories and fieldwork, this study applies a qualitative approach focused on an interpretive-historical methodology. Specifically, we examine a majority minority city in the deep South that emerged after the Civil War to attract what became the primary land grant university in Florida to buttress and grow the White population and marginalize the African American community. Subsequent policy and planning decisions made by the City of Gainesville and the University of Florida directly resulted in relocating and hardening the boundaries of the city's historically segregated neighborhoods.

Our historical findings begin with the recognition that Gainesville was a stronghold of Reconstruction in Florida. At this time, the Pleasant Street, 5th Avenue, and Porters neighborhoods were being established by the Black community with the Union Academy, a school founded in 1865 by the Freedman's Bureau, one of only two in the state. In addition, Josiah T. Walls of Gainesville was the first Black elected to Congress from Florida. In fact, until 1910, the majority of Gainesville residents were African American. In response to this and the strong Republican mayor during this period, the Black population of Gainesville and Alachua County became targets of white supremacy, racial terrorism, and violence.

The establishment of the University of Florida in 1906, and the subsequent shift in demographics reflects not only the local officials' efforts to ensure the city's prominence and growth but also suggests an effort to reassert Southern White dominance and establish a boundary against the growing African American community. In the subsequent decades, expansion decisions made by the university and then the application of zoning, beginning in 1932, and other land use policy and regulatory tools further advanced the marginalization and confinement of the African American community in Gainesville. Today, as the city and county grapple with deep racial divides and inequities (BEBR 2018), the City of Gainesville has entered into an 18-month planning process with equity as an explicit focus, and the university has embarked on a master plan as it seeks to enhance its position as a top-tier public institution. Thus, understanding the enduring ramifications of institutional racism will be essential to ensure social justice is deeply integrated into these initiatives. This research broadens our understanding of institutional racism and the role of universities in disenfranchising the African American community well before and beyond the documented examples of metropolitan institutions in other parts of the country. In connecting to current practice, it establishes the necessity of understanding this history when employing social justice strategies in city planning and town-gown partnerships (Fainstein 2010).

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Key Words: Racial, Justice, Institutional, History, Town-Gown

CONVENIENT MYTHS IN PLANNING HISTORY: THE UNRELIABLE STORIES THAT PLANNERS TELL OURSELVES AND THE MOTIVATIONS TO PERPETUATE THEM
Abstract ID: 1225
Individual Paper Submission

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In our retelling of planning history, why do we often employ problematic interpretations -- and selection bias -- of key planning events?   Is the result a set of stories (about planning's origins, character, ideals and role in society) that may be appealing and comforting, but also misleading and empirically precarious? Is planning history a well-intentioned but unreliable narrator?

The planning discipline is certainly not alone in favoring a good storyline over empirical accuracy. Perhaps we should not be too troubled by the occasional liberties taken to chronicle the life and aspirations of a just, idealistic and humble profession that occasionally missteps but is invariably on a noble path to serve the public interest. Humans are prone to reshape events and storylines to fit narrative structures, to reinforce appealing traits, to avoid uncomfortable and inconvenient truths, and have stories lead to a reassuring moral. But surely the consequences of -- and the standards of veracity for -- a profession's history should be higher than those for a private individual?

I address four questions. What are key examples of myths in planning history texts? (I use "myth" not as synonymous with falsehood, but rather as "a traditional story … which embodies and provides an explanation, aetiology, or justification…" OED.) How do these myths converge or collide with the empirical accounts of events? What is the motivation for telling this story in this particular way? (i.e., what rhetorical and ideological work does the story do?) Finally, have there been subsequent efforts to counter this initial storyline and write a revisionist history of the planning event, and if so, how does this updated account reflect a shift in planning's ideological beliefs?

Planning narratives present many possible examples, from emblematic projects (TVA, Levittown, the Big Dig), to tales of collusion and conspiracy (GM's "killing" of the streetcar, Robert Moses' parkway bridges too low for buses, the destruction of Penn Station).

I focus on three. The first are the "origin stories" recounted in introductory planning texts (Hall, Krueckeberg, etc.) and courses. The trio of City Beautiful, Garden Cities and Housing Reform, often augmented with Public Health, sets the planning story in motion, defines disciplinary purpose, and triggers path-dependence for 20th century planning.   The second is the story of planning's break with architecture (whose vestige is the field's enduring status within architecture schools), as the field traded drafting tables for spreadsheets and social-economic policy. Whether the overdue liberation or the misstep of a prodigal son, this departure becomes a central narrative theme to planning's intellectual and professional history. The third is the narrative of planning's embrace and then ostensible rejection of modernism, and the selective use of high-profile cases (Brasilia, Chandigarh, Ciudad Guyana, Pruitt-Igoe) as markers of modernism's insensitivity and brutality (see Hall, Holston, James Scott) -- where modernism's hubris is a more grandly entertaining story than a nuanced, empirical account of the lived experience.

The task here is neither to write a new planning history nor to simply point fingers that we tell falsehoods. Instead, in interpreting how we selectively highlight and mythologize exemplars and

moments in urban history, we reveal not just the awkward truths that we sidestep, but also the self-image that the profession seeks to project. Such myths are therefore not just convenient and self-serving, but also aspirational. These narratives serve as morality tales and motivational stories. They disclose planning's longing for a vaillant self-image, be it the heroism of insurgent planning, David-vs-Goliath stories of grassroots victories, or the virtues of collective public action over myopic private interests. That said, they also therefore reveal the sobering gap between what cities and planners are and what they could be.

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Key Words: planning history, planning theory, intellectual history, modernism, revisionist history & myths

COMMUNITY PLANNING AND POST-WAR RECONSTRUCTION IN CANADA
Abstract ID: 1315
Individual Paper Submission

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Canadian housing construction and community planning essentially collapsed during the Depression and World War 2, which alarmed the federal government's Advisory Committee on Reconstruction. Their influential 1944 report called for strong federal leadership in housing and community planning, two areas of provincial jurisdiction in Canada's constitutional framework. The Central Mortgage and Housing Corporation (CMHC) was established in 1945 to implement federal reconstruction policies. CMHC took the lead in housing, but for community planning issues, it helped launch the Community Planning Association of Canada (CPAC) in 1946 as a nation-wide advocacy group.

Within a few years, CMHC had a nation-wide administrative network and CPAC had divisions in every province, branches in most cities and a diverse membership of thousands lobbying for better planning legislation and municipal planning agencies. It appears that CPAC had considerable early success – by 1960, nine provinces had adopted stronger legislation and by 1970, most cities had established planning agencies and were preparing comprehensive land use plans.

The paper will draw upon archival research in Library and Archives Canada, the Canadian Centre for Architecture, the Canadian Housing Information Centre, and Harvard, Queen's and McGill universities.   It will use a historical – institutional (HI) approach to examine CMHC's role and CPAC's influence; considering whether the CPAC's establishment helped re-establish community planning in a manner that affected Canada's transformation into a suburban nation in the post-war era.

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Key Words: community planning, suburbs, post-war reconstruction, Canada

ATLANTA AND THE OUTER LOOP: RECONSIDERING THE UNBUILT ENVIRONMENT IN PLANNING HISTORY
Abstract ID: 1321
Individual Paper Submission

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As a general rule, planning history focuses on things that exist, or at least did. Almost the entire corpus of the work of planning historians explores plans, projects, infrastructure, politics, objects, and systems that have been brought forth. In other words, we tend to explore plans that succeed in some way or another. Yet, for much of the modern history of city planning, a substantial portion, perhaps even the majority, of planned projects have never come to be. This includes a gamut of possibilities: comprehensive plans, zoning ordinances, transit systems, housing projects, office parks, and shopping malls, among others. If we were to take into consideration these attempted efforts, most cities appear to have been built atop a vast underworld of ideas.

If so much of the history of planning is actually unbuilt, we come to the question of why we don't more often study the projects that fail? This paper attempts to explore this question. It does so by considering the legacy of a plan for a massive suburban highway (nicknamed the "Outer Loop") in Atlanta, Georgia that was never built. But the story of the Outer Loop is perhaps more complicated than it might initially seem. In most planning histories, the proposed road likely would be only lightly told. After all, the plan did not result in much of anything, at least officially. But this raises questions. Should stories like the Outer Loop be told? What are we missing if they are not? And if they are told, what value does the telling hold?

The historian Carl Smith posits an interesting response to these kinds of questions. In City Water, City Life, he argued that "a city is as much an infrastructure of ideas as it is a gathering place of people, a layout of streets, an arrangement of buildings, or a collection of political, economic, and social institutions. The infrastructure of ideas neither precedes nor follows the building of a physical and social infrastructure, but is inseparable from them." If we think of plans as a form of writing the idea of the city, in which societal values are expressed in a complex urban language of infrastructure, then what is not written, or in this case not built, is an equally important part of the "infrastructure of ideas." This unbuilt world may reveal a more complicated history of a city. This follows, in many ways, Walter Benjamin's suggestion in his Arcades Project that "[o]ur waking existence likewise is a land which, at certain hidden points, leads down into the underworld – a land full of inconspicuous places from which dreams arise." Thus the unbuilt environment might be seen as an important force in shaping the planning process and resulting (built) world.

Proceeding from both Benjamin and Smith, this paper argues that telling the stories of unrealized plans provides a portal into a much richer understanding of a city's past. Those stories reveal the hidden sides of what a society or community deems important, and provide clues as to how those values are formed. Unrealized plans are just as much expressions, albeit silent, of what a community values and how that community sees itself. Though unbuilt, Atlanta's Outer Loop, as an example, points to a more robust means of understanding the "infrastructure of ideas" and offers a new perspective on the history of

planning.

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Key Words: Highways, Unbuilt, History, Regional

DOMINANT AND RESISTANT NARRATIVES OF ATLANTA'S REDEVELOPMENT PROJECTS
Abstract ID: 228
Poster

OCONNELL, Laura [Georgia Institute of Technology] l.katieoconnell@gatech.edu, presenting author

Government agencies in the 20th century relied on a dominant narrative that described urban communities as dysfunctional and delinquent while the 21st century narrative shifted to describe these same neighborhoods as vast wastelands waiting for outsiders to lead a much-needed renaissance. No matter the dominant narrative's language, the goal was to justify the displacement of residents due to massive development projects. The City of Atlanta followed these same patterns during Urban Renewal and a current citywide greenway project, the BeltLine. Other scholars recognize displacement as a consequence of Atlanta's redevelopment projects but few focus on the official discourse used to sway public opinion. In relation to that gap, based on a critical discourse analysis of city and community documents, I demonstrate that Atlanta officials used their power to construct a narrative of community conditions in order to justify displacement, which ran counter to residents' lived experiences.

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Key Words: Narratives, Redevelopment projects, Critical discourse analysis

CODE, PUNCH, AND VERIFY: ASSESSING THE INFLUENCE OF PUNCH CARDS AND EARLY MACHINE COMPUTING ON PLANNING ANALYSIS
Abstract ID: 699
Poster

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Planning blends the technical with the political—on the one hand planners gather information and apply expertise, while on the other they mediate between stakeholders (Hoch 1994). The capability of computational technology to support these functions has grown over time, yet the form of its application has also evolved. Klosterman (1997) has traced how since its adoption, perceptions of the role of computing in planning have shifted from a focus on data processing towards more multi-function decision support systems. The earliest period of computing in planning, before 1970, has been described by

scholars as valuing objectivity and scientific method with connections to a rational mode of planning (Brown 2006). Indeed, the later rejection of the computer-supported "large-scale models" developed in this time is part of a critical turn in planning that greatly shaped how we teach and practice it today (Lee 1973). While much present research concerning the relationship of technology with planning critically explores newer planning support systems, there is also a call for renewed reflection on the earliest applications of computing to planning analysis, especially based in parallels to the present "smart city" movement (Batty 2014).

For this poster I offer a visual and interactive experience based on an historical analysis of the period surrounding the adoption of the computer by planning organizations, 1940 through 1965. My interest is not only the computer itself, but also its widely-used computational predecessor, the tabulating machine, and especially standardized punch cards that linked them in practice. I address the following research questions: How did particular groups or topics in planning engage with punch cards and early machine computing? To what extent did early machine computing influence the form of planning analysis? Did planning analysis have any role in shaping the form of computational technologies during this period? Finally I ask viewers to consider if, despite our discipline's critical turns, the legacy of our initial engagement with machine computing and punch cards remains felt yet unseen today. Historical data sources for this project include primary materials from the period spanning 1940 to 1965 including scholarly works such as journal articles, books, and dissertations, as well as government documents such as prospectuses, reports, and technical specifications.

The poster will visually and narratively relate selected stories of projects, people, and key events during this time period. Visuals will include photos of coded punch cards as well as photos of key individuals and equipment to support narratives. Viewers will learn how key federal agencies such as the Bureau of Public Roads and Works Projects Administration, as well as the discipline of traffic engineering, exerted a strong influence on planning analysis during this period in part through their early adoption and promotion of data processing. To a large extent, computing technologies became integrated into planning analysis across the porous boundaries that existed between traffic engineering and planning during the 1940s and 1950s, with traffic a growing public concern. Particular projects that may be described include the 1940 Chicago Land Use Survey, the 1946 Portland Metropolitan Area Traffic Study, the 1954 Detroit Metropolitan Area Traffic Study, and the 1960 Tucson Area Transportation Study. Particular stories of individuals include those of key traffic engineers who were early adopters of data processing for travel and land use, and a mathematician whose engineering firm grew to provide data processing and computing services for varied urban research projects. Viewers will also be challenged with a thought activity using a blank punch card, which encourages them to critically reflect on their own analysis practice. Finally, I will be on hand with punch cards similar to those used in the period.

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Key Words: Planning History, Planning Analysis, Planning Support Systems, Land Use, Transportation Planning

REFERENCES TO URBAN PLANNING TERMS AND CONCEPTS OVER TIME AS FOUND IN A DATABASE OF FIVE MILLION DIGITIZED BOOKS

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Like any field, urban planning has terminology used to represent the ideas and concepts of the field. Terminology changes over time as ideas appear, fade, and evolve. The emergence of "big data" allows for the study of terminology in ways that are difficult, if not impossible, to do previously. Michel, et al. (2010) discuss the creation of a massive digital "corpus," or collection of text, containing all the words in over five million digitized books. That corpus is now searchable using the Google Books Ngram Viewer. Michel, et al. describe "high-throughput" quantitative analysis of culture, such as word study through the corpus, as the field of "culturomics". Since being published, authors in many disciplines have utilized the corpus to explore their sub-cultures, including planning-adjacent fields such as landscape architecture (Antrop and Van Eetvelde, 2017) and environmental, civil, and transportation engineering (Leary, et al., 2011). This study similarly looks at references in the corpus to urban planning terms and concepts. Some findings that emerge include:

Planning peaked in 1974

Terms referring to the field of planning emerged around 1900, reflecting the notion that modern planning roots back to industrial revolution-era reform movements. As a proportion of all words in books, urban planning continuously grew before dropping steadily from the 1970s on. By this metric, urban planning has become a relatively less prominent feature of society since then. This relative drop was driven by an absolute decline in references until the 1990s, when absolute references began to rise again. However, this renaissance was not enough to reverse the relative decline.

Evolution from city and town to urban planning

So far, this abstract has referred to the planning field specifically as "urban planning." In the early-1900s, the terms city planning and town planning emerged nearly simultaneously and were used roughly evenly. Over time, these prefixes have been somewhat supplanted by urban, which has been the most used descriptor since 1993.

Zoning is planning?

For better or worse, zoning is by far the most frequently used planning term in books. As of 2008, zoning appears approximately once out of every 3,000 words in books. In 2008, zoning appeared more than 100 times more frequently than references to the overall field of urban planning.

Planning ideas go viral and fade, but don't disappear

Some concepts, when new, rapidly increase in popularity. City Beautiful and Garden City/Cities rose quickly in the early-1900s, as did urban renewal at mid-century. All these terms eventually greatly decreased in frequency (especially quickly for urban renewal), but not entirely. This indicates a level of reflectiveness toward past planning ideas, even those that have become less in vogue.

Planning references are more and less common than related fields

Compared to adjacent fields, planning is referred to about as often as civil engineering, and thrice as often as landscape architecture. Conversely, planning is referred to about half as often as public works, and about 30 times less than architecture. In terms of people, two of the most referenced planning-related figures (although not planners), are Robert Moses and Jane Jacobs. They are mentioned nearly as often in books as former US President Millard Fillmore, one of the least referenced presidents.

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Overall, while the corpus/nGram viewer is a relatively simple tool, it allows exploration of planning trends in a quantitative way. Graphs based on the data allow for visualizations on the evolution of planning ideas. Further, the corpus' scope covering all terms in the English language, allows for the exploration of planning not just within the field itself, but also allows the placing of the prominence of planning ideas in society as a whole.

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Key Words: Planning history, Planning terminology, nGrams, linguistic analysis, big data

TRACK 12 – PLANNING PROCESS, ADMINISTRATION, LAW & DISPUTE RESOLUTION

TRACK 12 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS FOR THE SESSIONS

MARRYING ECOLOGY AND PLANNING FOR RESILIENT COMMUNITY FUTURES
Pre-Organized Session 23 - Summary
Session Includes 98, 99, 100, 101

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In an era of rapid environmental change, scientific uncertainty and public risk are high, yet there is an urgent need for timely decision making. Planners must make good decisions based on best-available evidence in the face of climate-related disruption and unprecedented rates of urbanization. the role of ecological science in planning, design and city management processes is of increasing importance, however, decision-makers frequently lack ready access to the data they need most. At the same time, urban ecological science and other relevant natural sciences (hydrology, atmospheric science, etc.) do not always have the knowledge about the constraints and issues facing planners, nor do they necessarily have understanding of the lived experience and local knowledge held by communities that in turn impacts production of natural science and development of planning strategies. This session will explore planning models and examples of co-created processes and solutions in urban areas that fit the issues at hand, across scales and with different stakeholders, to achieve appropriate adaptive outcomes.

Objectives:

- Models and tools for integrating natural science with planning practice

SEEING PLACE: COUNTERING THE ONE SIZE FITS ALL SOLUTIONS FOR URBAN ECOSYSTEM PLANNING TO ENHANCE RESILIENCE.
Abstract ID: 98
Abstract within Pre-Organized Session 23

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Modern ecological and planning science has been dominated by the impetus to discover theoretical principles that are fundamental and generalizable. In the realm of urban ecosystems, there is a sameness of strategies across different cities, though often largely unsupported by locally informed science. Similarly, in urban planning, there are dominant paradigms that are seen to be the 'right solution' (and these change over time). Yet, cities are situated in places with very different climates, soils, weather, populations, densities and morphology. What are the missed opportunities that the modernist scientific and planning paradigms overlook? And how do we reinstitute a way of seeing that is place based and combines a rethinking of urban morphology, urban ecology and reflects the local populations, that is site and place appropriate?

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Key Words: urban ecology, urban resilience, uncertainty, urban design, expertise

EMBEDDING INTERDISCIPLINARY SCIENCE AND PLANNING RESEARCH IN A PUBLIC LANDSCAPE: A PROCESS MODEL AND A PROJECT
Abstract ID: 99
Abstract within Pre-Organized Session 23

HINNERS, Sarah [University of Utah] sarah.hinners@utah.edu, presenting author
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Frameworks such as Social-Ecological Systems (SES) and Social-Ecological-Technical Systems (SETS) are proposed as essential lenses for effective planning for the complexity of twenty-first-century cities (). These frameworks are based on an understanding of interacting complex natural (ecological) systems, social systems, and infrastructural or built systems that are explicitly connected by a defined set of relationships and interactions mediated by design, rules, norms and economic activity. In order to conduct planning within such a framework, expert knowledge is required both within and across all three subsystems. Furthermore, this knowledge must be dynamic not static, that is, knowledge of the system as it evolves and changes over time. It is generated and maintained by ongoing activities such as experimentation, modeling, monitoring, analyzing and communicating. While planning incorporates data easily, standard planning processes are challenged to incorporate ongoing dynamic expert knowledge, especially in distantly-related fields such as the natural sciences.

Previous attempts at integrating scientific knowledge into planning have included the articulation of the concept of "designed experiments" (Felson and Pickett 2005) and an "urban sustainability loop" (Childers et al 2015). Both of these approaches look for opportunities to integrate scientists, usually ecologists, into a planning or design process. Nassauer and Opdam (2008) propose landscape science as a shared pivot point between design and science processes. Based on interviews with practitioners and academics in the fields of ecology, planning and design, and representing varying degrees of contact and overlap between these fields, we build on these foundational process models to propose a model that integrates planning, design, and ecology. Our model both arises from and gives shape to an ongoing project on the University of Utah campus called the Landscape Lab and is based on a SETS-like conceptualization of the urban environment as composed of social, natural and built elements that coevolve and are linked by interactions and information.

The Landscape Lab is simultaneously an experiment in ecological AND social revitalization of the site, a demonstration and educational facility, and an externally-funded research project. Embedded within the design of the landscape are research questions that address three broad areas that will inform future

planning: 1) questions about ecological processes and biodiversity in a designed urban landscape 2) questions about knowledge and acceptance of new practices in the built environment, and 3) fiscal and operational questions about cost, maintenance, and institutional operations and structures. The paper summarizes the development of the process model in parallel with the planning and design of the Landscape Lab, giving rise to the interdisciplinary experimental design of the Landscape Lab itself and goes on to explore the implications for planning practice.

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Key Words: ecology, process model, interdisciplinary

INTEGRATING LONG-TERM WATER USE DATA AND LIVED EXPERIENCES TO DEFINE WATER-RESILIENT CITIES AND URBAN-INFLUENCED ECOSYSTEMS
Abstract ID: 100
Abstract within Pre-Organized Session 23

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Similar to many other climate-impacted and rapidly growing places around the world, Texas is projected to shift from predominantly agricultural water use to predominantly municipal water use over the next several decades, due to increasing urbanization, improving efficiency of agricultural irrigation, and economic shifts in the agricultural sector (TWDB, 2017). In the years leading up to this tipping point, planners and communities have the opportunity to reexamine urban water use, better understand why some metropolitan areas have higher per capita water uses, and then use this information to better adapt metropolitan water use efficiency. This is relevant to planning practice because reducing per capita metropolitan water use —the amount of water each person in a metropolitan areas uses on a daily basis— will help communities, as well as the ecosystems that support them, become more resilient in the decades ahead, given both climate change and projected population growth. In this paper, we ask: how can information about changes in per capita water use across Texas metropolitan areas over the past several decades, integrated with local knowledge about these per capita water changes, be used to better define water-resilient cities and urban-influenced ecosystems?

To answer this question, we analyzed Texas' metropolitan per capita water use over time (1980-2016), used these data to identify exemplar metropolitan areas that successfully reduced per capita water use, and then interviewed urban water stakeholders to identify potential drivers of sustainable metropolitan water use, including metropolitan form, climate conditions, regional ecology, demographic and economic change, and utility programs and policies. Combining longitudinal data about water use with knowledge based on lived experiences of stakeholders allows for more robust development of planning strategies related to infrastructure, technologies, utility incentive programs, regulations, and conservation

policies. In particular, urban water efficiency may provide a pathway toward reallocating water supply for ecological (or environmental) flows, which are defined as the quantity, timing, and quality of water flows required to sustain ecosystems and the human livelihoods and well-being dependent upon these ecosystems (Arthington et al. 2018). Ecological flows are an ecologically, socially, and economically critical water use that historically has been under-allocated in Texas, as well as other communities around the world.

We found that all metro areas across the state have seen decreasing gallons per capita per day use in the period from 1980-2016, providing an encouraging trend line for future water use reductions in metro areas between now and 2050. Despite positive news about less water being used per metro resident over time, we expect overall water use in metro areas to continue to increase due to Texas' expected population growth, if all other factors stay constant. However, nearly all Texas metro areas have plans to continue to reduce per capita demand over the next several decades, creating a window of opportunity for a reconsideration of allocation of water for both ecosystems and urban areas.

Given its geographic scale and population size, Texas encompasses a variety of approaches to metropolitan water use. Although other cities across the U.S. and around the world offer useful lessons about per capita water use reduction, water use experiences from Texas' diverse metropolitan areas may provide geographically and culturally targeted lessons about how to achieve future water use reductions in other places experiencing water limitations due to climate change and rapid population growth.

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Key Words: climate change, resilient communities, urban water use, water planning, urban-influenced ecosystems

ACTIVATING HEALTHY URBAN ECOSYSTEMS: CO-BENEFITS OF BIODIVERSITY, CLIMATE ADAPTATION, AND WELL-BEING THROUGH GREEN INFRASTRUCTURE
Abstract ID: 101
Abstract within Pre-Organized Session 23

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This presentation will address the intertwined critical issues of accelerating biodiversity loss, climate change and human well-being in the context of increasing urbanization. There is mounting evidence that demonstrates human health and well-being are connected to contact with nature (here defined in the context of urban biodiversity in public spaces). Urban green infrastructure can provide useful co-benefits in the form of climate change adaption, biodiversity protection, and human health. Collectively, United Nations' programs recognize these co-benefits as nature-based solutions. Through the identification of interdisciplinary indicators for assessing the impacts of green infrastructure

on biodiversity protection and climate change adaptation, this project is developing evidence-based design and policy recommendations that integrate urban ecological and environmental benefits with human-centred co-benefits for public health and well-being. These include physical, mental and social health benefits. The project works to bridge the gap between the disciplines of urban ecology, health, infrastructure design and planning, through integration of broader indicators of success together with evidence-based design and policy recommendations to build consensus to support the implementation of large-scale urban green infrastructure projects. This approach towards integrated evidence-based design is aimed at developing longer term transformative decision-making across currently-siloed agency initiatives to activate a critical transition towards healthy urban ecosystems.

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Key Words: Biophilic urbanism, green infrastructure, ecological design, biodiversity, community health

TRACK 12 - ROUNDTABLES

CROSS-CULTURAL SOCIAL CAPITAL CONSTRUCTION AND PARTICIPATION: EXPERIENCES OF WORKING IN MARGINALIZED COMMUNITIES IN INTERNATIONAL SETTINGS
Abstract ID: 106
Roundtable

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OZAWA, Connie [Portland State University] OzawaC@pdx.edu, participant
SHMUELI, Deborah [University of Haifa] deborah@geo.haifa.ac.il, participant

This round table explores the challenges of participation involving marginalized communities in the context of projects that seek to enhance such participation, in countries across the globe.

The United Nations Sustainable Development Goal 17 calls for revitalizing partnerships for sustainable development. SDG 17 envisions "multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries."

While public participation, transparency, and collaborative processes are widely accepted concepts, community engagement of marginalized communities, those most at risk of not meeting the UN SDGs, in almost all countries is fraught with difficulties. Countries experiencing widespread poverty, political disempowerment, or significant political divides face even greater challenges.

Building on the experience of the discussants and participants, this Roundtable will explore three themes:

1. Cultural and political constraints to participation: What does public participation mean in the context of top-down cultures and governments? We will explore the circumstances under which cultures with top-down governments (china) create spaces for grassroots participation and how these might be broadened. We will further explore cultural divides (Portugal), such as between younger and older generations with significant gaps between those who seek getting involved and those used to accepting what the government worked out for them.Related to this, we examine the role of seniority and "respecting" elders in China and South Korea, which inhibits younger voices from expressing contradictory or challenging opinions.These inhibitions call not only for more open processes but also public education aimed at both decision makers and potential participants. How do we create a culture of engagement wherein the public perspective is broadly inclusive?

2. Defensive participation: In what ways are participatory processes used in lieu of collaboration? When are participatory processes employed to provide the forms of engagement while in content and outcome designed to defend the state from change? We will explore processes used by the State of Israel to engage the Negev Bedouin, especially those living in dispersed, unauthorized settlements lacking formal housing and community services. Current efforts seek to facilitate negotiated agreements that shift the focus from land disputes to planning paradigms to overcome the impasse between the Bedouin (struggling for land, municipal recognition, and equal economic opportunities) and the Israeli government (seeking modernization and spatial aggregation of the dispersed population). Participation challenges encountered include an underlying mistrust, different cultural contexts, and the power disparities within and among the Bedouin communities themselves and between the Bedouin communities as a collective and the government.

3. The participation of the impoverished: What are the challenges faced when employing empowerment models that explicitly build on SDG 17 to support climate action and adaptation amongst the poorest of urban poor? India is amongst the countries most threatened by climate change. The dense urban populations are particularly susceptible, with the most vulnerable being women living in informal settlements. We will examine efforts to address four major climate health risks – heat stress, flash floods, acute water shortages and vector borne diseases, building -- through community organizing and building capacities of slum communities and city governments for assessing vulnerabilities in these communities and address critical partnership gaps between technical experts, local governments and low income communities to undertake participatory risk assessments and design joint technical solutions.

These three themes are illustrative of the dilemmas found in efforts to enhance social capital and collaboration in marginalized communities in countries across the globe. Please come prepared to participate and engage, bringing your own experience and knowledge to this dialogue.

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DAILY PRACTICES OF PLANNING IN THE GLOBAL SOUTH AND NORTH
Abstract ID: 1072
Roundtable

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BAIRD-ZARS, Bernadette [Columbia University + Alarife Urban Associates] bvb2108@columbia.edu, participant
SALMAN, Lana [University of California Berkeley] ss.lana@gmail.com, participant
HUENNEKENS, Joseph [Columbia University] jsh2228@columbia.edu, participant
FAWAZ, Mona [American University of Beirut] mf05@aub.edu.lb, participant

As planning and plan-making focus on long-term outcomes, planning research and education often overlook the daily practices of planners and land use officials in local government. Particularly in the global South, emerging scholarship details how daily practices of 'plan doing' can differ significantly from assumptions about how planning should function (Coslovsky 2015; Fawaz 2017). Drawing on participants' recent empirical work on local planners and officials in sub-Saharan Africa, the Arab world, Latin America and the US, this roundtable discussion will explore these practices and their relationship to planning. A fuller picture of the quotidian functioning of planning and land use offices of municipalities can clarify what is and is not realistic for planning to achieve in a given context. This requires knowledge of the relative amounts of time planners spend on different tasks, the micro-politics and power dynamics that guide their work, the assemblies of values and informal institutions they create, and metrics of 'success' determining project and job security. Additionally, planners in local governments have often developed strategies to deal with local politics, capacity constraints, and other challenges in their specific contexts. Even if these strategies are successful only partially, occasionally, or temporarily, planning reform can benefit from unearthing and building on the tacit knowledge, reflections, and 'actually existing' institutions of planners and officials (Campbell, Forester and Sanyal, 2018). Yet, particularly in Southern contexts where planning systems are often cast as dysfunctional, this knowledge tends to be ignored or dismissed (Watson 2014).

The roundtable will draw on the recent empirical work of the participants to probe several ongoing debates in planning: the role of micro-politics amidst macro-institutions such as clientelism and financialization, and the space for planning knowledge and expertise in the day to day. Secondly, the discussion will attempt to sketch out the parameters for further research: what do we already know about daily practices of planning in both the global South and North? What can we learn from what we already know? How can we better incorporate what we know into planning education and research? What do we not yet know, and what modes and methods of research are best suited to learning more?

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TRACK 12 – INDIVIDUAL ABSTRACTS

THE AVANT-GARDE STAFF REPORT: INNOVATION IN THE EVERY DAY
Abstract ID: 134
Individual Paper Submission

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In fashion, avant-garde clothing is over-the-top and impractical, but it inspires ready-to-wear. Using "fashion thinking" (Nixon & Blakley, 2012) the traditional staff report was reimagined as avant-garde, tested with planning commissioners and planners across the country and their suggestions form the basis for innovative yet practical staff reports that are "ready-to-wear."

Planners write thousands of staff reports every year in response to applications for rezonings, plan amendments, site plans, etc. The reports go to citizens, applicants, advisory boards, and governing bodies who make decisions impacting the very fabric of our communities, yet how often do we assess the report itself? This research builds on a previous nation-wide study which showed staff reports offer a great deal of technical writing with little in the way of easy-to-use, formatting or communicative touches (Johnson & Lyles, 2016).

Through the Integrated Arts Research Initiative at the University of Kansas, researchers from the Urban Planning Program, Film and Media Studies, and the Spencer Museum of Art took the traditional staff report and turned it avant-garde. Inspired by works of art, they created mood boards (images used to communicate a certain quality during the product design process) (Cassidy, 2011; McDonagh & Denton, 2005; McDonagh & Storer, 2004) depicting how a staff report and pieces of art could be combined, then created examples of fanciful, avant-garde staff reports based on the mood boards. The avant-garde staff reports (videos, game board, newsletters, collage, mobile, and e-book) were shared with planning commissioners and planners in Georgia, California, Kansas, Missouri, Utah, Colorado, North Carolina, Pennsylvania, Oregon, and New York.

The results of the group and individual interviews indicate that getting planning commissioners and planners to reimagine the staff report is difficult and the traditional, technical, rational model is deeply ingrained. However, planning commissioners were open to new ways of delivering staff reports to the public, but preferences varied from commission to commission with some loving the idea of a video report and others hating it. The main finding was unexpected and it was that it is valuable to stop every now and then and talk with planning commissions about the day-to-day work of their planning staffs. The discussions brought out areas of improvement that had not been previously discussed, but more importantly areas where commissioners thought their staff excelled, of which staff were unaware.

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Key Words: staff reports, planning practice, current planning, innovation, mood boards

DISTURBING THE URBAN MACRO SKYLINE BY THE NEW CONSTRUCTIONS IN SHIRAZ (IRAN); ORGANIZATIONAL AND LEGAL GAPS
Abstract ID: 263
Individual Paper Submission

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The significant historic skyline of Shiraz, in Iran, has been destructively affected by the rapid urban growth in the previous century. Especially a couple of individual constructions around the city has been the matter of debate and conflict among different actors, due to their destructive effects on the historic landscape and skyline of Shiraz. This research aims to investigate the organizational and legal gaps of two sample projects in Shiraz, which has been controversial during the past years. By means of a field survey in the mountains surrounding the city, a list of newly constructed visible structures in Shiraz is extracted, and an investigation on available data in the literature, press release, and expert interviews is conducted. Finally, it is concluded that two projects of "Aseman Hotel Project" and "Bein al-Haramain Project" are among the cases with the most comprehensive available information for deeper research. The results show not only the involved actors in the timeline of two projects but also the failures in the organizational synergy, as well as gaps in heritage conservation and urban regulations.

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Key Words: historic urban macro skyline, organizational synergy, legal gaps, urban design regulation, heritage conservation

ROBUST ADAPTIVE PLANS: INTEGRATING SEA LEVEL RISE AND TSUNAMI INUNDATION MODELS AT THE COMMUNITY LEVEL IN WASHINGTON STATE
Abstract ID: 721
Individual Paper Submission

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Hazard mitigation planning is rarely incorporated into comprehensive planning (FEMA, 2013). This paper reports on the initial stages of community workshop-based action research in coastal Washington State to consider multi-hazard mitigation as a step in updating a rural local comprehensive plan, and in the process identify opportunities for more robust mitigation strategies than is typical in "worst-case" hazards planning processes – i.e. strategies that are appropriate for more than one type and severity level of hazard, as well as for the achievement of vetted on-going community development goals over both long and short terms. In order to capture a meaningful extreme of robustness in the strategies they generated, community stakeholders and a University of Washington team used weTable participatory GIS originally developed for sea level rise (SLR) planning only (Yusuf et al, 2018), to consider localized probabilistic scenarios of both SLR and more sudden, existentially threatening change: near-source megaquake tsunamis and associated co-seismic land subsidence – a rare combination of hazard information in local planning (Dall'Osso et al, 2014). In the workshops, stakeholder participants divided into small groups, each independently discussing a different scenario of either earthquake-subsidence-tsunami or of SLR, and then reporting out to the group for combined discussion of the mitigation and recovery strategies they generated. The participating community, Westport/South Beach and Ocosta School District in Grays Harbor County faces an estimated 10-15% chance of a major earthquake occurring along the Cascadia Subduction Zone (CSZ) within the next 50 years. Although rare -- with recurrence intervals of 250-500 years to approximately 2,500 years, depending on the magnitude – a CSZ megaquake would resemble such recent events as the 2004 Sumatran and 2011 East Japan earthquakes and tsunamis. A CSZ megaquake could kill more than 10,000 people and injure over 30,000 throughout the region, with economic losses exceeding $70 billion (CREW, 2013). Westport/South Beach had already demonstrated remarkable political will and social capital by self-funding and constructing North America's first tsunami vertical evacuation structure at its local school campus in 2015-2016. Beginning in 2018, incorporation of broader hazard resilience into Westport's Comprehensive Plan Update is helping the City apply for FEMA assistance to build additional vertical evacuation structures. However, the combination of chronic/gradual and episodic/sudden hazard information with a values-driven, asset-based participatory community workshop protocol (Freitag et al, 2014), also enabled stakeholders to generate long-term, localized resiliency and pre-disaster recovery plans with a robust suite of strategies, including relocation of critical facilities and preparation for possible resettlement on less vulnerable sites out of inundation zones and away from changing coastlines. In this case, the long-term projections for land loss due to SLR happened to resemble the projected loss of land due to sudden subsidence of the coastline in a CSZ earthquake, further prompting workshop participants to discuss strategies for relocation of critical facilities and, given time, possibly housing and business assets. However, since an earthquake and tsunami may occur much sooner than the worst case of SLR, further development of the workshop protocol should include combined scenarios of both earthquake-subsidence-tsunami and SLR impacts, at different time horizons. Also, incorporation of local-historical geo-narratives of environmental and developmental change in the workshop protocol may further enhance the ability of participants to generate robust resilience strategies. Processes that focus only on community vulnerability to severe (but low-probability) existential threats, by contrast, tend to generate primarily immediate life-safety strategies, and provide less useful information to long-term comprehensive planning.

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Key Words: hazards resilience, scenario planning, tsunami, sea level rise, participatory GIS

HIERARCHICAL GOVERNANCE AND SYSTEMATIC REGULATION: AN INSTITUTIONAL ANALYSIS OF PLANNING SYSTEMS IN SHANGHAI
Abstract ID: 952
Individual Paper Submission

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Understanding planning systems through the institutional analysis approach has become increasingly important in planning research. However, current researches in this field mainly focus on theoretical analysis while giving less attention to empirical studies. Additionally, most studies are conducted on Western contexts, while cities in the China context are less understood. This article takes Shanghai, China as an example to answer two research questions. First, what kind of planning system has Shanghai established since the 1990s to manage its rapid and massive urban development and construction? To answer this question, the study analyzes a series of rules and institutions directly related to plan making and urban management to understand how the planning system evolved with Shanghai's social and government transformation. Second, how to characterize Shanghai's planning system, including the institutional framework, main actors, and dynamic structure? This paper probes into the social construction of the planning system by analyzing its planning framework and the coordination and interaction between various actors at different tiers of urban planning.

The proposed analysis proceeds in three steps. First, this study collects and analyzes historic urban governance data of Shanghai since the 1990s, including legislative documents, government reports, and planning cases. Second, this research interviews key actors in the planning system including policymakers, planners, and scholars to further investigate how the plans were made at different times and under what context. Third, this study uses institutionalism as a theoretical framework, and applies the sociological institutionalist approach to characterize the changes of Shanghai's planning system.

This study finds that Shanghai constructed a five-level planning system as a response to its rapid social change, market-oriented economic reform, and the emerging requirement for statutory planning. In particular, this planning systems was made to accommodate the established government framework of "two-level government and three-level administration", namely, the government tasks are shared by municipal and district governments and implemented by municipal, district and street offices. Two essential characteristics of this planning system are hierarchical governance and systematic regulation. The two-tiered regulatory hierarchy ensures land use development are regulated top-down under municipal strategic planning. Systemic regulation facilitates the dynamic interactions between different levels of governments to achieve the overall control of urban development. But on the other hand, we also find that the inherent logic of these two characteristics is contradictory, which is why the system lacks flexibility when facing the dynamic markets and is criticized as a planning failure.

This study provides empirical evidence of the structure and characteristics of the planning system in Shanghai, which deepens our understanding of the dynamic interactions between planning institutions and strengthens the theoretical analysis in planning system research. Additionally, this paper fills in the gaps of the scarcity of research cases in China's context in institutional analysis and provides a basis for subsequent dialogues in international comparative research.

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Key Words: Planning Systems, Institutional Analysis, Institutional Frame, Governance, Shanghai

DELIBERATING ON BEHALF OF OTHERS: SCRUTINIZING REPRESENTATION IN COLLABORATIVE PLANNING PROCESSES
Abstract ID: 999
Individual Paper Submission

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Collaborative governance approaches are often championed as means to engage stakeholders in richer, more meaningful deliberations around important planning challenges (Innes and Booher 2018). While intensive deliberations can yield wise, broadly supported outcomes, the time and resources required for participation typically necessitates working with very small groups of stakeholder representatives (Susskind et al. 1999). As Forester (2019) notes, "issues of representation" must be attended to in such processes.

This paper explores some of those issues of representation. It starts with the premises that: intensive deliberative processes can yield better outcomes; those processes inherently involve small groups of stakeholder representatives; representatives must thus be selected to speak on behalf of larger interests-based groups; through deliberation representatives often change their positions on the issues; and those shifts in position are not necessarily shared by the wider constituencies (i.e., stakeholders not at the table) that representatives are ostensibly speaking for. Given the seemingly inherent tensions among these premises, it is somewhat surprising that relatively few collaborative processes end with wider constituencies rejecting the agreements their representatives have reached. This paper asks the question of why that is.

This paper explores the question of representative-constituent alignment, or at least acquiescence, through an in-depth case analysis. The case revolves around the expansion of a small airport in Plymouth, Massachusetts. The Plymouth Airport Advisory Group (PAAG) was created by the local government and relevant regulatory authorities after neighborhood opposition to the original expansion plan emerged. The PAAG was a professionally-facilitated, consensus-based process that intensively engaged 15 representatives of airport users and surrounding neighborhoods. The group met multiple times over the course of a year, exploring and assessing options together, and ultimately arriving at a very creative agreement that allowed the interests of all involved to be met. A particularly novel part of the agreement is a plan to add an additional 300 feet of 'safety overrun' to the main runway rather than making it part of a formal extension.

In order to explore this case, and in particular the nature of representation therein, I conducted 37 interviews with neighborhood representatives to the PAAG process; PAAG airport user representatives;

other airport users; other neighbors that are active, but not directly part of the PAAG; neighbors randomly selected using a random address selection method; and the professional mediator. The interviews allowed me to broadly explore the similarities and differences between representatives and their wider constituencies, if and how they interacted, and the nature of PAAG members' legitimacy vis-à-vis their constituents.

This case suggest that representation-constituent interactions can take a variety of shapes. In some cases, representation appears to be what Mansbridge (2003) calls 'gyroscopic' in nature; constituents believe that representatives are acting in their best interest even when they deviate from initial positions because of their underlying values and principles. This seems to be particularly evident when representatives and constituents are closely aligned and have strong bonds. In Plymouth, this was the case between airport users and their representatives. In other cases, representatives maintain legitimacy by keeping in close contact with their constituents. In Plymouth, neighborhood representatives were careful to caucus with other active members of the community, and in particular the concerned neighborhood groups. However, the nature of representation was less clear when bringing non-active neighbors into the equation. Interviews with randomly-selected neighbors suggested that most had weak or no opinions on the project, and very few had heard much about it. This brings into question the source of legitimacy of neighborhood representatives. In addition to exploring these findings, this paper proposes initial recommendations on how representation might be improved, particularly when speaking for diffuse groups.

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Key Words: Collaborative governance, Representation, Stakeholder engagement, Deliberation, Community opposition

LEARNING, PLANNING, AND POLICY. PAPER DRAWN FROM RESEARCH FOR A BOOK IN PROCESS, CALLED: BEYOND RATIONALITY: IMPACTFUL PLANNING IN A POST-TRUTH ERA. NEW YORK: ROUTLEDGE
Abstract ID: 1051
Individual Paper Submission

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Regardless of a planner's employer, chances are, that planner's work involves advising decision-makers on critical matters. Those decision makers may be elected officials, such as those who serve a city, state, or provincial government agency; or they may be appointed board members, such as those managing a non-profit agency. Across these sectors, success as a planner depends on supporting good decisions by providing information that is timely, relevant and useful, notwithstanding cynicism expressed by some scholars about the ability of public servants to truly shape political perspectives (e.g. Shulock, 1996). This paper aims to empower new and junior planners in successfully fulfilling this advising role, and to foster a greater sense of professional satisfaction because they are impactful.

In providing such support, the paper acknowledges the critical role of non-rational thinking in the planning process, and in planning decisions. In this vein, it consolidates knowledge from planning theorists who have advocated for a more conscious and thoughtful recognition of the role that emotion

plays in planning decisions (e.g. Hoch, 2006; and Ferreira, 2013). For example, rather than seeing emotion as a contaminating influence, Hoch urges us to acknowledge the presence of emotion, so as to ultimately work with it more effectively. Ferreira builds on Hoch's work, encouraging us to avoid seeing rationality and emotions as mutually exclusive, and to see them instead as "extremes of a scale" (2013:709).

Beyond drawing from a relatively small group of planning theorists working with non-rational decision influences, the paper also consults other disciplines for new insights on how decision-makers take in, and use, complex ideas. These disciplines include public administration, as well as research from adult education and cognitive science about how people learn and think (e.g. Clark, 1998; and Taylor and Marienau, 2016).

In drawing on these external influences, the paper introduces planners to the notion of cognitive busyness, a state of overload which can prevent the brain from taking up important information particularly in a high-stakes context. It also considers how anxiety and prolonged stress can further impede a decision-maker's ability to "hear" the advice they receive from their professional planning staff, exacerbated by the production of cortisol in the body which has physiological impacts on information processing over the longer term. On the more optimistic side, the paper examines how techniques from adult education can provide potential new approaches for supporting decision-makers in receiving, understanding, and using the information that planners provide (Taylor and Marienau, 2016). While as public policy professionals we must always respect the right of our elected officials to make a decision, we may serve our agencies, and the public, better when we take steps to do what we can to avoid premature decisions made merely out of anxiety. Important resources in this regard, which the paper describes, can comprise key concepts like scaffolding which, in an adult learning context, can include: emotional scaffolding; process scaffolding; content or structural scaffolding; and community scaffolding.

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Key Words: decision-making, rationality, rational planning, emotion

THE ORGANIZATION OF REPRESENTATION: THE COMPOSITION AND RESPONSIBILITIES OF AD-HOC COMMITTEES IN PLANNING PROCESSES
Abstract ID: 1070
Individual Paper Submission

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Planning processes frequently include the constitution of one or more central ad-hoc committees (sometimes called steering committees, task forces, leadership teams, advisory committees). Such committees can be an important component of a broader public engagement strategy since they can serve as venues for inclusion and deliberation. A range of theoretical and practical approaches exist that can inform the recruitment and selection of those who serve on these ad-hoc committees. In principle, these ad-hoc committees can embody one of the central ways in which the representation of interests, groups and communities is organized in planning processes.

The assessment of the intentions, qualities and outcomes of participatory planning processes are central to much scholarly activity in the field of planning. However, the composition(s) and structure(s) of these ad-hoc committees has not been systematically described or theorized in the existing planning literature. This research project seeks to answer the interrelated questions of 1) how ad-hoc committees in planning processes are composed, 2) what their role(s) are and 3) how members of these committees view their responsibilities. The goal of the paper is to contribute to longstanding questions in planning about the relationships between participation, inclusion and representation.

To answer these questions, this paper analyzes the composition, role(s) and responsibilities of ad-hoc committees for processes that resulted plans that were nationally recognized by the American Planning Association. Between 2012 and 2019, 12 plans were awarded the APA's Paul Davidoff or Daniel Burnham awards, for advancing diversity & social change and comprehensive plans, respectively. Specifically, the paper investigates the approaches to determining the size and arrangement of ad-hoc committees and, when available, information about their composition, such as their members' organizational affiliation, training and gender. This selection of plans includes a range of committee selection mechanisms and structures, including an advisory committee made up exclusively of existing planning commission members, a steering committee that was selected and appointed by a planning board and a citizen advisory team, which included a range of key stakeholders appointed by the mayor. In addition to the plan analysis, the paper relies on semi-structured interviews with planners responsible for the process design and with members of the ad-hoc committee(s).

This paper aims to contribute to both the theory and practice of planning. It organizes and categorizes a range of ad-hoc committee formation practices and relates those to theories on representation, inclusion and participation in planning and decision-making in the public sphere. The paper contributes to planning practice by providing an overview of the range of choices practitioners face when considering the structure and composition of one or more ad-hoc committee(s).

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Key Words: process design, representation, participation, inclusion, planning process

TRIBE-COUNTY RELATIONS IN ROADWAY SAFETY: RECOGNITION OF TRIBAL SOVEREIGNTY AS AN EQUITY DIMENSION OF INTERGOVERNMENTAL COORDINATION
Abstract ID: 1098
Individual Paper Submission

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Within the U.S., 573 federally recognized tribes are responsible for the direct provision of services to residents of their reservations and their enrolled citizens, wherever they may live. The basic principles of tribal sovereignty and native rights are rarely taught to public administrators, although this is an important foundation for inter-governmental relations that are rightfully respectful of tribal sovereignty and are well informed about American Indians' rights and contexts across an array of public policy areas, from natural resource management to child welfare. Ignorance of or hostility towards Native sovereignty and treaty rights has equity consequences for the resources available to Native people, who experience longstanding, severe, systemic disparities in education, economic opportunity, and health.

To date, research on tribal governance within the field of public administration and management has been limited (Ronquillo, 2011). In particular, the topic of this paper -- the ways in which state and local governments should and do interact and work with tribes -- is rarely researched. Therefore, I begin the paper with a literature review about tribal sovereignty and self-determination in and outside of inter-governmental relationships. I then review the prior literature on intergovernmental coordination between tribal and non-tribal (federal, local, and state) governments in the U.S.

The empirical analysis concerns power relations between tribes and state or local governments relating to public safety (law enforcement and emergency medical service response) in and around American Indian reservations. Data are drawn from ethnographic research I conducted in partnership with the tribal governments of Red Lake, Fond du Lac, Leech Lake, and Mille Lacs, Minnesota. Sources include extensive ethnographic observation (90 days), interviews (n=102), focus groups (n=8), and brief surveys with residents (n=220) (Quick and Narváez, 2017). We interviewed both tribal government managers and their counterparts in county, city, and state government agencies with overlapping – and indeed often ambiguous and competing – jurisdiction and responsibility, to understand their attitudes towards, practices for, and experiences of coordination.

I find strong interdependence between tribes and local governments in three aspects of roadway safety: building and maintaining roads, law enforcement to reduce reckless driving, and responding to medical emergencies. The data also indicate that local governments challenge tribal sovereignty out of hostility and/or ignorance, resulting in inequitable levels of service to Native people and reservation communities; delays in public safety response due to poor coordination, misunderstandings about jurisdiction (particularly relating to Public Law 280), and non-integration of emergency service systems or law enforcement; and both gaps and duplication of effort because jurisdictions fail to cooperate. Conversely, I find that sometimes they mutually recognize their interdependence and coordinate to mutual benefit, such as through mutual aid agreements between county and tribal law enforcement, by pooling resources for road improvements, or by coordinating their work to connect safe routes to school infrastructure into robust, interlocking systems.

I highlight the factors that support positive interjurisdictional relationships between tribes and state and local governments, and conclude with suggested directions for additional public administration research and education on the intersections of equity and Native sovereignty.

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Key Words: Tribal sovereignty, Indigenous planning, Decolonizing planning, Tribe-state relationships, Policing and emergency response

PLAN MONITORING AND EVALUATION: ARE WE THERE YET?
Abstract ID: 1125
Individual Paper Submission

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Under-performance or failure of a plan (e.g. comprehensive plan) can have serious ramifications: waste of constrained resources, missed opportunities to reach potential, errors of judgment, reputational damage, and so forth. These outcomes are to be avoided at all costs.

Too often, planners simply do not know whether and how their plans turned out. Planners often can't easily answer the inevitable awkward questions posed by community stakeholders and decision-makers: What, exactly, has this plan achieved? What difference has the plan made? How do we know? And, what lessons might we learn from that planning experience? (Alexander 2006; Talen 1996).

Plan monitoring and evaluation can enhance the credibility and relevance of comprehensive plans and build support for the plan - and by extension, the planning function in municipal government. However, several recent studies (see Stevens 2013; Seasons 2003; Guyadeen and Seasons 2016) suggest that many planners do not (or cannot) monitor or evaluate their activities in a consistent, structured, formal or regular manner. Indeed, monitoring and evaluation seem the forgotten stages in the planning process. As Seasons (2003, 431) notes, "this under-use of monitoring and evaluation is perplexing." Why is this so often the case, especially when the merits of plan evaluation seem so compelling?

In an earlier paper, Seasons (2003) argued that several factors can impede or facilitate plan evaluation, including: staff capacity and expertise, political will, corporate cultures, and chronic resource constraints (among many other factors). The Seasons (2003) study was carried out over the 1999-2000 period; 14 county or regional municipalities in Ontario, Canada were studied. In this paper, we revisit the same municipalities 20 years later and pose the same question set that reflects several themes: What's going on? Has plan monitoring and evaluation practice progressed over the past two decades in these municipalities? If so, how do these municipalities monitor and evaluate their plans? And if very little has changed with plan monitoring and evaluation, why – what are the reasons?

The lessons learned from this research should enhance our understanding of the characteristics of effective plan evaluation process design and management, explore the factors that seem to impede or facilitate plan evaluation, and inform interventions by advocates of plan monitoring and evaluation in municipal government.

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Key Words: plan, monitoring, evaluation

ILLUMINATING SANTA ANA'S SUNSHINE ORDINANCE: A CITY'S DEVELOPMENT PROCESS AND ITS IMPACT ON NEIGHBORHOOD CHANGE
Abstract ID: 1144
Individual Paper Submission

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Public participation in planning has the potential to enable residents and community organizations to influence development projects, but all too often public consultation occurs late in the decision-making process and provides few meaningful opportunities for these stakeholders to influence the parameters of new development and neighborhood change (Beard & Sarmiento, 2014; Arnstein, 1969). This research project assesses the impact of the 2012 Sunshine Ordinance in the low-income, Latinx community of Santa Ana in central Orange County, CA which requires early community consultation for proposed city-sponsored development projects, large residential and non-residential projects, and development projects requiring a zoning change. It requires developers hold a community meeting within 20 days of submitting a site review plan, and that a meeting notice be provided (in English and Spanish) to all property owners within 500 feet of a proposed development site. It originated from the Santa Ana Collaborative for Responsible Development's (SACReD) call for reforms to the planning process to ensure greater transparency, accountability, and public participation in the development decisions in Santa Ana (Sarmiento and Sims, 2015). While the Sunshine Ordinance remains active, many questions remain about whether this ordinance is implemented consistently across projects and the extent to which it has enabled residents and community organizations to shape nearby development.

Santa Ana also provides an important public participation case study because it has undergone substantial transit-supportive zoning changes and development projects that have raised resident concerns about gentrification, impacts on neighborhood character, rising housing and rental costs and displacement of long-term residents. This qualitative study uses procedural justice as a frame work (Rigolon & Nemeth, 2018) to investigate the nature of these Sunshine Ordinance planning meetings where community input is sought and to explore their implications for neighborhood change in the City of Santa Ana. Procedural justice is used to assess resident perspectives of fairness, equitable treatment, transparency, representation, and whether the process is carried in an unbiased manner (Emami, 2015). We completed 30 interviews in Fall 2019 with city planners, community-based organization leaders, and neighborhood association leaders who participated in Sunshine Ordinance project meetings regarding the development of luxury apartments and affordable housing in central Santa Ana. We also reviewed archival documents such as sunshine ordinance meeting minutes and official planning documents.

Our research questions for this study are: 1) Do development ordinances such as the Sunshine Ordinance foster procedural justice? and 2) How do residents use Sunshine Ordinance meetings to influence development and neighborhood change? To address these questions, first we examine the Sunshine Ordinance and similar development ordinances in other cities of the US by reviewing archival documents (i.e. city code) and identifying elements of procedural justice. Second, we examine Santa Ana residents' perspective of the dynamics and outcomes of Sunshine Ordinance meetings and experiences of procedural justice within those processes. Lastly, we identify some of the benefits and challenges of using development ordinances such as the Sunshine Ordinance to expand community participation in the planning process in neighborhoods experiencing social and economic change and gentrification. Interviews with planners and community leaders reveal divergent perspectives on the benefits and challenges of the Sunshine Ordinance as a strategy to increase equity and transparency. Although we

identify instances in which Sunshine Ordinance meetings influenced development plans (i.e., requiring more affordable housing units, more green space, etc.), results raise concerns that implementation of the Sunshine Ordinance has remained largely consultative and has not achieved its full potential to ensure greater procedural justice. This study contributes to public participation literature by evaluating an innovative public participation strategy that could help promote greater equity in low-income communities of color experiencing neighborhood change and gentrification.

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Key Words: Planning process, Procedural justice, Neighborhood Change, Public Participation

SCHOOL CLOSURES: ALL THE NEWS THAT'S FIT TO PRINT?
Abstract ID: 1159
Individual Paper Submission

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Across Canada and America, publicly funded schools are being permanently closed in rural and urban communities alike (Irwin and Seasons 2012). This is a significant community planning issue. The decision to close schools is nearly always hotly contested; supporters and opponents invoke strong claims about the benefits and costs of such closures to the community, to families and students (Basu, 2007). Given the symbolism and impacts of a closure, we pose these questions: How has the school closure experience been covered by the media? Does media reporting capture the full story? Is reporting typically fair, balanced and comprehensive? Whose voices are being heard? How much does the media influence decision-making?

As Dreier (2005) notes, news media typically focus on conflict situations when covering cities; there is a tendency to search for stories that confirm negative perceptions of urban life. Indeed, the media play an important role in framing and explaining the school closure phenomenon, and in shaping debate around this complex and highly emotional issue. Images of distraught parents and protesting students come readily to mind. This makes for compelling headlines.

This presentation reviews the findings of recent research that examined the role(s) of the media and its coverage of the school closure issue in urban and rural communities in Ontario, Canada. To date, there has been no comprehensive study of the manner in which these complex challenges are reported and presented. This research analyzes the types of media used by school boards and communities (e.g. conventional/print media); whether closures are presented in conventional reporting, editorials or letters to the editor; common message themes that can be identified in reporting; whose perspectives are represented (and those whose views are excluded in reporting); and how closures are perceived (and by whom).

Print and on-line media reporting was assessed by using a conventional content analysis design (Hsieh

and Shannon, 2005). The sample comprised articles published between 2005 and 2018 that discussed school closures or pupil accommodation reviews. Selected articles were drawn from the newspapers in Ontario and elsewhere across Canada with the highest readership/circulation numbers. The analysis focuses on capturing stakeholder reactions to school closures and pupil accommodation reviews, and on related policy changes that affect local school closure processes. Specific attention was given to the inclusion of community members in the process, their level of participation, their perception of the openness and fairness of their participation, as well as changes in community reactions to a closure over time.

Our research indicates that media coverage typically focuses on community and personal impacts – the "human" angle. Media reports report reactions to the decision-making process that culminates in the permanent closure of a school. The logistical and economic challenges associated with the continued operation of a small rural school, especially in vulnerable communities, receive considerable attention. However, professional planning staff – the people who conduct research and produce technical reports on the issue - are rarely quoted in media coverage. While the perceived negative impacts of a closure are always prominently reported, the inherently "wicked and messy" (Rittel and Webber, 1973) nature of these planning decisions seems overlooked.

The findings should inform local government and school board planning practice, and could lead to the development of a decision-making process that is more sensitive to the actual, and perceived, consequences of school closure for communities. At the same time, our analysis demonstrates the need for balanced reporting – i.e. ensuring the full story is presented from multiple perspectives that includes community residents and students, as well as school board representatives and local governments.

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Key Words: schools, closures, media, decisions, community

CITIZEN PLACE: INVESTIGATING PARTICIPATIVE PLANNING AND POLICYMAKING
Abstract ID: 1219
Individual Paper Submission

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Shared place is often an unavoidable conflict point between various political, cultural, and economic agendas. For public space to function well, stakeholders must be meaningfully and consistently engaged, rather than just called upon – or worse, demanding to be heard – only after decisions affecting their lives have been implemented by planners and policymakers. When people are involved from the start, resilience and collaboration is greatly enhanced. If stakeholders are excluded, uncertainty about changes often creates conflict and foments lasting distrust (Gardner, et. al., 2018) The differing ways communities receive a new public good depends on "the state of the system of goods offered" (Bourdieu, 1984). Key also is context: "Urban process implies the creation of a material physical infrastructure for production, circulation, exchange and consumption" (Harvey, 1978: 113).

Using Madrid and New York as case studies; this research explores how cities can effectively implement

mechanisms for citizen participation. In 2015, Madrid's government launched a website, D*ecide Madrid* (decide.madrid.es), that provides an online location for public decision-making; including budgeting, citizen-led petitions, and giving feedback on proposed legislation. The city's Office of Civic Participation built the software, and turned the code into an open source project called Consul that anyone can download. In 2018, it won a U.N. Public Service Award (in the category, "Making institutions inclusive and ensuring participation in decision-making"). Today, over 400,000 of three million Madrileños use the platform; anyone over sixteen years old who is a resident can participate. About $110 million of projects are funded annually, making it one of the world's largest participative processes.

Over a dozen cities in Spain, and governments in Buenos Aires, Bogota, and Lima, use Madrid's Consul software, as does New York's Participatory Budgeting Project, the largest civic engagement project in the U.S. In New York, the process is open to all residents, aged 11 and older, who live in one of twenty-six participating city council districts. In 2018, New York (with about thrice Madrid's population) funded $36.6 million of projects; 99,250 New Yorkers participated, developing hundreds of spending proposals and funding 124 community improvement projects for schools, parks, libraries, public housing, streets, and other public spaces.

Broadly, the research is guided by this primary question: How do multilateral participative mechanisms facilitate citizen engagement that produces effective and equitable planning and policymaking? To investigate, I deploy a three-fold qualitative methodology:

1. Stakeholder interviews: Asking questions that examine how citizens interpret their roles in participative processes and in their community is crucial for this research.

2. Participant observation: Observing and analyzing public (in-person and online) forums to better comprehend how these mechanisms function and to explore power dynamics between stakeholders; "by immersing themselves in the setting, the researcher is able to hear, see, and begin to experience reality as participants do" (Marshall & Rossman, 2011: 140).

3. Reviewing media coverage: Identifying key historical, social, political, and cultural issues at play. Mass media helps set the policy agenda by creating new analytical frames and introducing values or emotions that influence how people interpret and respond to policymaking processes (Stone, 2012).

The research demonstrates how multilateral public engagement makes cities better places to live. Much remains to be learned about implementing effective participative strategies; planning driven solely by political capital can never be effective, and notions of place are constantly changing and being reimagined. While outcomes will never be perfect, cities must create new processes that leverage stakeholders' capacities to generate ideas. At culmination, the work offers proposals for better citizen engagement; advocating for participative tools to mitigate the push-pull dynamics that stymy decision-making, and for legislation to safeguard this new planning and policymaking paradigm.

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Key Words: democracy, online engagement, participative process, urban place

REMAKING PUBLIC PARTICIPATION FOR THE 21ST CENTURY AMERICAN CITY: A LEGAL ANALYSIS
Abstract ID: 1299
Individual Paper Submission

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For the past 50 years, public participation has been considered the antidote to modernist technocratic urban planning that paved the way for the dislocation of thousands through federal Urban Renewal policy. In the intervening decades, planners and community advocates have promoted the practice of community participation in comprehensive planning processes. Most cities with requirements for comprehensive planning in their municipal codes, also require public participation in some form. The primary challenge for public participation in the contemporary moment is that the rules governing them are either opaque, limit how and where interested stakeholders can provide input, lack specific requirements of how urban planners process or use public input. Most conspicuous are legal sanctions for planners and public officials who fail or choose not to use public input. Further complicating this is the reality that most American cities can be located on a spectrum of highly capitalized and developing, stagnant or in decline. Along that spectrum, austerity regimes have placed intense pressure on urban planners and city officials to grow their tax bases by facilitating the accumulation of wealth through capital investment while reducing spending on social services such as neighborhood development. One result of that pressure is a striking increase in urban inequality across that spectrum. Under these circumstances, and without the force of law, public participation in many local contexts is at best, the subtlest of nods to constitutional procedural due process protections and at worst political theater to provide cover for entrepreneurial economic development regimes. To limit the extent to which urban planners and city officials can work against the interests of low-income communities facing significant reinvestment, displacement and gentrification, public participation will need to be completely reconceptualized. That reconceptualization must go well beyond basic constitutional due process or a mimicry of federal administrative law. Public participation in the 21st century must consider an agile and responsive empowerment model that minimizes information asymmetries, incorporates an anti-racist analysis of the political economy of contemporary U.S. cities, and views comprehensive planning as a contractual relationship between local governments and communities under which breaches are legally actionable and independent on electoral cycles and politics.

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Key Words: Planning Process, Citizen Engagement, Gentrification, Community Revitalization, Planning Law

INNOVATION AND POLITICS IN IMPLEMENTING SUSTAINABLE TRANSPORT POLICIES: A CASE STUDY OF NEW YORK CITY
Abstract ID: 1358
Individual Paper Submission

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The concept of low-carbon sustainable mobility has been widely embraced and a wide range of policy interventions has been proposed, such as road pricing, alternatives to automobile-based transport, and new technologies and fuels. In practice, however, there has been a gap between what have been proposed and what were actually implemented. Persistent failure to implement policies has been reported a common issue, thus hindered achieving policy objectives. Although the difficulty and obstacles in implementing policies are commonly recognized, transport policy implementation is a relatively under-researched area. The focus in much of the earlier studies tends to be on the content of what can be implemented to induce changes, but less on what it takes for policies to be translated into real actions, and how to monitor and evaluate policy effectiveness. Researchers have called for more empirical study on the processes, politics and governance issues during policy implementation process. Empirical studies on policy implementation can help facilitate policy learning, foster replication of innovation, and share best practices among cities.

This empirical study examines the processes, politics and governance issues during the policy implementation process in New York City from 2007 to 2013. On Earth Day of 2007, New York City Mayor Michael Bloomberg released a comprehensive long-term sustainability plan named PlaNYC 2030 to accommodate continuing growth and to mitigate climate change. This plan set an ambitious goal of cutting greenhouse gas emissions by 30 percent by 2030, and outlined 127 initiatives to transform six key interconnected areas -- land, water, transportation, energy, air and climate change. This research uses PlaNYC 2030 as a case study to investigate how the transportation goals and policies set in this plan were implemented from 2007 to 2013, when Mayor Bloomberg's tenure ended. The outcome of the seven-year implementation in the transportation sector is a mix of successes and failures. The Bloomberg administration failed implementing many of the bold transportation initiatives in PlaNYC, such as congestion pricing, and a plan to replace the city's entire yellow cab fleet with environmentally friendly hybrid vehicles. Many of the policies succeeded in delivery were those under the city's direct control and did not need legislative approvals from the federal or the state government.

My study applies theories of policy implementation, public administration, multi-level governance, and path dependence to investigate the policy-action relationship, the legal and legislative process, and the financing and governance issues during the policy implementation process. This study uses a qualitative multi-case methodology to cross-examine six innovative projects to answer three sets of questions: 1) How did the city get started with implementation once a plan was adopted and policies were formulated?; 2) For those projects implemented, what were the factors and strategies that enabled New York City to deliver cost-effective measures in a short period of time?; 3) What happened to the reforms and policy changes made by the Bloomberg's administration when a new Mayor took office in 2014 ? Were changes gained under the long-term plan institutionalized as new norms into the city's daily operation that could outlast Mayor Bloomberg's tenure? These questions are addressed through analyzing data gathered through policy document reviews and forty-five interviews with frontline practitioners, politicians, and advocacy leaders. This conference paper shares key strategies that led to a rapid implementation of some cost-effective policy initiatives, such as strong leadership, effective public engagement, appropriate policy framing, a data-driven decision-making and performance monitoring approach, and effective use of demonstrative pilot projects. This paper also shares New York City's approach to institutionalize policy reforms, such as creating legal and procedural barriers to prevent policies from being overturned in the future.

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Key Words: Policy Implementation, Urban Sustainability, Low-carbon Mobility, Implementation capacity, Policy learning

THE QUEST FOR URBAN SUSTAINABLE DEVELOPMENT IN A LATIN AMERICAN CITY: THE CASE OF THE 2014 SÃO PAULO MASTER PLAN, BRAZIL
Abstract ID: 1394
Individual Paper Submission

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Since the 1980s, urban planning theory has addressed the sustainable development paradigm. Many authors have tried to establish the criteria to reach an urban sustainable development, proposing the "compact city" paradigm, based on the combination of mixed uses with higher urban densities along mass transport systems. According to those authors, this model would maximize the use of infrastructure, reducing urban sprawl and the use of automobiles, thus reaching a sustainable urban development.

However, most of these theories were developed in the Global North and have addressed too much the relation between urban form, infrastructure and the environment, giving little attention to the social process involved in the production of space. In the Global South, however, most of the urban/environmental problems are caused by an uneven development in which a rapid urbanization process resulted in extremely fragmented and segregated cities, where access to infrastructure, public facilities and services is restricted to the higher income strata, whereas the majority of the poor lives in the so-called "illegal city" in disagreement with urban standards and in precarious conditions regarding environmental, sanitary and transportation issues.

Recently, the sustainable urban development concept has changed, most caused by the discussions occurred in the third United Nations Conference on Housing and Sustainable Development, Habitat III, resulting in a document known as the "Quito Declaration" or the "New Urban Agenda" (NUA). This document defined the main goals and strategies to promote an urban sustainable development. Unlike those previous theories, the NUA adopted the concept of the social function of the city and of the land, recognizing that the access to urbanized land, housing, drinking water and sanitation are fundamental elements to achieve this paradigm, stressing the role of urban planning, design and governance in this process.

This seems to be the case of the City of São Paulo, Brazil. With a population of approximately 12 million inhabitants, equivalent to half of its Metropolitan Area population, its growth happened in the last century in a Dependent Development context, resulting in an extreme uneven society. The physical result of this process was a fragmented space where the higher income strata have appropriated the central areas, best endowed with jobs, services and infrastructure, while the poorest were "expelled" from these areas, living in the precarious outskirt with huge deficits in mobility, infrastructure, services and public facilities, sometimes even occupying environmentally protected areas of greatest risk.

In 2014 the City of São Paulo enacted a new master plan, with a metropolitan vision, trying to promote a more environmentally balanced and socially equitable urban development. The plan proposed a series of strategies to cope with these problems. The aim of this paper is to analyze the partial implementation of this plan, considering the urban sustainable development principles, checking its limits and possibilities to

revert those problems.

For that, it will first define the parameters of urban sustainable development and how the new São Paulo Master Plan tries to address them, its proposed strategies and tools. Then it will assess the main achievements of the strategies and tools implementation, assessing to which extent they promote an increase of public transport use, a mixed use and socially diverse densification of infrastructure areas, affordable housing provision, thus reducing urban sprawl and the burden on environmentally fragile areas. The main data will come from official documents collection and mapping and their comparison with the plan stated objectives and the urban sustainable development parameters.

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Key Words: urban sustainable development, urban planning, master planning, São Paulo

TRACK 12 – POSTER ABSTRACTS

WHAT FACTORS DRIVE HAZARD MITIGATION POLICY IN THE U.S. -EVIDENCE FROM FEMA'S HAZARD MITIGATION ASSISTANCE GRANT PROGRAMS
Abstract ID: 1214
Poster

XIE, Ruixiang [Virginia Polytechnic Institute and State University] xrx1993@vt.edu, presenting author

This study analyzes the changes and driving factors of community-scale hazard mitigation planning efforts undertaken voluntarily in counties across the United States by examining which communities adopted hazard mitigation practices in the past 30 years. Hazard mitigation is best accomplished when based on a comprehensive, long-term plan developed before a disaster strikes; Since 1989, FEMA launched Hazard Mitigation Assistance grant programs (HMA) which provided incentives to local governments to implement cost-effective, long-term hazard mitigation measures. Currently, over 87% of the nation's population lives in communities with local hazard mitigation plans. However, little is known about why local governments are willing or unwilling to make hazard mitigation plans. Therefore, this paper aims to (1) explore the factors shaping local hazard mitigation planning participation, such as risks, socio-economic characteristics, and government capacity; (2) investigate policy diffusion mechanisms in disaster resilience policy since one community's hazard mitigation planning activities might directly or indirectly influence its neighbors' mitigation efforts; (3) understand how federal and state policies influence local governments to adopt incentive disaster resilience policies from an intergovernmental perspective.

According to existing literature, this study summarized four factors shaping local hazard mitigation planning participation: risk effect, neighboring effect, local determinants, and top-down federalism. First, a community's disaster experiences in the past may affect hazard mitigation planning. This study expects that the more natural hazards and the direct losses caused by the hazards in a county, the higher the disaster risk and the more likely it will adopt a hazard mitigation plan. Second, geographical proximity

always a role in policy learning. Varied local communities can serve as "policy laboratories" to experiment with innovative approaches to disaster resilience. If a policy is deemed to be successful, it can then be learned and adopted by neighboring local communities. Thirdly, some socioeconomic indicators can be used to measure the potential social vulnerability of an area to natural hazards. For example, higher population density and housing value in a county usually imply greater exposure to natural hazards and thus it is more likely to adopt a hazard mitigation plan. Previous research also has found that local capacity also affects the adoption of disaster resilience policies. Last but not the least, the federal government and state governments can influence county-level disaster resilience policy by adopting laws and policies.

Based on a combined dataset among 840 counties between 1989 and 2018 which collected from varied data sources, this research first uses a traditional county-year Event History Analysis (EHA) logit model to test the general hypothesis deduced without considering the dynamic effects with external incidents. Second, a Piecewise Constant Exponential (PCE) Model is used to estimate the stage-specific effects of covariates in the diffusional process by splitting the time axis into four stages.

Preliminary results reveal that counties with higher disaster risks are more motivated to adopt a hazard mitigation plan. Also, a county that adopts a hazard mitigation plan positively contributes to the probability of hazard mitigation plan adoption by other neighboring counties or counties in the same state. However, the results suggest that whether or not a county adopts a hazard mitigation plan is not significantly associated with its socioeconomic situation and local capacity. Finally, the result indicates that federal policies or laws related to hazard mitigation planning can accelerate disaster resilience policy diffusion by counties, but no evidence shows that the state policies or laws related to hazard mitigation planning may promote or hinder the adoption of FEMA's hazard mitigation plan by counties. The results can help policymakers to identify effective policy tools in hazard mitigation planning and understand the strategies to promote intergovernmental cooperation on this issue.

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Key Words: hazard mitigation, disaster resilience, FEMA, policy diffusion, event history analysis

TRACK 13 – PLANNING THEORY

TRACK 13 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS FOR THE SESSIONS

NAVIGATING PLANNING THEORY
Pre-Organized Session 5 - Summary
Session Includes 8, 13, 43, 82

BEAUREGARD, Robert [Columbia University] rab48@columbia.edu, organizer

This session explores what it means to write planning theory. The presentations range from a wide view of how to organize the planning theory literature to a more focused discussion of theoretical writing styles. In between, we consider the meaning of theory itself as it applies to planning and the situated and political inclinations of planning and thus planning theory.

Objectives:

- encourage theoretical thinking about theory
- emphasize the importance of writing style
- highlight the importance of power and agency to planning theory

RECONFIGURING PLANNING THEORY
Abstract ID: 8
Abstract within Pre-Organized Session 5

BEAUREGARD, Robert [Columbia University] rab48@columbia.edu, presenting author

The planning theory literature is loosely organized around a small number of dominant positions (collaborative planning, communicative practice, the just city), a number of less dominant approaches (e.g., Lacanian theory, actor network theory), and a scattering of idiosyncratic offerings. As an intellectual project, it is fragmented and unruly and, as such, open to diverse interventions. This is as it should be. Nevertheless, over the years a number of theorists have attempted to impose discipline. John Friedmann in his Planning in the Public Domain (1987) did so around four traditions: social reform, policy analysis, social learning, and social mobilization. Oren Yiftachel (1989) proposed categorizing the various theoretical approaches as being analytical, procedural, or oriented to urban form. Simin Davoudi (2015) has opted to focus solely on forms of knowing and Lucia Dubrucká (2016) has reverted to the most basic of questions: what, who, when, where, and why? In my talk, I suggest another way to think about how theorists write about and bring coherence to what we know about and hope for planning practice. I propose organizing the literature around four, core tasks common to most forms of action: knowing, engaging, prescribing, and executing. My talk will illustrate how this approach changes our understanding of the planning theory project while pointing to both its limits as well as its possibilities. My goal is not to engage in paradigm-building, but rather to shift our perspective and, by doing so, raise issues that have been suppressed or considered settled.

Citations

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Key Words: theory, core tasks, typology

THEORIES OF WRITING AND WRITING PLANNING THEORY
Abstract ID: 13
Abstract within Pre-Organized Session 5

CHETTIPARAMB, Angelique [University of Reading] a.chettiparamb@reading.ac.uk, presenting author

This talk will focus on the challenges, dilemmas and the art of writing planning theory focusing on three themes.

Students who set out to write an essay/coursework/dissertation are normally advised to prepare an outline structure of their work and to organise their work around this structure. The idea of 'freewriting' challenges this and was most famously argued by Peter Elbow (1973). Freewriting argues that often the process of writing is in itself a creative process and therefore this style of writing can potentially be more innovative than the former. This debate will be the first theme that I will examine in the light of writing planning theory.

Given the variety of theoretical positions in planning theory and the lack of general academic consensus in not just the planning discipline, but the social sciences in general, I will discuss the thorny issue of how and when can we decide that a contribution in a written text makes up a theoretical contribution to a discipline such as planning. This will build upon the work done in the social sciences for generally (Guetzkow, et al, 2004).

Finally, I will focus on the role of metaphors in writing theory. Metaphors have been argued to be both constructive and destructive in theory construction (Chettiparamb, 2006). I will review these debates and highlight some of the pitfalls and mistakes in using metaphors in theory construction, especially when metaphor is substituted for theory.

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Key Words: writing structure, theory building, theoretical contribution, freewriting

CONTESTED MEANINGS OF 'THEORY' IN PLANNING THEORIES
Abstract ID: 43
Abstract within Pre-Organized Session 5

DAVOUDI, Simin [University of Newcastle Upon Tyne] simin.davoudi@ncl.ac.uk, presenting author

One of the recurring criticisms faced by planning, and other, scholars is that their work, be it journal papers or doctoral theses, are 'under-theorized', 'lack theory', or make no 'theoretical contributions'. Statements like these imply that critics have a single entity in mind called 'theory' without necessarily having a clear idea of what that thing is to which they expect others to attend. Far from being wilful acts of dismissal, their assessments reflect the ambiguities of the concept of 'theory' itself, and its contentious nature. Despite centuries of debate among leading figures in physical, natural and social sciences, there is no commonly agreed answer to the ontological question: 'what is a theory'. This doesn't mean that we should abandon 'theory' from our planning lexicons. Nor does it mean that 'theory' can be used to refer to anything and everything. It rather highlights the existence of multiple meanings of 'theory' which remain in competition for legitimacy and dominance in planning theories. While acknowledging that concepts such as 'theory' are essentially contested, I concur with Donald Levine (1997: 4) that, "critical exploration of the meanings of key terms and their implications offer a … commendable route towards intellectual sophistication and clear thinking". My aim, therefore, is to unpack multiple meanings of 'theory' and their distinct contributions to planning thoughts and practices. This, I believe, offers a step towards, more productive peer reviews, better navigation of planning literature, and the advancement of planning theories.

Citations

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Key Words: Theory, Planning, peer review

GROUNDED AND CRITICAL. ON WRITING ABOUT PLANNING THEORY AS A SITUATED, POLITICAL PRACTICE
Abstract ID: 82
Abstract within Pre-Organized Session 5

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A classic target of criticism from within and out of the planning profession, planning theory seems to resist, as an intellectual project, mostly in academic circles, in the conventional form of conference tracks, peer-reviewed journals or university courses. And yet, I argue that theory should never get out of steam, as it is essential to illuminate practical problems that would otherwise go unnoticed or under-represented. As a social practice and as a regulatory institution within modern capitalism, planning is part of power struggles and social unbalances that constantly reshape places and communities. With this idea in mind, the paper makes two main assumptions about planning theory. One is that planning scholars do theory staying as close as possible to the real world that compels them to make sense of its complexity: this brings us to think of planning theory as a specific form of grounded theory. The other is that the scope of planning theory is not just to provide meaningful descriptions of how planning unfolds in the world 'out there', but also to provide a critical understanding of struggles and wishes rising around planning practice – this brings us to reflect on planning theory as a specific form of critical theory. In this perspective, writing about PT is a situated practice, with an eye to the causes and subjects with which the theorist shares a partisan (although non-uncritical) identification. Accordingly, the paper looks at planning theory literature as for how it theorizes the situation and prospects of sensitive themes such as the subaltern/repressed subjects of planning (power approaches), and the under-represented/under-theorized forms of agency (the more-than-human approaches). In these respects, it provides planning students with a tool to navigate planning theories according to their political concerns.

Citations

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- R. Beauregard, Planning Matters
- S. Fainstein, J. De Filippis, Readings in Planning Theory

Key Words: planning theory

CULTIVATING TRANSFORMATIVE PRACTICES: WAYS OF BEING, KNOWING, AND DOING AT THE HEART OF COMMUNITY ENGAGEMENT
Pre-Organized Session 25 - Summary
Session Includes 61, 62, 63, 64

SANDERCOCK, Leonie [University of British Columbia] leonies@mail.ubc.ca, organizer

How might new explorations in planning practice lead to innovative theories? Three of the four presenters in this session have been and are working with/in Indigenous communities (in Canada and Chile) while the fourth has worked as a practitioner doing community engagement across the global south. We strive not to be armchair theorists. We have a bias for practice, and for practical hope. Working across cultural differences is arguably one of the most challenging arenas of planning practice. The issue of 'outsider' status and the importance of building trust and respect is always front and center. What have we each learned and what are the implications for planning theory and pedagogy? This session explores what we believe has not received sufficient attention in planning scholarship: the importance of ways of being alongside the more widely discussed ways of knowing and doing. Bringing action inquiry into conversation with critical theories of social justice, we build on the works of Freire, Friedmann, Forester, Schön, Sandercock, Torbert, Scharmer, and Wilson, to posit the awareness of self and the social field as the fulcrum of transformative practice.

Objectives:

- Foregrounding the importance of ways of being in planning practice

ORGANIZING HOPE AND LEARNINGTO LET GO: WORKING AS AN OUTSIDER WITH AN INDIGENOUS COMMUNITY
Abstract ID: 61
Abstract within Pre-Organized Session 25

SANDERCOCK, Leonie [University of British Columbia] leonies@mail.ubc.ca, presenting author

Hypothesis

Could the making of a feature film in the Haida language serve as a catalyst for Indigenous cultural and economic revitalization on Haida Gwaii?

Context

Haida Gwaii is a remote archipelago in northwest Canada. Pre-contact, between 20,000 and 30,000 Haida people lived on Haida Gwaii. By the late 19th century, European diseases had reduced that population to 600. Government policies of assimilation further undermined the vitality and viability of Haida culture. For the past fifty years, the Haida have been resurgent, but the struggle for economic and cultural revitalization is ongoing due to the traumatic intergenerational effects of Residential Schools, and decline of the economic base (logging and fishing). The relative isolation, and lack of opportunities for youth on Haida Gwaii compounds the sustainability challenge. Haida cultural identity is linked to land, language and storytelling, yet their community is inundated with foreign media.

The planning practice challenge then, from an Indigenous community planning perspective, is how to use 'homegrown' storytelling in the context of community development.

Approach and methodology

In 2014 I negotiated a three-way partnership between the Council of the Haida Nation, the Inuit film production company, Kingulliit, and the Indigenous Community Planning (ICP) program at UBC, and applied for a research grant to develop a film script.

The goal of this partnership was to contribute to the ongoing cultural and economic revitalization of the Haida Nation by (1) preserving traditional language and storytelling through a community-based story gathering process bringing together youth and Elders, and culminating in the collaborative creation of a feature film script in the Haida language, drawing on Haida myth, legend and history. (2) providing training for 40-50 Haida community members as cast and crew of the film production: skills in acting, script writing, production and management skills, and (3) contributing to knowledge among and between First Nations, government, multimedia industry, planning practitioners and planning academics about the potential of film as a catalyst for Indigenous community development in other northern and remote communities.

Relevance

The theoretical framework for this project draws on various streams within planning theory (communicative, empowerment, and decolonizing theories), as well as my own practice based experience (Sandercock and Attili 2010a; 2010b) along with that of the Inuit film making partners.

A major stream of influential literature examines the role of planning as a colonial practice in settler societies, serving to render Indigenous populations invisible, to deny their rights, to exacerbate their geographical and economic marginalization, and provide them with culturally inappropriate programs and services (Porter 2010; Walker, Jojola and Natcher 2013). We were seeking, through our film work, to practice a decolonizing planning, working in partnership with the Haida and Inuit communities, supporting the Haida in achieving their own aspirations for self-determination, economic and cultural revitalization, and supporting Nation-to-Nation knowledge transfer from Inuit to Haida.

Results/Findings

It sounded good in theory. And on the surface the results were spectacular: $2m in production funding; and three years later, a 100-minute feature film in the Haida language with an all-Haida cast (with no previous acting experience), which premiered at the Toronto International Film Festival and went on to win numerous national and international awards. But how, as an outsider, did I navigate the process itself: co-writing the film script with three young Haida men, then participating in decisions about the pre-production planning? What went right? What went wrong? And how did I eventually fathom what was, and was not, mine to do (Wilson 2019)? This paper tells a painful story about learning to let go.

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Key Words: Indigenous Community Planning, Film as a Planning Intervention, Reflective practice, Decolonizing practice

SHIFTING COMPLICITIES IN PLANNING THEORY AND PRACTICE: REFLECTIONS ON THE POWER OF HISTORICAL, LAND-BASED, AND ACTION INQUIRY

Abstract ID: 62
Abstract within Pre-Organized Session 25

UGARTE, Magdalena [Ryerson University] magdalena@ryerson.ca, presenting author

For the past ten years, most of my scholarly work revolved around my doctoral research, which explored how planning has intertwined with western law to facilitate institutionalized Indigenous dispossession in settler colonial contexts over time and how that relationship unfolds today. Grounded in and contributing to critical planning theory – particularly discussions about the complicity of planning with colonialism (Dorries, 2012; Porter, 2010; Sandercock, 2004; Yiftachel, 2009) and Indigenous planning (Jojola, 2008; Matunga, 2013) – that work adopted an institutionalist approach (Barry, 2012; Healey, 2007). Planning policy and law were the objects of study. Empirically, theoretically, and methodologically that work was shaped by my own experience working in government settings. It was a clear example of the many ways in which planning practice and theory can connect and inform each other (Friedmann, 2008). Halfway through, that research project had two twists. Both happened during the long fieldwork stage and were, strictly speaking, not connected to the research process. However, they shaped the study in important ways and, most importantly, changed the direction of my current scholarship and practice. The first one involved serendipitously meeting members of a grassroots Indigenous organization with whom I shared similar political and intellectual concerns, who invited me to work together. The second was coming across a historical novel authored by a distant family member of mine, who tells in great detail the story of settlement in the area where my family comes from – the mountains of Nahuelbuta in Southern Chile – from the colonizers' perspective. The main character of the book is my great-great-grandfather. While my family lost ties with those lands over the decades, our complicity with the military occupation of that territory will be forever a reality, whether captured in history books or not. Years later, I find myself currently engaged in a multi-year joint action research project with the same organization I met more than half a decade ago, working on land restitution with Indigenous communities whose traditional territory encompasses precisely the lands my great-great-grandfather helped colonize a century and a half ago. From critical policy analysis, my work has turned towards archival research, land-based learning, and action research. Once again, my scholarship is empirically, theoretically, and methodologically shaped by personal experience, or more specifically by a heightened awareness of my family's historical complicity with colonial dispossession. Planning theory and practice also connect and inform each other now, but in a different light. This paper critically examines this research journey and asks: What does it mean for planning scholars and practitioners to acknowledge their own direct complicity in processes of settler colonial violence? What are the potential and limits of self-awareness in such contexts? Is critical awareness of the self a prerequisite for achieving transformative practices? Or does such an individual emphasis risk losing sight of structural injustices and placing the planner – as opposed to communities and their material needs – at the centre of the discussion? What kinds of skills are needed by planners in order to engage in these conversations? Building on the work of scholars who have extended theorizations of reflective practice in settler colonial contexts (Porter, 2009; Regan, 2010; Sweet, n.d.) – but also engaging carefully with such conversations in light of well-justified accusations of white guilt – the paper reflects on the potential of historical work (both archival research and oral history) and collaborative action inquiry as a way of translating increased self-awareness into work that follows Indigenous planning priorities. The paper also offers insights regarding the potential of collective land-based learning in re-writing planning history(ies) in light of common, yet diverging, connections to territory.

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Key Words: Transformative practice, Action research, Historical complicity, Land-based learning, Settler colonialism

INTERNALIZING RADICAL INTERDEPENDENCE: THEORY AND PRACTICE
Abstract ID: 63
Abstract within Pre-Organized Session 25

WILSON, Patricia [University of Texas at Austin] patriciawilson@utexas.edu, presenting author

Overview. Wilson presents community engagement as an embodied practice of radical interdependence. Such practice attunes to the creative potential of the relational field—the life space in all its dimensions. The practitioner dances with that relational field, senses its pulse, acknowledges grief, catalyzes discovery—in short she becomes an agent of, and participant in, the social field's own evolution. Her practice depends on her own self-awareness as well as her awareness of the relational field. It is a practice of the mind, the heart, and the soul in service to social justice. It is deep democracy.

Theoretical contribution. The author introduces a grounded feminine dimension to reflective practice. While double-loop learning (Argyris and Schön, 1978) lies in the cognitive domain of the reflective practitioner, Wilson posits that 'triple loop learning' is a different kind of learning or knowing—a subjective awareness that is both heartfelt and embodied, and essential to relational practice. In so doing, she takes community-engaged planning practice beyond the participatory turn to the ontological turn: a shift in the place of perception to one's deepest source (Scharmer 2007).

Implications for Planning Practice and Pedagogy. This ontological turn elevates the importance of 'being' skills in both practice and pedagogy. The 'being' skills are the alchemical agent to effective 'doing' in the context of radical interdependence. They hold the answer to Arturo Escobar's unanswered question: how to internalize radical interdependence in our practice of community engagement for social justice.

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Key Words: Community engagement, radical interdependence, ontological turn, inner practice, deep democracy

ON THE EMERGING NATURE AND LOGIC OF INDIGENOUS WELL-BEING: A HEILTSUK PERSPECTIVE
Abstract ID: 64
Abstract within Pre-Organized Session 25

LOW, Maggie [University of British Columbia] maggie.low@ubc.ca, presenting author

This paper explores what it means to "be well" in Heiltsuk Territory on the central coast of what is now known as British Columbia, Canada. Achieving "increased human well-being" has been a major goal explicitly addressed in political agreements and legislation pertaining to this region since the late 2000s, including the Coast Funds, the 2009 Reconciliation Protocol Agreement, the 2016 Amending Agreement, and the Great Bear Rainforest Land Use Order. What has remained elusive, until recently, is what 'human well-being' means to the Indigenous communities who have called this region home since time immemorial, and how to include people's connections to land and waterways in measuring it.

Common conceptions of well-being have been criticized for being predominantly reflective of Judeo-Christian values, and remains in the purview of socio-economic scholars who regard the maximization of economic utility as the central basis of well-being (Sangha et al., 2015). Using Indigenous well-being literature (Million, 2013), Amartya Sen and Martha Nassbaum's "capabilities approach" (Nussbaum, 2011; Sen, 1985), and two years of ethnographic data, this paper finds Heiltsuk well-being is best understood as rooted in a placed-based identity resisting over a century of colonial policies. Specifically, Heiltsuk place unhindered access to territory at the core of what it means to "be well as Heiltsuk." Moreover, Heiltsuk territory is inextricably linked to a complex social and political system to which Heiltsuk individuals and family lineages are tied and governance and jurisdictional authority founded. Thus, sincere efforts to "increase human well-being" require adherence to place-based notions of Indigenous rights and sovereignty. By taking an ontological approach to defining Heiltsuk well-being, Heiltsuk are engaging in the necessary transformative practices we must strive for as planners (Wilson, 2019).

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Key Words: Indigenous well-being, Heiltsuk Nation, transformative practice

HOW (PLANNING) INSTITUTIONS EVOLVE: HISTORICAL INSTITUTIONALISM AS PLANNING THEORY 1
Pre-Organized Session 57 - Summary
Session Includes 218, 219, 232

SORENSEN, Andre [University of Toronto] sorensen@utsc.utoronto.ca, organizer

Historical Institutionalism (HI), developed by comparative political scientists to understand how cross-national political differences reflect cumulative processes of institutional stability and change (Thelen, 1999, 2004; Hacker 2004; Pierson, 2004), is now being applied by planning scholars to understand sub-national differences, as well (Sorensen, 2015, 2018; Faludi, 2018; Salet, ed. 2018). How and why do planning institutions, which are almost always constructed at a mix of spatial scales, vary so significantly in their character and scope, both within individual city-regions over time, and comparatively across regions? These sessions' papers apply HI's theoretical framework and methods to a range of global locations, spatial scales, planning sub-fields, and time periods. The papers illuminate how state and non-

state actors engage with planning processes in markedly different, path dependent ways, and the significance of self-reinforcing processes in shaping institutional change.

Objectives:

- Developing conceptual frameworks for comparative planning research
- Understanding temporal processes of institutional development in planning
- Advancing research methods in planning theory and planning history

PLANNING THE NON-CAPITALIST CITY? A HISTORICAL INSTITUTIONALIST ACCOUNT OF THE COOPERATIVE MOVEMENT IN AMERICAN CITY AND REGIONAL PLANNING

Abstract ID: 218
Abstract within Pre-Organized Session 57

SPICER, Jason [University of Toronto] jason.spicer@utoronto.ca, presenting author

In recent years, many US city and state governments have acted to reduce barriers for worker and community-owned enterprises, incorporating cooperative business development into the community economic development planning toolkit. The scale and scope of these efforts today is surprisingly robust (Spicer, accepted/forthcoming 2020), given the presumed marginality and comparative rarity of cooperative enterprise in the US, and also given the seemingly limited recent prior use of these strategies in planning in the "Progressive Cities" era in the 1970s and 1980s (Dickstein, 1991). How and why did these strategies proliferate so quickly into the planning domain over the last decade? Is it a merely mechanistic response to a generation of rising inequality, sparked by the last Global Financial Crisis (GFC) a decade ago and further fueled by subsequent populist politics?

This paper attempts to answer this question by building on recent efforts to apply historical institutionalism (HI) to planning. These efforts have argued that sub-national institutional processes, such as those involved in urban planning, are subject to the same temporal patterns of evolution as the nationally-scaled ones which informed the development of HI in political science (Sorensen, 2015). Far beyond being driven by dramatic shifts after moments of "critical juncture" crisis, historical institutional change more often reflects four inter-junctural evolutionary processes of incremental institutional and policy change: drift, displacement, layering and conversion (Thelen and Mahoney, 2015). Beyond answering the specific question of how and why cooperative enterprise emerged as an institutional practice in planning, what does applying this framework reveal more generally about HI and its relevance for planners?

Using historical document analysis-informed process tracing, this article examines two centuries of shared history between the cooperative movement and city and regional planning in the US, which emerged together and conjoined from Anglo-American utopian socialist thought and practice. Far from being a new or marginal planning concern, cooperative business models originally occupied a prominent position in early modern planning models. Early efforts to develop utopian communities involved not just plans for cooperatively owned land/housing, but cooperative businesses and services, as well. As planning the capitalist city (Foglesong, 1986) came to dominate the emerging field of planning practice, cooperative models were institutionally displaced from planning, receding in importance by the early twentieth century in favor of both private market and public sector ownership. As city planning subsequently evolved beyond managing the effects of economic development to actively promoting it (Chapple, 2012; Hu, 2017), cooperative models subsequently returned, institutionally layered onto the existing urban planning and policy toolkit in the wake of critical juncture moments of urban crisis, first in the 1960s, and more prominently today.

The case exposes the strengths and limits of HI to enrich planning history and theory. It affirms a core tenet of HI: that simplistic analytical narratives of change being driven by crisis events of "critical junctures" (e.g. the GFC) obscures the fact that institutional practices adopted in their wake are often

ones with long-standing, pre-crisis provenance in a given context. In the case in question, an HI view exposes that cooperatives and planning have a shared institutional origins story. It is therefore not surprising they have evolved in close relation to one another over time, and in a manner consistent with known HI evolutionary pathways. What HI cannot explain, however, is (a) why these practices emerged together and then diverged; or (b) why neither has achieved the type of strong nationally scaled institutional policy framework in the US as in so many other developed democracies. Sociology's strategic action field theory, however, a successor framework to HI, might be usefully applied to such types of planning-related questions.

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Key Words: planning theory, planning history, historical institutionalism, community economic development, cooperatives

THE SOFT-POWER IN SKILL: REIMAGINING INSTITUTIONAL SOLUTIONS FOR ECONOMIC INCLUSION
Abstract ID: 219
Abstract within Pre-Organized Session 57

LOWE, Nichola [University of North Carolina at Chapel Hill] nlowe@unc.edu, presenting author

America has a jobs problem—not enough good paying jobs to go around or clear pathways leading to them. Skill-based solutions are critical for addressing this employment crisis, but the transformational power of skill is frequently misunderstood. Too often skill is narrowly equated with educational attainment or oversimplified through measurement techniques. This paper uses an institutional framework to argue the real power of skill lies in its uncertainty, reflected in the elemental yet enigmatic questions of who possesses skill, where it resides and whose responsibility it is to build over time.

The paper starts by outlining the broad terms of a recurring skills-focused debate over rising income inequality, which has only intensified in the wake of the Great Recession. It makes the case for repositioning skill within an older institutionalist framework, recognizing that repeated claims by employers of skill shortages provide an important opening for alternative labor market interventions. Labor unions have long created and defended protective structures that guarantee workers' access to extensive on-the-job training and tethered those supports to skill-rewarding wages and industry-recognized portable credentials. But their precipitous decline in the United States does not mean an end to negotiations around skill. There is room for other institutions to join those efforts and push them further by recognizing skill as a socially-constructed resource that is ambiguous, fluid and open to contestation.

Contemporary institutionalists rightly call for stronger federal and state regulation: better enforcement of antidiscrimination laws, higher minimum wage guarantees, required employment benefits (i.e., health insurance, family leave and overtime pay) and related income-stabilizing legislation. Regulatory action can improve economic mobility and opportunity by holding firms accountable to high wage standards and protecting workers against employer abuse and discrimination. But what gets missed by today's institutionalists is the other side of the institutional coin—labor practices and processes within firms that

reflect employer commitments to skill formation and with formal management strategies in place to closely link career mobility to wage increases, greater employment security and improved job satisfaction. Institutional actions that shape these internal processes harness the blunt power of regulatory change and ensure employers behave in ways that proponents of stronger regulation ultimately hope to achieve.

Originating institutionalists, including economic development planners, writing in the early-mid 1990s understood this reinforcing dynamic. They recognized that regulatory structures outside the firm and micro-institutional practices within them worked in unison to produce "mutual" benefits for industry, worker, and society alike. Equally, early institutionalists helped demonstrate that external institutional protections both shaped and were shaped by sources of worker power often derived from the daily struggle over skill, including its development and resulting rewards. In this respect, they were also cognizant of ongoing tensions between workers and employers, including less than ideal business practices that threatened this institutional harmony.

Given this earlier institutional framing—one that is representative of 'incremental' theories of institutional 'layering' and change—what should we make of a growing institutional divide over skill, reflected in the push outward, away from the internal workings of the firm? Should we assume that interdependencies once forged within and outside the firm are longer attainable in our modern labor market environment, thus limiting options for institutional engagement to only the formal, regulatory sphere? Or is there renewed opportunity for institutional integration that recognizes and draws out sources of 'soft power' by engaging the micro-processes and micro-politics of skill—and with added urgency to reclaim this institutional space in light of growing threats to worker-supporting regulation under the Trump administration? And if so, what might an integrated institutional solution look like today and how can economic development planning scale its impact?

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Key Words: skill, institutionalism, economic development planning, soft power, inequality

THE OBSCURE STATE: THE INSTITUTIONAL EVOLUTION OF HOUSING AUTHORITIES IN THE UNITED STATES
Abstract ID: 232
Abstract within Pre-Organized Session 57

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States and localities are increasingly active sites of policy innovation in the United States. While most studies of local policy and politics tend to focus on the relationship between city hall and the business community, I argue that municipal agencies are now becoming sites of policy innovation. I illustrate this phenomenon through the rise of housing mobility programs that help interested low-income families receiving housing subsidies move to higher opportunity areas for their children. Housing authorities across the United States are now voluntarily starting such programs, an unexpected trend given the history of race and housing in America; the lack of immediate or tangible benefits for local elected officials; and the difficulty of coordinating regional policy.

I explain this shift towards housing mobility programs as a result of two institutional factors. First, I argue that housing authorities are examples of what I call the "obscure state": municipal agencies exercising significant discretion over local policy formulation but whom have little salience to the general public. These agencies exhibit local bureaucratic autonomy, which I define as discretion to innovate and create policy beyond the agency's traditional policy or spatial boundaries. Housing authorities running housing mobility programs embody these features by reforming the goals of the voucher program to emphasize opportunity and by helping voucher holders move regionally. I argue that this local bureaucratic autonomy can be partially explained by the institutional configurations of public housing authorities as federally funded agencies. However, I find significant variation in levels of housing authority autonomy from city hall due to the particular political and legal histories of housing authorities in different cities in the US. Secondly, I argue that housing policy is experiencing a critical juncture as a result of an ideational shift towards housing mobility programs, with housing authority officials increasingly supporting greater access to opportunity for voucher holders due to mounting social science evidence. This shift in attitudes, I argue, allows housing authorities to take advantage of their obscurity and local bureaucratic autonomy to start housing mobility programs.

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Key Words: Institutions, Urban politics, Bureaucracy, Housing

GLOBAL POLICY MOBILITIES AND EQUITABLE LOCAL POLICY MAKING: PLANNING PRACTICE AND THEORY
Pre-Organized Session 58 - Summary
Session Includes 694, 695, 696, 737, 904

BIDORDINOVA, Asya [University of Toronto] asya.bidordinova@mail.utoronto.ca, organizer

This session focuses on the local equity implications of planners referencing policies from other contexts (Mccann & Ward 2011, Peck & Theodore 2015). Competing to attract and retain professional talent, financial investments, and tourism dollars, planners and decision makers often reference policy ideas from other cities. Replicating successful policy ideas from other planning contexts, decision makers often assume universally positive outcomes for local economies and residents. However, a lack of attention to possible equity implications can perpetuate socioeconomic stratification and valorize the urbanism wishes of the elite class (Healey 2012; Whitney et al. 2020). At the same time, however, referenced policies can empower marginalized residents and provide equitable solutions to urban issues. To achieve that, planners need relevant conceptualizations and tools. Featuring practical cases from the Global North and Global South, this session situates equity at the forefront of planning and policy making. Presenters will discuss tools and theories that planners can use to predict and manage the impacts of policy referencing on urban equity.

Objectives:

- Present evidence of the effects of policy referencing in local urban contexts.
- Discuss how equity is conceptualized by planners during policy referencing.

- Explore theoretical and analytical frameworks to help explore policy referencing in planning.

THE BUSINESS OF NATIONAL URBAN POLICIES: POLICIES FOR WHOM? THE ROLE OF GLOBAL PHILANTHROPY ON SPREADING THE 'URBAN SOLUTIONISM' IN LATIN AMERICA
Abstract ID: 694
Abstract within Pre-Organized Session 58

BLANC, Francesca [Politecnico di Torino] francesca.blanc@polito.it, presenting author

In the early 2000s, international organizations witnessed a reawakening of urban and regional planning, also as a consequence of the election of the former major of Barcelona Joan Clos as the Executive Director of UN-Habitat. The diffusion of a number of related programmes around the world partially substituted the previously dominant housing initiatives, a conceptual shift that became evident in the UN-Habitat agenda since 2010, leading to the diffusion of the so-called "new urban paradigm" and eventually merging into the New Urban Agenda approved in Quito in 2016.

In Bolivia, UN-Habitat started to work in 2018 on the formulation of the National Urban Policy (NUP), with the financial support of the Sweden cooperation aid. This activity builds on the homonymous framework published by UN-Habitat, aiming to homogenize national urban policies across the world to allow for comparison and knowledge sharing. More in particular, the NUP framework defines the main contents that a national urban policy should include, at the same time establishing rigorous steering mechanisms enforced by the UN-Habitat Head Quarters. In Ecuador, since 2017, the German cooperation aid has been developing a so-called "Sustainable Intermediate Cities Programme", based on the implementation of six Urban Labs, and has been supporting the National Government in developing the National Urban Agenda. The main goals are similar to those pursued by UN-Habitat in Bolivia, and linked to the implementation of the New Urban Agenda.

The introduction of the NUP and of other similar frameworks (e.g. the City Prosperity Index methodology) had progressively pushed countries, especially in the Global South, to adopt them as much as possible in order to become more appealing vis-à-vis international financial support. This phenomenon, referred to as 'urban solutionism', shows how the relation between international organizations and national governments is not anymore only pivoted around the provision of funds, but also on the spreading of common 'frameworks and methodologies for action' (Montero, 2018). Overall, one could argue that these policy frameworks and, more in general, the whole 2030 Agenda, and its related Sustainable Development Goals, have ensured that international organizations and global philanthropy seek urban 'solutions' at any cost, including leaving out structuring gaps and equity implications.

Aiming at shedding light on the matter, the proposed contribution discusses the rising impact of 'urban solutionism' and 'global philanthropy' in Latin America, on the basis of the cases of Bolivia and Ecuador. Building on a mixed methodology that includes participant observation, desk-research and semi-structured interviews, the analysis shows that the introduced "new urban paradigm" is nowadays detectable in the discourses of the majority of global philanthropy and international organizations, with its implementation that has become a hegemonic doctrine according to which to align every programme and project. As Victor Delgadillo argues, the new paradigm constitute a sort of 'urban menu' (Delgadillo, 2014) that international and philanthropic organizations propose to local and national governments, from which they should pick solutions for any possible problem they experience. The result is a continuous (re)production of comparable urban policies that follows existing neoliberal power relations between the Global North and the Global South.

Despite the mentioned hegemony, however, the experiences of Bolivia and Ecuador allow us to explore a number of elements that deviate at least partially from the main pattern, as for instance the introduction of the paradigms of Good Living ("Buen Vivir"), right to the city and rights of Nature that characterize their new Constitutions. This lead to reflect on the uncertainty surrounding the actual usefulness of prepackaged solutions imposed from top-down (Dolowitz & Marsh, 2000), against which the resistance

of governments and the discouragement of civil society are certainly a warning.

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Key Words: National Urban Policies, Latin America, Policy transfer, Urban solutionism, Global philanthropy

TRACING DISPLACEMENTS OF EXPERTISE IN URBAN PLANNING: THE PUBLIC SPACE AUTHORITY OF MEXICO CITY
Abstract ID: 695
Abstract within Pre-Organized Session 58

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This paper conducts an empirical analysis to identify the different articulations between knowledge, power and the subject in urban planning and infrastructure development of Mexico City. To do so, a timeline of urban planning and infrastructure in Mexico City is developed. This allowed identifying four different articulations of power, knowledge, and the subject during the period between the 1930s and the present: 1) the rise of urban planning; 2) intensive industrialization; 3) the new urban awareness, and 4) the pluralistic city. Particular attention is then placed in understanding the evolution of the formation of forms of urban knowledge and its connection with urban planning and infrastructure development. To trace this evolution empirically, I conduct semi-structured interviews with public space practitioners in Mexico City to compare two public spaces –the infrastructure developed by the Autoridad del Espacio Público in the 2010s (Public Space Authority), in retrospect with the development of the Chapultepec Park in the late 1960s. The comparison allows observing the evolution of expertise in urban planning in Mexico City and how it layered from one articulation to the other in the provision of public space infrastructure.

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Key Words: Expertise, Planning, Public Space, Knowledge, Power

RAISING LABOR STANDARDS THROUGH WORKER-DRIVEN POLICY CHANGE: THE CASE OF THE NATIONAL DOMESTIC WORKERS ALLIANCE

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Domestic workers are explicitly excluded from the protections of key federal labor and employment laws. This absence of institutionalized employment rights leaves workers especially susceptible to employer abuse and exploitation (Burnham and Theodore, 2012). To remedy this situation, the National Domestic Workers Alliance (NDWA), a network of 62 local organizations in 19 states, has successfully advocated for state- and municipal-level Domestic Workers Bills of Rights. To date, nine states have passed laws extending labor protections to domestic workers, as have two localities: Seattle and Philadelphia. Notably, the municipal laws mesh with a growing trend toward establishing new labor-standards enforcement offices within local governments.

NDWA's advocacy efforts are notable in several respects. First, they signal a multiscalar, developmental approach to raising labor standards, whereby not only is legislation crafted at the state and municipal levels, successive policies seek to extend the types of protections offered. There have been explicit efforts to build on earlier policies in other parts of the country, in effect ratcheting up labor protections over time. Second, domestic workers are directly involved in all aspects of policy design and advocacy. The formulation of policy models, in other words, has been a worker-driven initiative.

This paper uses a policy mobilities framework to analyze the channels through which NDWA has engaged in inter-jurisdictional policy learning. While much of the academic literature on policy learning has focused on how political elites use structural positions of power to mobilize policy models, little attention has been paid to how civil-society organizations deploy similar strategies to shape policy debates and achieve equity objectives. This paper will provide lessons to planners and practitioners who are interested in furthering equity agendas through translocal lesson-drawing.

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Key Words: Labor standards, Low-wage work, Poverty alleviation

POLICY MOBILITIES THEORY AND PRACTICAL IMPLICATIONS FOR EQUITABLE PLANNING: RETHINKING URBAN MOBILITY IN MOSCOW, RUSSIA

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Planners and other decision makers borrow ideas from other planning, political, and socio-economic contexts to improve quality of life in their cities. Policy mobilities thus provide fast solutions for domestic challenges and improve cities' international image. However, borrowed ideas often land in different planning contexts with varying equitable planning principles. To ensure that planning inspired by international practices contributes to equity, planners need to understand policy mobilities and their local effects. This presentation will summarize three decades of theories concerned with international circulation of policy ideas and discuss implications of these theories for equitable planning using the example of recent changes in urban mobility in Moscow, Russia.

Problem and research questions

Following the economic and political liberalization in the late 1980s, Russian transportation policy focus shifted from public transport to private automobility. By mid 2000s, Russia's capital Moscow was the most congested city in Europe. That negatively impacted the quality of life, becoming a political issue. In 2010, the new Mayor announced a shift from automobility to diverse urban mobility, prioritizing public transport, pedestrians and cyclists. As a city without a historical cycling culture, Moscow borrowed cycling policies from New York, Paris, and London. Analyzing the role of policy mobilities in Moscow's cycling policy, this research addresses two research questions: How do policy mobilities theories help explain the emergence of Moscow's cycling policy? What does the Moscow case contribute to understanding policy mobilities?

Research Strategy

Several frameworks provide analytical tools for studying policy mobilities, including mobile urbanism (Mccann and Ward 2011), policy mobilities (Temenos and McCann 2013), fast policies (Peck and Theodore 2015), aspirational urbanism (Ren 2017), and policy transfer (Dolowitz and Marsh 2000). This research uses elements from these theories to assemble a conceptual and analytical framework to investigate Moscow's urban cycling policy as evidence of a shift towards more equitable urban mobility.

Conducting an extended case study, I interviewed Russian and international planners, decision makers, community activists, and consultants. A policy transfer model (Dolowitz and Marsh 2000) provided questions guided interviews and data analysis. This enabled me to identify important components of Moscow's policy transfer: sources of the cycling policy ideas, motivation and channels of transferring ideas, the main international and local actors, and how ideas were transferred and implemented in the local context.

Findings

Policy ideas from other large cities helped conceptualize Moscow's first cycling policy. Without global competition among cities, equitable mobility, including urban cycling, would not have been Moscow's first policy choice. Until 2010, Russian cycling activists had unsuccessfully advocated for cycling infrastructure and equitable urban mobility. Cyclists did not represent a large enough constituent group to influence politicians, but international best practices promoted cycling as part of larger transport system reforms. Desperate to solve the traffic congestion problem, the Moscow government accepted those practices. Thus, policy mobilities provided leverage to community members in advocating for cycling policies and more equitable urban mobility. As a result, urban cycling became a reality in Moscow.

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Key Words: theory, policy, mobilities

THE POLITICS OF TRENDINESS: POLICY AND PROGRAM REFERENCING AND THE MYTH OF 'GOOD' CITY BUILDING FOR EVERYONE.

Abstract ID: 904
Abstract within Pre-Organized Session 58

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In this paper I create a new theoretical framework, the 'politics of trendiness', to explore the impacts of urban planning best practice adoption on urban equity. Best practices are the policies, programs, and projects that originated in one social, political, cultural, and geographic context, yet are being adopted in another (Montero 2017). Here I illustrate how planners' increasing reliance on best practices in their local jurisdictions is fostering city building practices that ultimately benefit some groups of residents over others. I use the politics of trendiness to unpack the tensions between what is intended by planners when they reference best practices and what is actually produced. Through focusing specifically on equity, this paper builds on the policy referencing and policy mobilities literature (Roy, 2010; Peck and Theodore 2015).

I use the politics of trendiness to suggest that planning is increasingly becoming placeless. What is most important is that planners are citing the trending policies and programs that compose 'good' city planning rather than conceptualizing these policies and programs based on the actual needs of local city residents. Planning then has often become a strategy for cities to compete with other cities to attract and retain professional talent, tourists, and economic development dollars, not to create more equitable cities for all residents (Whitney, Hess and Sarmiento-Casas 2020). To formulate the politics of trendiness, I borrow from discursive institutionalist analysis approaches that have emerged from Political Science and Sociology (Carstensen and Schmidt 2016). I use this discursive approach to illustrate how best practices persuade the interests and values of planners through their embeddedness within knowledge networks composed of by the world's most famous urbanists. The politics of trendiness then contributes to planning scholarship while maintaining relevance to planning practitioners who are responsible for planning within the socioeconomically divided cities characteristic of our era.

The data for this paper was collected between 2016 and 2018 from within Mexico City's government department of Laboratorio para la Ciudad [Laboratory for the City]. From 2013-2018, urbanists within the Laboratory for the City attempted to help solve urban planning issues facing Mexico City (e.g., mobility issues, lack of public green space, government mistrust, etc.) by adopting best practices from other cities around the world. To collect data, I situated myself within the local planning milieu created by the Laboratory for the City to observe how decision makers conceptualized equity and drew upon translocal and transnational knowledge upheld by powerful knowledge networks. I used participant observation to uncover how decision makers justified some policies and projects over others; semi-structured interviews allowed me to make insights on how employees in the Laboratory conceptualized equity.

This paper helps to challenge a history of urban scholarship that assumes northern cities as the default model for theorization by conceptualizing the politics of trendiness with a city that reflects the complex dynamics of socioeconomic stratification in the Global South. The intent is to then spark conversations about how it can apply in other urban jurisdictions that span both the Global South and the Global North to gain a more comprehensive understanding of how best practice adoption impacts urban equity.

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Key Words: Best practices, Southern urbanism, Urban theory, Policy mobilities, Institutionalism

HOW (PLANNING) INSTITUTIONS EVOLVE: HISTORICAL INSTITUTIONALISM AS PLANNING THEORY 2
Pre-Organized Session 76 - Summary
Session Includes 315, 318, 319

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Historical Institutionalism (HI), developed by comparative political scientists to understand how cross-national political differences reflect cumulative processes of institutional stability and change (Thelen, 1999, 2004; Hacker 2004; Pierson, 2004), is now being applied by planning scholars to understand sub-national differences, as well (Sorensen, 2015, 2018; Faludi, 2018; Salet, ed. 2018). How and why do planning institutions, which are almost always constructed at a mix of spatial scales, vary so significantly in their character and scope, both within individual city-regions over time, and comparatively across regions? These sessions' papers apply HI's theoretical framework and methods to a range of global locations, spatial scales, planning sub-fields, and time periods. The papers illuminate how state and non-state actors engage with planning processes in markedly different, path dependent ways, and the significance of self-reinforcing processes in shaping institutional change.

Objectives:

- Developing conceptual frameworks for comparative planning research
- Understanding temporal processes of institutional development in planning
- Advancing research methods in planning theory and planning history

HOW DO PROPERTY RIGHTS EVOLVE? INCREMENTAL CHANGE OF URBAN PROPERTY SYSTEMS IN COMPARATIVE HISTORICAL PERSPECTIVE
Abstract ID: 315
Abstract within Pre-Organized Session 76

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Urban planning institutions have major impacts on the distribution of wealth and profits from urbanization processes, patterns of urban property ownership, access to public goods and services and affordability of housing, and are characterized by fundamental differences between jurisdictions. Yet many argue that planning theory still has significant blind spots regarding property institutions (Blomley, 2017; Jacobs and Paulsen, 2009; Krueckeberg, 1995). This paper develops a comparative historical (CHA) analysis of the evolution of urban planning and urban property systems in the UK, Canada, and Japan to explore incremental change processes of property systems.

Urban property systems are complex and multi-dimensional, including interlinked institutions to regulate the production of new units of urban property, define, register, and protect urban property rights, supply and maintain urban infrastructure, and regulate capital investment (Sorensen, 2018b). These systems evolve historically, and often display path dependent trajectories of institutional development (Sorensen, 2015).

In many jurisdictions the institutional choices made when development control systems were first established created durable legacies in the form of basic institutional configurations including designation of legal authority and systems to ensure compliance, authorization of key actors, and associated

regulatory powers (Sorensen, 2018a). Institutional change occurs in planning systems both through formal legislative reform and also through incremental changes to policy, implementation, and through judicial processes (Sorensen 2015). The hypothesis explored in this paper is that an important factor shaping the evolutionary development of planning systems is the nature of mechanisms that allow institutional change without changes to basic enabling legislation, and that major differences exist between jurisdictions in the way such incremental change takes place. Such incremental change potential may sometimes be deliberately created as part of the legal framework, but may also emerge through changes to related institutions.

The focus of this paper is an examination of the mechanisms that allow incremental change of institutions regulating urban development without the need for legislative revision.

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Key Words: urban planning systems, property, institutions, incremental change, comparative historical analysis

GOVERNING SOCIAL-ECOLOGICAL SYSTEMS: 50 YEARS OF INSTITUTIONAL ADAPTION AND CONSERVATION PLANNING IN FLORIANÓPOLIS, BRAZIL
Abstract ID: 318
Abstract within Pre-Organized Session 76

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Urban institutions for governance, planning, and management are increasingly expected to respond to the environmental and social challenges of sustainable development. This paper advances an institutionalist approach to understanding transitions in the governance of social-ecological systems over time. By exploring the linkages between collective action, multi-level governance, and institutional restructuration over a 50-year period in Florianópolis, Brazil, this research demonstrates the ways in which strategic actors influence planning practices for linked social-ecological systems (McGinnis & Ostrom, 2014; Ostrom, 2009). Emphasizing the emergence period during which a new approach to urban planning challenged incumbent land use and conservation practices in the city, this project examines how collective action groups and private sector actors influence the institutionalization of new approaches to urban planning. New governance practices, informed by the unique social-ecological systems of Florianópolis, were established and maintained through the interplay of international norms and standards, multilevel political structures, and new forms of polycentric institutional architecture emerging from networks of state and non-state actors (Greif, 1998; Skocpol & Amenta, 1986). This paper contributes a theoretical approach to understanding the tactics used by actors to institutionalize integrated social and ecological rationalities in the planning process.

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Key Words: Institutions, Social-ecological systems, Urban planning, Collective action

BIFURCATED LAND USE INSTITUTIONS AND THE ORIGINS OF ASIA'S URBAN VILLAGE ENCLAVES
Abstract ID: 319
Abstract within Pre-Organized Session 76

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This paper investigates the land use dynamics that have produced Asia's urban village enclaves—formerly agrarian settlements that have been encircled by areas of intensified land use, such as industrial estates and commercial real estate developments. Similar settlement typologies are found across Asia, despite widely varying historical trajectories and government planners' efforts to eliminate them. What explains the emergence and persistence of these village enclaves? We answer this question through a comparison of two such villages on the peripheries of Chongqing, China, and Jakarta, Indonesia. Conducted in 2011-2012 and 2018-2019, our research in these two case studies included ethnographic interviews with more than three hundred residents, planners, developers, and government officials; review of relevant government documents, plans, and development materials; and on-site participant observation of enclave formation.

Based on this research, the paper uses historical institutionalism to develop a conceptual model that explains the emergence of these village enclaves as a result of persistent disjunctures in national land use institutions. While the specifics of their land use institutions are quite distinct and reflect divergent historical experiences of colonialism (Indonesia) and socialism (China), the two countries still share a common set of institutional dynamics. This includes, most prominently, an artificial disjuncture between state-administered land, which can be developed and transacted on the market, and collective land, which is partially insulated from market mechanisms. While state-administered land is subject to the bid rent curve (the value and use of each parcel is based primarily on relative location), collective land is not (the value of each parcel is determined primarily by use, not location). Collective land is further divided between agricultural land, which has many apparent substitutes and thus a relatively low value, and housing land, which has few apparent substitutes and thus a relatively high value. This double rent gap produces an opportunity for real estate developers, government officials, and other actors to engage in selective arbitrage, converting low-value agricultural land to high-value real estate while leaving high-value residential uses in place, thus resulting in urban village enclaves. The intensification of surrounding land use further increases the value of existing housing land, resulting in path dependencies that make it even more difficult to transform these enclaves in the future. The artificial disjunctures in China's and Indonesia's land use institutions therefore have an indelible impact on processes of socio-spatial transformation, resulting in the adjacency of disparate land uses, the encirclement and even isolation of village settlements, and the interdependency of village communities with their surroundings. These findings are also relevant beyond Indonesia and China, potentially offering guidance for planners seeking to improve the equity of socio-spatial outcomes on Asia's urban peripheries.

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Key Words: institutionalism, land use, peri-urbanization, enclaves, Asia

EXPLORATIONS IN THEORIZING SOUTHERN PLANNING
Pre-Organized Session 117 - Summary
Session Includes 521, 522, 524, 527, 529

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The proposed panels challenge planning theory from the position of "South." Here "South" is not a geographic reference, but a sociopolitical reference to subordinate communities, those whose voices are not heard and realities are invisible in the cannon of planning scholarship. The dominant theorization of urban processes and planning, what planning is and or ought to be, has been based on Western Euro-American-centric urban processes, particularly based on realities of dominant groups within those contexts. While the experiences of the global South in this scholarship has been apologetically accommodated as case studies, the experiences of the global North have been theorized as the norm and generalized as theories of, about, and in planning. A rising scholarship grounded in the experience of the subordinate groups, unsettle the cannon and explore a southern turn in planning theory. This exploration is organized through two panels. Contributors specifically address how their grounded realities offer, or take a step toward, alternative theorization of planning —be it conceptual, methodologic, pedagogic and/or theoretic.

Objectives:

- Interrogating the cannon in planning scholarship and contributing to a "southern" turn in planning theorization

CHALLENGES TO PLANNING THEORY AND PEDAGOGY: A VIEW FROM THE SOUTH
Abstract ID: 521
Abstract within Pre-Organized Session 117

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The dominant Western Euro-American-centric theorization of urban processes and planning has translated in numerous contexts of the Global South into a pedagogy of planning that either adopts outdated replicas of European and American planning curricula or aligns with the teaching of international planning in US Planning Schools, where the profession is dominated by the discourses and recipes of powerful donor agencies (Watson 2009, Kudva 2008).

Building on my experience establishing a planning program in the American University of Beirut since 2000, I reflect in this presentation on the work of translation and reinvention that was required to maintain the relevance of a planning curriculum and degree in a context where most of the basic assumptions that underline the profession are nonexistent. Indeed, the notorious fragmentation of Lebanon's populations

and territories and the incongruity of the geopolitical and bio-political organizations of land and people in a country where one of every four people is a refugee, makes it impossible to hypothesize the existence of a single "public sector" or "state" that can act as the custodian of a "public interest". By all accounts, however, the very justification of planning is made in the name of a collective, no matter how exclusive, and its existence is a prerequisite to the profession (Moroni 2004). Furthermore, the extreme commitment of the country's ruling elite to the precepts of neoliberal governance have allowed private interests to colonize the management of collective amenities or shared urban spaces, expanding the hold of private developers to extreme levels such as the design of planning and building regulations.

I argue that if teaching the repertoire of the dark side of planning is particularly relevant in Lebanon's context to denounce the misuses of the profession (Bou Akar 2019, Yiftachel 2000), it is also possible to imagine an alternative role for planning, one where its progressive potential is harnessed for the formation of new collectives and political imaginaries. By relaying the experience of the past fifteen years, I show that a pedagogy based on critical inquiry, research methods, and experimental workshops can produce professionals capable of navigating difficult institutional environments and inventing new spaces for the practice of planning as part of their exercise of the profession. I rely on a handful of examples taken from the cohort of 100 students who have graduated since 2004 from the Master in Urban Planning and Policy at the American University of Beirut to demonstrate my argument.

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Key Words: Pedagogy, Common Good, Beirut

TITLE: LEARNING TO SEE RESISTANT TEXTS AS AN APPROACH TOWARDS DECOLONISING PLANNING
Abstract ID: 522
Abstract within Pre-Organized Session 117

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At an international conference on planning in Africa I posited the idea of learning from African knowledge systems in order to inform our context-specific interventions. But rather than celebrate new learning opportunities, members of the audience suggested that the colonial era in Africa was over, and that local planners are already well-versed in decolonial theories that have failed to provide us with pragmatic planning tools. Such suggestions came from Northern and Southern scholars alike. And yet, as we already know, African onto-epistemologies are often understood as recursively interlinked conditions that are cumulative in nature, and that cannot be analysed as separate philosophical conditions, as tends to be the case in Northern modes of analyses. Furthermore, in many African systems of thought, epistemology is based on experiential, socially-interpreted, relational and intersubjective knowledge, while ontological positions entail an holistic understanding of nature, society and spirituality that prioritizes responsibilities over rights, and the needs of the community over the needs of the individual (Dei, 2000; Oyewumi, 1997; Serequeberhan, 2000; Wamba-dia-Wamba, 1994; Wiredu, 1998). From these findings alone, there, undoubtedly, exists a need to transform the status of academic work by

shifting our focus from Northern-centric understandings to 'seeing' Southern onto-epistemologies as valuable in their own right. And this 'seeing' necessitates more than a mere description of their distinctive features. Above all else, *how we know*--and the ethical values we adopt to justify our planning actions--is unmistakably shaped by the onto-epistemologies we embrace.

By means of this paper, I introduce the idea of 'resistant texts' as a means of learning to 'see' African systems of thought. 'Resistant texts', I argue, are most often found in endogenous systems of knowledge production; and I purposefully make use of the term 'endogenous' (as opposed to 'indigenous') since endogenous evokes the dynamism of knowledge production that allows for authentic specificities while acknowledging that different bodies of knowledge influence each other. Endogenous also serves to "counter the widespread misrepresentation of African knowledges as static, and in need of coloniality's rationalism to come alive" (Nyamnjoh, 2012: 136). I demonstrate how 'resistant texts' resist dominant narratives and theoretical standpoint (including Northern pragmatism) in ways that are unfamiliar, or entirely foreign, to Northern scholarships. As such, they resemble a form of epistemic disobedience that produces an uncomfortable and oft-unacknowledged incompetence. Hence, colleagues' rejection of African knowledge systems and decoloniality at the conference on planning in Africa. 'Resistant texts' are also purposefully de-linked from Northern onto-epistemologies, thereby marking them as distinctly different from established theories and practices. Finally, I suggest that we first need to learn to see 'resistant texts' before attempting to arrive at alternative planning interventions. This seeing, in turn, may enable us to establish new insights--and, as argued by Gautam Bhan (2019), new vocabularies--for Southern scholarships, planning outcomes in situated contexts and anti-colonial interventions.

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Key Words: endogenous knowledges, epistemic disobedience, decoloniality, planning theory

"TEACHING PLANNING THEORY-- SEEING FROM THE SOUTH"
Abstract ID: 524
Abstract within Pre-Organized Session 117

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This paper draws on challenges in teaching a core planning theory course, seeking to decolonize planning knowledge by decentering the Euro-American Western societies in conception of planning thought. Teaching planning theory from the South poses particular challenges, as it is not only a subject matter about a profession (planning) that is conceived as a western colonial project to accomplish colonial governance and domination, but also a subject matter directly involved in the colonial division of intellectual work in academia —namely, global South scholars produce case studies; global North scholars theorize. In teaching planning theory from the South the objective is not to replace one universal with another, one Meta-narrative with another, but to open up the closed globe we know as the cannon and make it open to plural centers. Experimenting with teaching Planning Theory with a Southern focus, has proven challenging and extremely fruitful. In this paper I discuss not only the need for shifting the

cannon in planning; but also how we can try to do so in our classrooms even in teaching of a subject that is conceived at its core by and through the eyes of northern scholars.

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Key Words: decoloniality in planning education, southern urbanism, planning theory

"UNPACKING THE ROLE OF THE STATE IN PLANNING SOUTHERN CITIES, THE CASE OF TEHRAN"
Abstract ID: 527
Individual Paper Submission

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Within urban planning scholarship the predominant view of the urban politics of Middle Eastern cities conceives of the state as authoritarian and omnipotent, fully controlling the political-economic and socio-spatial changes in these cities. This paper uses the case of Tehran, the capital city of Iran, to reflect on this dominant view by interrogating the role of state institutions in relation to charitable revolutionary foundations[1] in shaping Tehran's urban development and planning practices during the last four decades. The paper shows how the polarised political structure of Iran—which combines authoritarian and democratic practices, and where sovereignty is divided between elected executives and unelected ones (Shambayati, 2004) —has directly influenced the planning system and planning practices and, therefore, the pattern of Tehran's urban planning and development. The case of Tehran illustrates the crucial involvement of charitable foundations and large holding companies in urban development projects, independent from the municipality and the central state. Furthermore the paper discusses that, the revolutionary foundations are not unique to Tehran—other Middle Eastern cities are facing a similar phenomenon. Hezbollah[2] and Solidere[3] in Lebanon, or Abdali investment company in Amman, are similar examples of developmental organisations with political and ideological agendas (Fawaz, 2009; Abu-Hamdi, 2017; Khirfan, et. al. 2017).

By interrogating the state power (central and local government) in producing Tehran's urbanism, the findings of this paper raises a debate on unquestioned assumptions in planning theory about the 'modern state', its forms and its function, and its abilities and limitations to govern and shape a 21st century Middle Eastern city. The paper concludes by arguing that the 21st century challenges of urban governance and planning in Tehran and other cities of the region cannot be addressed without further critical research on the role of religious-political groups or any other developmental organisation with ideological orientations in shaping urban spaces and spatial practices.

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[1] Revolutionary institutions (labelled 'charitable foundations') established by Ayatollah Khomeini and his supporters after the 1979 Islamic Revolution. Neither private nor state-owned, these developmental institutions were perhaps best characterised as semi-public organisations, and many of the new foundations took control over the confiscated wealth and property of the royal family or the assets of

well-known aristocrats and industrialists who had fled the country after the revolution. These charitable foundations became responsible for redistributing these assets and property among the poor, the working class, and state employees, promoting social and economic development and spreading revolutionary Islamic ideals across the country. They became very active mainly in the countryside where, at that time, nearly half the population resided. In the decades after the revolution, the foundations continuously evolved and developed, and played an important role in the socio-economic development of Iran. Among others, the Foundation of the Dispossessed (Bonyad Mostazafan), the Housing Foundation (Bonyad-e-Maskan), the Urban Land Organisation (Sazman-e-Zamin Shahri), and Construction Jihad (Jihad Sazandegi) each played a critical role in shaping rural and urban developments and in influencing urban planning practices, as well as urban land and housing policies.

[2] Hezbollah is a political (religious, Islamic) party and an organized military resistance movement that has been operating in Lebanon since 1982, its main motivation being resistance to Israeli occupation of the country (1978–2000) and its repeated incursions since then. For more on the ideology, practices and goals of the party, see Fawaz, M. (2009). Hezbollah as Urban planner? Question to and from Planning Theory.

[3] Solidere s.a.l. is a Lebanese joint-stock company in charge of planning and redeveloping Beirut Central District following the conclusion, in 1990, of the devastating Lebanese Civil War.

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Key Words: modern state, religious-political groups, planning practices, Middle Eastern cities

"THE TEMPORALITIES OF PLANNING INTERVENTIONS"
Abstract ID: 529
Individual Paper Submission

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In this talk, I will discuss the temporalities of planning interventions based on my research in the peripheries of Beirut, Lebanon, a post-conflict city of the Global South. I think about the dominant future that has been imagined and constructed in planning theory, practice and pedagogy, and challenge it by theorizing about urban futures from the Global South. This talk builds on the work I presented in my book, "For the War Yet to Come: Planning Beirut's Frontiers," (2018) where I have examined the underlying socio-political and economic logics that make the phrase "planning lacks planning and order" a common sentiment in Beirut. I show that such a feeling develops when the specters of war are always present, state structures are not clear, and "public projects" are often outsourced and privatized. However, I argue that such conditions are neither exceptional nor restricted to the paradigm of "cities in conflict" like Beirut, Belfast or Medellin. Assuming these cities are exceptional reproduces the same assumptions about the temporalities of planning and development interventions-- that the progress is never-ending and that the future is linear. Assumptions that also inform planning pedagogy.

Planning for the war yet to come argues instead that unequal geographies that are shaped within expected

futures of violence are not only characteristic of cities like Beirut (primarily considered to be 'of the Global South'), but shows how these discourses are equally mobilized in cities across the globe—including cities in the Global North. Furthermore, I will discuss how while these imagined infinitely-linear futures might have marked the futures of the dominant groups (whether socio-economic, racial, and gender normative), this future is not what many marginalized people have been experiencing across the globe. Engaging the temporalities of planning, I contend, is critical to a more inclusive horizon of planning that requires rethinking planning's pasts (as implicated in histories of colonialism and redlining for example), and join calls for the need to rethink planning pedagogy and practice through critical race, postcolonial, queer, and decolonial perspectives.

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Key Words: Temporalities, Post-Conflict, Peripheries, Global South, Urban Planning

CITIES, JUDGES AND INCLUSION IN LATIN AMERICA: RETHINKING PLANNING THEORY IN THE CONTEXT OF INCREASED LEGAL ACTION
Pre-Organized Session 128 - Summary
Session Includes 630, 632, 634, 698, 949

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Since the 1990s, new legal frameworks in several Latin American countries have facilitated the transition from a modernist planning paradigm to one where participation, governance and the "social function of property" are privileged. Two decades later, the results are mixed and vulnerable populations continue to be excluded from everyday planning decisions. In this context, we have seen an increase of judicial and legal action in urban and environmental planning conflicts in Latin America. Lawyers, judges and other legal experts are being called upon urban planning issues by a plethora of actors, from social movements and progressive think tanks to NIMBY groups and elites. In this panel, we seek an interdisciplinary dialogue between scholars in urban planning, critical urban studies and socio-legal studies to discuss what kind of theoretical approaches, conceptual tools and methodological strategies can be helpful to analyze the incidence of legal actors in urban planning. To do so, we seek theoretical and empirical contributions to show the possibilities and limits of using legal actions to make urban planning processes more inclusive in Latin America.

Objectives:

- Enrich urban planning theory by bringing debates from other disciplines
- Understand the possibilities and limits of using legal action and legal expertise to produce more inclusive cities
- Theorize urban planning from the current realities of Latin American cities

THE JUDICIALIZATION OF URBAN PLANNING IN LATIN AMERICA: CITY BUILDING IN THE CONTEXT OF INCREASED LEGAL ACTION IN BOGOTÁ
Abstract ID: 630

Abstract within Pre-Organized Session 128

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During the twentieth century, urban planning in Latin America favoured private interests and excluded the poor from the benefits of urban development (Angotti 2013). In the 1990s, however, many countries in the region adopted decentralization policies and new progressive legal frameworks regarding urban planning, which significantly expanded socio-economic rights and new participatory planning mandates. Brazil's City Statute is one of the region's iconic laws. Colombia also introduced similar precepts in its 1991 Constitution and in Law 388/1997. These efforts were expected to contribute to more equitable cities and to enhanced popular participation.

Two decades later, the results are mixed (Caldeira & Holston, 2015), and while several Latin American mayors have sought local and global recognition by constructing and circulating their cities as international urban "best practices" (Montero 2017), vulnerable populations continue to be excluded from everyday planning decisions and planners are yet to realize their promises of equity and inclusion. New legal frameworks for planning have seemingly fallen short of its promise and a growing number of urban planning projects have been modified, paralyzed or overturned through legal actions and judicial decisions. The rise in legal action against Latin American cities has resulted in legal experts and judges often dictating how social housing, transport corridors, public space, or waste management schemes ought to be implemented by municipal administrations. Mayors and planners complain that the increasing judicialization of urban planning drains local resources and undermines the power of the mayor to set an implement the political agenda they were democratically elected to execute.

While a number of scholars have paid attention to the role of the law in the definition of urban conflicts and public policies in Latin America (e.g. Azuela and Cancino, 2014), no studies to date have focused on the narrower issue of judicial overturning of urban planning. Based on the experience of Bogotá, in this article, we analyze and characterize the scale and scope of legal action in the city and development a typology of recurrent themes and actors involved in municipal legal action and its impact in urban planning decisions. We conclude reflecting on the possibilities and limits of using legal actions to make urban planning processes more inclusive in Latin American cities. Finally, with the goal of contributing to new geographies of theory emerging from the South (Roy 2009), we propose a new research agenda and a new theoretical approach to urban politics to make sense of legal actors in the analysis of urban governance and planning decision-making in Colombian cities.

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Key Words: judicialization of planning, urban conflict, planners and judges, urban politics, Latin American cities

URBAN PLANNING AS 'IDEOLOGY'? POSSIBILITIES AND LIMITS OF BRAZIL'S METROPOLITAN GOVERNANCE AGENDA

Abstract ID: 632
Abstract within Pre-Organized Session 128

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Metropolitan governance has been on the agenda in Brazil since the 1960s. Yet because metropolitan reform was heavily associated with the techno-bureaucratic approach of the military regime, metropolitan management was left off the agenda during the 1980s. During these years, urban social movements worked towards urban reform based on justice and the right to the city at the local level, culminating in the 2001 Statute of the City (Friendly, 2013). In 2015, Brazil approved legislation known as the Statute of the Metropolis to regulate the constitution of regional public policies and metropolitan regions across the country. The Statute of the Metropolis establishes principles for inter-federative governance based on privileging the common interest of the region over the local level. Effectively, the law's approval scaled up the urban reform agenda to the metropolitan level. Indeed, many of the guidelines included in the Statute of the City also now pertain to the metropolitan scale.

There has been considerable research, however, showing that that Brazil's progressive legislation can only be understood as an "ideology" as the master plan is merely an illusion (Villaça, 2005). Moreover, the challenges associated with urban legal reform since the 2000s seem to be replicated at the metropolitan level. Since 2015, municipalities and state governments have reformed their inter-federative governance structures with the cooperation of civil society. However, tensions within the metropolitan governance agenda highlight the conflicts that result from institutional changes at a regional level among planners, politicians, judges, public prosecutors, civil society representatives, and private actors. In some cases, public prosecutors seek to advance the progressive principles of this legislation, while in others, real estate lobbies effectively interfere in the process. In particular, the role of Brazil's Ministério Público (Public Ministry) has received little attention within the context of institutionalizing Brazil's metropolitan governance agenda. The Ministério Público may enter into civil suits to defend the public good, often known as a 'fourth' branch of government given its independence from the three traditional branches of government (Mazzilli, 1989). While public prosecutors play a fundamental role in defending the public interest in Brazil, there has been little research to explore these actors' roles within urban policy (Coslovsky, 2015). Indeed, the role of members of the Ministério Público as actors themselves requires further investigation, especially in the context of metropolitan governance reform.

Drawing on the case of Brazil's metropolitan governance agenda, this paper seeks to understand the limits and tensions of metropolitan urban reform in Brazil, with a particular focus on the role of Brazil's Ministério Público. The paper is based on case studies of three metropolitan regions in Brazil through an analysis of metropolitan laws and key informant interviews. The results shed light on the implementation of shared responsibilities in metropolitan regions, the role of a range of actors in this process including the importance of legal actors for planning theory, and ultimately, how to rethink the possibilities and limits of progressive national legislation.

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Key Words: metropolitan governance, legal actors, right to the city

JUDGES, LEGAL CATEGORIES AND PRODUCTIVITY OF URBAN-ENVIRONMENTAL CONFLICTS: THE CASE OF MATANZA-RIACHUELO RIVER BASIN, ARGENTINA

Abstract ID: 634
Abstract within Pre-Organized Session 128

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There is a growing interest in the role of judges in the social productivity of conflicts. However, the role of instruments used by judges to achieve some objectives has not been studied neither how this intermediation can produce consequences.

In this sense, the current doctoral research focuses on the relationship between an environmental judicialized conflict, legal categories, and some effects of " conflict productivity" (mainly territorial and juridical ones). This main objective is analyzed in an instrumental case study: the judicial implementation of "riverbank clean-up" objective in Matanza Riachuelo River Basin in the judicial case "Mendoza" in Argentina (2009-2017).

"Mendoza" is the most prominent decision of the Argentinian Supreme Court of Justice (ASCJ) on environmental conflicts. The Matanza-Riachuelo river basin runs through the Autonomous City of Buenos Aires and the Province of Buenos Aires, an area of approximately 2,240 km2: the most urbanized and with the highest population density in the country.

In 2008 ASCJ determined the government's responsibility for the prevention and reparation of environmental damages in the watershed. The decision's enforcement, leaded by Judge Armella, included the content of a "clean-up riverside" plan for the basin, by proposing an innovative use for the Civil Code mechanism "camino de sirga" (towpath). This is a property rights restriction applied besides waterways, used in the Mendoza Case as means to remove obstacles (people, houses, industries), clean, and to (re) create public space in the occupied Riachuelo riverside.

The research is designed as a unique instrumental case study. In spite of its atypicality, the case is illustrative of aspects that are not visible in other cases, as the spatial conceptions of judges, the spatial connotation of legal categories and the strategic used of it to legitimate proceedings related to (i) the implementation of an urban and environmental project, (ii) regulations of restrictions on riversides and river transportation and (iii) processes of relocation of informal urban settlements.

The theoretical framework combines theories from *social productivity of conflict* (Azuela y Cancino, 2014), and *the effects of judicial activism* (Rodríguez y Rodríguez Garavito, 2010). The first one is based in sociology of conflicts - that considers conflicts as part of society with different functions - and inquires in three dimensions of this productivity (territorial, juridical, political). The second one, study the effects of judicial activism in different aspects and phases of judicial decisions. Likewise, there are some concepts of sociology of law, legal geography, legal anthropology, and urban planning that are used.

The main argument is that judges in charge of the implementation of "river bank clean up" objective and "camino de sirga" legal category , intermediate in the juridical and territorial productivity of conflict in the Riachuelo Matanza river banks, particulary in: 1) new understands given to legal categories,2) the resignification of the conflict (conflict that turn from an environmental to an urban issue); 2) the definition of the urban riverside space (juridical qualification and classification of space, and the production of a new urban space fostered by judicial decisions), and 3) housing policy design and implementation.

These intermediations are not exclusive but relevant and are mainly explained by two elements. The first one refers to the creative style of one of the judges who actives the "camino de sirga" mechanism to achieve the objective decided by the ASCJ. In that election this judge assigns new purposes to the institution which is transformed functionally (Renner,1949), and develops the role of urban policy-maker. The second element is the spatial connotation of the civil law institution as it is "anchored" in a delimited

territory and made contact with different actors with effects in urban planning and housing policy.

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Key Words: Conflict productivity, environmental and urban conflicts, judges

BEYOND PARTICIPATION AND JUDICIALIZATION: LEGAL INNOVATIONS AS EXPERIMENTS OF INCLUSION IN BOGOTÁ'S URBAN RENEWAL PROJECTS
Abstract ID: 698
Abstract within Pre-Organized Session 128

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In Colombia, from the issuance of Law 9/1989, and later with Law 388/1997, new planning instruments and socio-economic rights were created to promote the participation and protection of residents in urban renewal projects (Maldonado Copello, 2012). These laws introduced important legal, planning and policy tools to mitigate the displacement caused by gentrification and urban transformation processes. However, both the real estate sector (interested in land rents) and the public sector (with a public space or local economic development discourse) have often ignored deliberately this type of protective legal regulations. In other words, despite the introduction of new progressive legal frameworks, urban renewal in Colombia, as in many Latin American countries, has been practiced as a "bulldozer operation," with little citizen participation and often displacing vulnerable populations (Janoschka, Sequera, & Salinas, 2014). The recent expansion of socio-economic rights and access to justice mechanisms in Colombia have turned Colombian cities into urban planning laboratories where community leaders, progressive planners and urban lawyers are mobilizing progressive legislation and experimenting with planning instruments and land policy mechanisms to make urban planning more inclusive. An emerging literature on the "judicialization of politics" has documented the rise in judicial intervention over urban and environmental issues in Latin America (Azuela & Aguilar, 2014) and other countries of the Global South (Bhan, 2009). While most of these studies have focused on courtrooms and judge rulings, less is known about the increasing role of other kind of non-judiciary mechanisms of control and oversight. For instance, in Colombia there are contralorías who oversee the correct use of public finances and use to inquiry any abnormal use of public estate and procuradurías, a censor institution who prevent elected officials from any deviation of power or neglecting. There are also civil organizations called veedurías who oversee the correct performance of the state and of planning projects. In recent years, several urban renewal planning in Bogotá have been changed due to the action of these non-judiciary oversight mechanisms, which some of our interviewees call "-IAS" (as per their termination of their names in Spanish). Together, the -IAS constitute a salient legal and administrative oversight mechanisms with important implications for urban planning. By analyzing several recent cases of legal innovation in urban renewal projects in Bogotá, the paper shows that the existence of inclusive legal frameworks is not enough to promote inclusive outcomes. Instead, we show how the warnings or the notices of the opening of a lawsuit of oversight institutions – the IAS - can act as a source of inclusion in urban planning. We analyze how community organizations, neighbors' alliances, lawyers and planners used these oversight mechanisms in innovative ways to force the actual application of the "public function of urban planning" and the "social function of property" stated in Colombia's Law 388/1997. As urban renewal projects are increasingly carried out in Latin America through public-private partnerships, this paper shows the importance to go beyond the "participation" of the community, understood as a bureaucratic and passive process, but also beyond endless "judicialization" processes that increase the uncertainty of planners, developers and residents.

Instead, the paper highlights how experimenting with non-judiciary oversight mechanisms can be a useful way to innovate and materialize inclusion in urban planning. In doing so, this paper argues that oversight institutions should be better conceptualized in planning theory and in emerging discussions about "the judicialization of politics."

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Key Words: judicialization, urban planning, inclusion, urban renewal, Bogota

LEGAL EMPOWERMENT IN INFORMAL SETTLEMENTS: LESSONS ON USING THE LAW TO OVERCOME URBAN EXCLUSION AND POVERTY IN THE GLOBAL SOUTH
Abstract ID: 949
Abstract within Pre-Organized Session 128

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In the Global South, informal settlements (slums, favelas) are a persistent if not growing development challenge, as countries continue to face population growth and rapid urbanization. As a recent United Nations report notes, "informal settlements affirm humanity in the most inhumane circumstances" while "[t]hose who resist forced eviction and claim their right to housing must be treated as human rights defenders" (UN/A/73/310).

From a legal perspective, the challenges and solutions presented about informal settlements are mostly framed in terms of a need to overcome informality in its different forms. More limited analysis exists however on the role of informal settlement communities in bridging the gaps between the formal and informal spheres. What strategies can residents employ to ensure that legal protections respond to their needs and realities? This paper proposes to capture a series of recent, promising experiences in the Global South, in deploying legal empowerment approaches by and on behalf of informal settlement dwellers, to obtain a more dignified status and living conditions in the city.

Key elements to be examined include: (1) the role of legal frameworks in different countries in driving exclusion or enabling legal empowerment efforts; (2) the relationship between intermediary spaces, residents and public institutions ; (3) the use of courts and strategic litigation in spurring citizen-led legal advocacy and reforms; (4) how a range of strategies have been deployed in combination – from the purely political, technical, to legal – and acted to complement or clash with another. A unifying thread of the analysis is the role of legal empowerment approaches in 'leveling the playing field' and mediating power dynamics that often exclude settlement populations, whether from the vantage point of informality, poor participation, or government violations of, or neglect in upholding, citizens' rights .

The picture that emerges, in the final analysis, is one that shows law as a potential force for social change and development, providing an anchoring and normative force, but also reflecting its instrumental limits, if not combined with a larger set of socio-political strategies. Discussions around the right to the city help to crystallize the interplay between the legal and socio-political spheres.

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Key Words: legal empowerment, social and economic rights, informality, litigation, community participation

TRACK 13 – ROUNDTABLES

THE TIMES, PLACES, AND SPACES OF DECOLONIAL PLANNING
Abstract ID: 298
Roundtable

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DORRIES, Heather [University of Toronto] heather.dorries@utoronto.ca, participant
HARJO, Laura [University of New Mexico] harjo@unm.edu, moderator

This roundtable discussion will bring together Indigenous planning scholars to discuss how Indigenous peoples are practicing and theorizing decolonization in ways that challenge and have the potential to transform normative colonial planning frameworks. While planning scholars have sought to 'come to grips' with how planning is implicated in colonialism, the literature often focuses on state-led and -sanctioned practices of recognition and reconciliation. Such interventions often obscure and often reinforce the asymmetries of power and violence that characterize contemporary relations between Indigenous peoples and the state, most especially concerning the dispossession of Indigenous peoples' lands and political sovereignty. Moreover, such interventions run the risk of framing Indigenous struggles over territory as cultural struggles, and can rely on the recognition of Indigenous rights by the state, reinforcing rather than undermining colonial relationships. As an alternative to practices rooted in a politics of recognition, Indigenous scholars, activists, artists and others are engaging in a politics and practice of resurgence. Michi Saagiig Nishnaabeg scholar Leanne Betasamosake Simpson (2017) has powerfully theorized resurgence to be a 'radical practice' through which Indigenous peoples regenerate our land tenure and the foundations and traditions of our cultures "on our own terms, without the sanction, permission, or engagement of the state" (Simpson 2011, 17). Thus, resurgence marks a critical shift in how Indigenous people are conceptualizing and enacting decolonization.

This roundtable discussion will focus on how Indigenous peoples undertake resurgence in specific contexts, each scholar will discuss how decolonial and anti-colonial planning challenges received notions concerning the relationality, temporality, and materiality of planning, drawing on their own work. Laura Harjo's work engages Mvskoke emergence geographies and is encapsulated in her most recent book Spiral to the Stars: Mvskoke Tools of Futurity (2019). Heather Dorries' research in Canada aims to articulate a theory of "Indigenist urbanism" that positions Indigenous peoples generators of decolonial

planning theory, and which sets Indigenous flourishing as its highest goal. This work rejects recognition as a means of securing Indigenous rights, and considers how refusal might provide a foundation for decolonial practices that do not rely on the state, but instead contribute to Indigenous resurgence. Lastly, Jimmy Taitano Camacho illustrates how Chamorus have employed and transformed a colonial property institution to create places that foster land use practices predicated on yo' åmte (a deeper kind of healing). In doing so, they provide a critical analysis of colonialism in particular contexts and how structures and institutions of colonialism are being resisted and transcended by Indigenous peoples there. This raises important questions, to be addressed in this roundtable:

- How are Indigenous peoples transforming normative planning theories and practices through the practice of resurgence?
- How are Indigenous peoples navigating political and legal structures to regenerate the foundations and traditions of our cultures?
- How can these transformations be brought to bear on planning scholarship?

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Key Words: Decolonization, Indigenous Planning

FRAGMENTATION AND COHESION: THINKING ABOUT IDEOLOGY AND PLANNING
Abstract ID: 322
Roundtable

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INCH, Andy [University of Sheffield] a.inch@sheffield.ac.uk, participant
LAKE, Robert [Rutgers, The State University of New Jersey] rlake@rutgers.edu, participant
SHEPHERD, Edward [University of Reading] edward.shepherd@reading.ac.uk, organizer, moderator

We appear to be living in an era of crisis of political ideas which is challenging various political settlements which have secured relative stability over recent decades. Whether it is the rise of populism in Europe and the Americas, the possible fragmentation of the European Union, political unrest in Hong Kong or the battle for the soul of the United States of America it seems that all around us there is evidence of intensified political rupture and discontent.

Dominant political ideas therefore seem to be losing their grip and the post-political order of things is giving way to a period of marked ideological confusion and struggle. If the analysis of ideologies is concerned with carefully revealing patterns of ideological bias and preference and examining their effects, the contemporary historical moment demands a renewed commitment to the study of ideology in all its theoretical and practical complexity.

Given the highly political nature of planning it is therefore essential that we develop tools and techniques to think through the relationship between patterns of ideological bias and planning practice whether it be at the level of national policy, local implementation or spaces in between. Although far from a dominant

concept in planning theory, ideology has made repeated appearances throughout the history of the discipline, evoked in a variety of terms to address foundational questions for the field, including:

- problems of incoherence and fragmentation in the contested meanings of planning and the status of the knowledges underpinning its practice;
- the need for planning to establish its own rationale and meaning and the challenges to achieving this, whether due to inherent instability of meaning, vested interests of professionals or the structural contradictions inherent to planning's position in capitalist societies;
- the psycho-social ambiguity of concepts central to planning which can serve to legitimise and secure investment in the dominant order;
- the need to engage in pluralist debate through open, rational communication geared towards overcoming distortions and achieving agreement;
- the apparent post-political domination of neoliberalism over planning thought and practice, including through the 'totalitarianism' of consensus;
- the effects of political ideologies on change in planning ideas and practices;
- the variation in cultural expressions of planning practice and the politics and power-relations involved in their transformations. These treatments of ideology in the planning literature adopt various normative and methodological stances but are united by a common acceptance that ideas, concepts, the ideologies they comprise and the discourses through which they find expression matter, and that they matter because they have the power to shape the terms by which political and social reality is understood, articulated and (re)shaped through planning practice.\

This roundtable starts from the premise that the significant potential of the concept of ideology for analysing planning can only be realised if its role is brought to the fore of analysis and that this is an essential move now more than ever. The discussion will seek to contribute to established academic debates by exploring some of the ways ideology can be explicitly deployed as a tool in the analysis of planning problems. It is hoped that the participants will explore how we might clarify our thinking regarding the relationship between ideology and planning and think through some of the ways in which this relationship is expressed. The roundtable is therefore part of a project to bring the concept of ideology out from the shadows and into the open so that we may examine its value and what it can tell us about the politics of contemporary planning.

Note: This abstract draws from an Editorial for a recent special issue of Planning Theory journal (see bibliographical citations).

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Key Words: ideology, crisis, discourse, power, politics

ACSP-AESOP JOINT ROUNDTABLE: THEORISING THE FUTURE OF THE 'PROFESSIONAL' PLANNER
Abstract ID: 653
Roundtable

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MAIDMENT, Christopher [University of Reading] c.s.maidment@henley.reading.ac.uk, participant
PARKER, Gavin [University of Reading] g.parker@henley.reading.ac.uk, participant

This is a joint ACSP-AESOP roundtable which will follow on from a similar session to be presented at the Association of European Schools of Planning (AESOP) 2020 Annual Congress in Bristol.

The aim of this session is to bring together perspectives from both sides of the Atlantic that explicitly focus on the future role of the planner. The session will provide an interactive opportunity for the participants and the audience to explore how emerging practical and theoretical insights frame the normative role of the planner.

As an academic discipline, planning is thriving, energised by the exploration of new theoretical insights, drawing on, for example, complexity and the post-political, and the urgency of addressing social and environmental crises. Elsewhere, scholarship on the relationship between communities and planning continues to develop, as does work on what planners do in their day-to-day practice.

However, the identity of the profession is at a crossroads. Especially in a neoliberal political paradigm, there has been a move away from thinking of planning as a state led activity, characterised by technocratic and communicative methods. In reality, much of planning is done in conjunction with, or in opposition to the state by private interests. In such a worldview, the role of the planner is much broader and more varied than the conventional understanding of planning as regulation. Planners shop for venues, set agendas, frame issues, participate strategically, influence collective action, champion solutions and lobby for particular regulatory regimes and specific investments. Such roles of planners are underexplored and under-theorised in the literature.

In particular, the roundtable will address the following questions:

- What normative role should the planner play in the post-political context?
- What is the 'expertise' of the planner?
- Should the planner claim more of a leadership role?
- What can we learn from role models in planning about the profession's normative future?
- Ultimately, the session aims to contribute to the reinvigoration of debates around the role of the planner in planning theory. Contributors to this special session will offer a range of perspectives on the future role of the planner within a rapidly changing environmental, social and economic context, whether that role is normative or non-existent.

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Key Words: Professionalism, The Planner, Theorising, Leadership

GENERATING PRACTITIONER/SCHOLARS COLLABORATIONS FOR CRITICAL REFLECTION ON PRACTICE
Abstract ID: 677
Roundtable

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SANYAL, Bish [Massachusetts Institute of Technology] sanyal@mit.edu, participant
FISCHLER, Raphael [McGill University] raphael.fischler@umontreal.ca, participant

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The theme of the session is that critical reflection on practical judgments holds needed insights for theorizing on and improving practice. In reviewing Schön's work on reflective practice, Fischler explains that ". . . reflective practice has become a very familiar idea among planning scholars and practitioners, but . . . the concept is at once popular and marginal" (Fischler 2012, 313). The conference theme of racial equity and justice emphasizes the need for reflective planners who move out of standardized models of practice into taking responsibility for methods and strategies.

This session is intended to advance the development of critical reflective practice in collaborations between planning scholars and practitioners. To that end, the roundtable will bring together planning academics who have worked with Schön, written about reflective practice, practiced planning themselves and/or written about their practice. Together, they will (i) discuss the state of critical practice reflection in planning, (ii) identify useful frameworks for reflection-on-action and reflection-in-action, and (iii) share their experience and perspectives on reflecting-on-action for scholarship on planning practice.

The session's approach builds on a recent book project, Reflective Planning Practice: Theory, Cases, and Methods (Willson, forthcoming Fall 2020) in which scholars, scholar/practitioners, and practitioners wrote reflective case studies using a common reflection framework. The benefits to critical reflective practice are substantial, but the are many barriers and impediments to honest reflection.

Roundtable leaders include the book's author, a contributing case-writer, and two scholars who offer an independent view. After roundtable members offer short summaries of viewpoints, attendees will be invited to share their experiences of critical reflection on practice. The conversation will seek to identify initiatives that enhance critical reflection in planning theory and practice.

The specific outcomes of the roundtable depend on the contributions of participants, but the broad outcomes sought are elevating the role of scholar/practitioner case studies in theory and practice, supporting critical practice reflection in scholarship, and developing programs and collaborations to engage practitioners and scholars in the reflection project.

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Key Words: reflection, reflexivity, theory, practice, cases

PUBLISHING BOOKS IN URBAN PLANNING: APPROACHES, PROCESSES, AND SIGNIFICANCE
Abstract ID: 722
Roundtable

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WENDEL, Delia [Massachusetts Institute of Technology] wendel@mit.edu, participant
GOH, Kian [University of California Los Angeles] kiangoh@ucla.edu, participant

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KNAPP, Courtney [Pratt Institute] cknapp@pratt.edu, participant

This roundtable aims to bring together early career planning scholars who have recently published full-length monographs on issues related to urban planning, along with scholars who are in the process of finishing their books. The aim is to have an open discussion about the significance of addressing planning issues in a book format. Authors will talk about their experiences doing research and writing it up in a monograph-length format, and will collectively reflect on the process of book publishing from contacting editors to book production, distribution and promotion. The roundtable hopes to engage scholars and PhD students who are interested in publishing books as a form of knowledge production in urban studies and planning.

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Key Words: Knowledge Production and Publication

OF PARTICULARS AND UNIVERSALS: REFLECTIONS ON THE ROLE OF ABSTRACTION AND GENERALISATION IN PLANNING THEORY AND PRACTICE
Abstract ID: 925
Roundtable

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The value of theory for practice has long been questioned in our field. Even as planning was being defined as the application of knowledge to action (Friedmann, 1987), theory and practice were fragmenting deeper into separate, often mutually suspicious silos. Increasingly narrower sub-disciplinary specializations have also evolved into new fields of inquiry, visible in the multiple tracks that now constitute conferences like ACSP. Community development broke away from transportation planning. Communicative theories divorced from Marxist theories of planning. And so on. These developments have deepened specialist debates but present challenges for the production of the holistic, integrated responses required by major 21st century societal challenges (Campbell, 2014).

Over recent decades fragmentation has also been complicated by an increasingly important politics of knowledge production as various challenges to dominant assumptions about who produces knowledge and how that affects its claims to universality have arisen. Feminist, queer, post-colonial, and post-empiricist approaches, among others, have raised vital questions about whose theories apply when and where. In urban scholarship there have been pronounced moves to challenge the places where our theories about the urban are produced and to promote more situated and pluralist understandings (Robinson, 2006). Such debates fit with long-standing concerns to parochialise rational-technical knowledge in planning, to unsettle prevailing rationalities of planning (Barry et al, 2018), and to develop understanding

of diverse planning cultures (Sanyal, 2005).

Central to such debates are concerns about processes of generalisation and abstraction, an unease at the ways in which universalist claims can be made on the basis of particular experiences and an understanding of the need to produce knowledge that is sensitive to context and responds to ethical and political imperatives to recognise the diverse knowledges involved in producing urban change. The call to the particular, however, may risk reproducing forms of parochialism that deny the application of knowledge built in one place to action in another, thereby limiting the power of knowledge and its capacity to shape the transformations societies need in the face of planetary crises.

Both the worlds of academia and practice rely on some forms of abstracted and generalized knowledges and the perhaps unfashionable promise that expertise can produce better knowledge that in turn makes a better world. Navigating between the Scylla of generalization and the Charybdis of particularization therefore constitutes a particularly marked challenge for planning theory, where the task of theory cannot solely be to explain change or produce knowledge for its own sake but must also explore the normative bases of and possibilities for action (Forester, 2015). In this context, revisiting the forms of abstraction and the nature of our practices of generalisation become crucial to developing debates within the field and further understanding the interface between knowledge and action. This roundtable, organised in conjunction with the journal Planning Theory and Practice and reflecting its core mission as an academic journal, thus seeks to stimulate discussion about the kinds of theory we need in planning, the role of abstraction and generalisation in its production and what this means for the politics and ethics of knowledge production.

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Key Words: Abstraction, Generalisation, Knowledge production, theory-practice interface

TRACK 13 – INDIVIDUAL ABSTRACTS

SUSTAINABILITY SCIENCE AND PLANNING: A CRUCIAL COLLABORATION?
Abstract ID: 58
Individual Paper Submission

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This paper characterizes the nature of the relationship between planning and science both conceptually and functionally. I will address several questions: What is the relationship between science and society and science and planning?   In what ways are planning and sustainability science theoretically and practically related? Is a collaborative association between planning and sustainability science possible and what are the possible impediments to such an association? Finally, what are the implications of such an association for planning practice?

To answer these questions, I first briefly explore science and how it has evolved as a social force in the

United States. This is followed by a discussion of the relationship between science and planning in terms of how planning is practiced and how cities and regions function. I then discuss the emerging meta-discipline of sustainability science as both a concept and a possible framework for integrating science and planning. Based on these analyses, I close with a proposal for fuller integration of sustainability science and the practice of planning that can contribute to a more evidence-based and collaborative approach to sustainable development.

My proposed elements of fuller integration include the establishment of diverse teams of scientists to work with local planning offices for two purposes: (1) To formalize scientific input into planning and the planning process and (2) To build understanding of communities as complex systems.

In addition, I propose how planners can maximize their own professional contribution to such integration in terms of a re-orientation of nine key roles: informational "gatekeepers;" analysts; expert policy participants; city system experts; public participation experts; opinion shapers; inter-governmental liaisons; agents of change; and innovation advocates.

In this period of political polarization, planning is caught in the middle of competing claims of legitimacy in terms of the aims and direction of public policy. By re-affirming its historically solid roots in science and coordinating its values and methods with those of the sustainability science meta-discipline, planning can strengthen its position of leadership in the ongoing quest for sustainable development.

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Key Words: sustainability, theory, practice, science, role

BETWEEN VIRTUE AND PROFESSION: URBAN PLANNING AND THE PUBLIC PARTICIPATION INDUSTRY
Abstract ID: 141
Individual Paper Submission

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Public participation is central to public sector governance in Western democracies. This is especially true in urban planning, where it is a mechanism for ensuring that citizens' knowledge and experience of cities are reflected in the plans that guide urban development. Yet, public participation is being transformed into a detached, professionalized practice that is sub-contracted to specialized firms, with local government staff having less responsibility over its design and management. While these changes may elevate the overall quality and rigour of the participatory process, they also pose several risks. Assigning this governance role to individuals that have limited investment in the substantive issues at stake may undermine the formation of trusted, locally specific relationships with citizens. It may also reduce public participation to a technical, context-independent exercise that undermines citizens' belief in the

usefulness of their engagement.

Our paper uses the emerging literature on the rise of the public participation industry (Bherer, Gauthier & Simard, 2017; Henriks & Carson, 2008; Lee 2014) to pose much-needed critical questions of this emerging professionalized form of public participation: how is it being performed, who and what does it benefit, what is lost, and how is it intersecting with longstanding practices of participatory planning? We contrast ideas of public participation as a profession with those that frame it as a virtue that is held by its practitioners, drawing upon McClymont's (2018) writing on virtue ethics. She calls for a highly situated approach to the ethical judgements that requires practitioners to acquire their public participation skills through ongoing interaction with the very communities that they intend to work with – a vision of participatory planning that sits uncomfortably alongside the growing prominence of the public participation industry. Our paper uses this tension between virtue and profession to broaden the theory of participatory planning and to highlight the political and practical implications of the emerging trend towards the professionalization of its practitioners.

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Key Words: public participation, professionalization, ethics

THREE HEURISTICS FOR STUDYING PLANNING EXPERTISE
Abstract ID: 145
Individual Paper Submission

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Based on the author's dissertation research experience that examined economic expertise in development planning, this paper argues that three common assumptions in planning theory and scholarship limit our understanding of planning experts and presents three rules of thumb, or heuristics, from science studies as a remedy. The first common assumption is that experts' success or failure rests on the strength or weakness of their rationality rather than their political efforts. Too often, planning theorists, like social reformers in the progressive era, made conclusions about expert influence based on the properties of intellectual rationality alone (Finegold, 1995). The second common assumption is that conflicting rationalities largely exist between experts' intellectual rationality and non-state actors' practical rationality (Corburn, 2007; Goulet, 1986; Scott, 1998; Watson, 2003). Many planning theorists assume that state institutions have no internal conflicts or contradictions (Angotti & Marcuse, 2011). The third common assumption in planning theory, with the notable exception of the Advocacy School, is that planning methods are ostensibly technical instruments of rationality rather than political interventions.

This paper presents a scholarly approach that reconceptualizes these assumptions in planning theory and scholarship using heuristics derived from science studies. Concepts such as the principle of symmetry, trials of strength, and black boxing can help us rethink expert rationality, power, and methods, respectively. A science studies approach is advantageous for several reasons. First, applying science studies, usually reserved for studying scientists, engineers, or other knowledge workers in laboratories, to planning organizations can help us understand experts' unique political strategies. Second, science studies treats knowledge production as political work that faces resistance and must be overcome (Latour, 1988). Finally, science studies suggests that expert methods black-box ideas and discourse (MacKenzie,

2005).

The first heuristic—"think symmetrically"—recommends that planning scholars treat non-experts and experts symmetrically: interests and politics define and motivate both groups' work (Bloor, 1981). Instead of speaking truth to power, experts' work is reframed as constructing rationality as power. Rationality becomes a local accomplishment in particular contexts rather than a property that people or organizations do or do not possess (Cabantous et al., 2010). The second heuristic—"look for trials of strength"—asks planning scholars to treat planning organizations as arenas of conflicting rationalities. Planning scholarship often treats the state as monolithic with a unitary logic and neglects conflicts within the state. However, experts, like scientists, have to conduct their work and defend it from competing experts with alternative rationalities, or withstand what Bruno Latour calls "trials of strength" (Latour, 1988). The third heuristic—"unpack experts' methods"—asks planning scholars to "get inside" methods. Methods become black-boxed when debates over the procedures of (social) scientific practice appear settled and their internal workings are overlooked. Opening the black box reveals methods' political values and can foreshadow their possible political effects (Alonso & Starr, 1989; Dorling & Simpson, 1999; Sinclair, 2008).

These heuristics for studying planning expertise have implications for planning practice—they keep us from falling into the post-modern abyss (Beauregard, 1991). Postmodernism suspended us between the decaying validity of the modernist project and convincing, yet discomforting skepticism of the modern state and its experts (Beauregard, 1991; Putnam, 1992). However, if we think symmetrically and look for trials of strength, we can conceive of planning organizations as plural and diverse rather than singular and universal. Dualities between rationality and irrationality are rejected because power drives rationality and no form of expertise is structurally given or inevitable. Competing experts can enter the organizational arena to make a case for their alternative rationalities. In doing so, they engage in the kind of responsible reconstruction that Hilary Putnam said was necessary to avoid the dangers of deconstruction (Putnam, 1992: 132).

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Key Words: Heuristics, Expertise, Rationality, Science Studies, Postmodernism

THE AMBIVALENT CHARACTER OF SPATIAL PLANNING SYSTEMS: A DIFFERENTIATED STATE ACCOUNT
Abstract ID: 193
Individual Paper Submission

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Discourses play a key role in determining the form of the state and in promoting state action. Until recently, planning discourses have generally portrayed spatial planning systems as vehicles to attain legally-established, generic policy objectives such as institutional integration, territorial balance, and modernization. This conventional perspective emerges from an understanding of spatial planning systems

as fixed, hierarchical and structured policy levels and institutions facilitated by administrative, technical and juridical tools and processes (Newman and Thornley, 1996; Knapp, Nedović-Budić and Carbonell, 2015). Emphasizing their technical operation and instrumental analyses, this formalistic interpretation of spatial planning systems neither accounts for historical structural inequalities nor it considers the socio-political specificities and meaning that result from the 'dialectical interplay between agency and institutions' (Servillo and van den Broeck 2012).

The starting point of the paper is the premise that this orthodox view of spatial planning systems relies on an overly broad assumption of the state conceived as 'neutral'. Moving beyond this impartial imagination, the paper heeds to a 'differentiated' perspective that depicts the state as a set of arenas lacking coherence, where contexts determine particular trajectories of state actions as well as the power relations that exert influence on them. From a post-structuralist perspective, the state is a 'differentiated set of institutions, agencies and discourses' conceived as built historically through political (relational) processes whose outcomes remain open (Kantola, 2006). Placing emphasis on state practices and discourses, a differentiated account unfolds from the premise that states are formed on the basis of opportunities for action 'between and through' the states' contextual institutions and relations. The differentiated state is thereby attuned with Jessop's (2008) strategic relational approach insofar as both critically scrutinize the formalistic character of state institutions while advocating the need to develop alternative understandings of how states are ultimately conformed.

Based on these critical state approaches, the paper sets out to explore how planning discourses contribute to shape the form of spatial planning systems. The paper uses two 'extreme' Latin American contexts to demonstrate how planning discourses have a constitutive function insofar as they mobilize government agendas and reinforce or modify the form of the state in accordance with selective intervention strategies, e.g. by introducing new administrative levels or suppressing others, creating new jurisdictions or merging others, and/or expanding or reducing the scope of instruments. The paper further shows how state spatial strategies conceal inherent state strategic selectivities for socio-economic intervention and how their outcomes oftentimes diverge from the actual policy agendas they were allegedly set to pursue. The paper concludes that far from perceiving spatial planning systems as formal and one-sided (vertical, ordered, linear), planning research should turn more attention towards acknowledging and examining their strategic side (immanently horizontal and multidirectional), which results from the inherently dialectical and discursive relationship that ultimately binds two sides of state action.

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Key Words: spatial planning systems, discourses, differentiated state, state spatial strategies, strategic-relational approach

WICKED PROBLEMS, FOOLISH DECISIONS: PROMOTING SUSTAINABILITY THROUGH CROSS-SCALE URBAN GOVERNANCE IN A COMPLEX WORLD
Abstract ID: 196
Individual Paper Submission

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Why do wicked problems too often give birth to bad policy choices? Put another way, why do people --
in the face of complex social challenges -- make misdiagnoses, ineffective decisions or no decisions at
all? Typical answers point to a plethora of suspects: impatience, myopia, political stalemate, narrow-
mindedness, fear and risk aversion, hubris, greed, rational self-interest, ignorance, reliance on emotionally
appealing but misleading anecdotal stories, misuse of evidence and misunderstanding of uncertainty.

In this paper we build on previous research (Zellner & Campbell, 2020, 2015) to demonstrate how
complexity thinking can engage urban challenges at three levels: (1) to *describe* "complexity" as a
symptom of urban systems; (2) to *analyze* the dynamics of complex urban systems; and ultimately (3) to
intervene through appropriate planning strategies that account for complexity. We employ this thinking
to engage sustainability at two scales: the neighborhood (specifically, eco-gentrification), and the
megaregion (regional externalities and tradeoffs).   These scales involve different actors, conflicts and
specializations within planning. Yet both represent new, hybrid patterns of urbanization that produce
intractable problems of environmental unsustainability and social-spatial inequality -- two core planning
priorities that too often collide. Both situations also generate novel social policy challenges, calling for
interdepartmental and/or intergovernmental cooperation, that conventional planning thinking and
governance tools are ill-equipped to address.

Eco-gentrification is an unexpected portmanteau of two once-separate planning concerns: threats to
ecological sustainability arising from material-intensive urban lifestyles, and neighborhood displacement
as both symptom and exacerbator of inequality. The unlikely alliance of green development and
gentrification, amidst growing income inequality, is producing affluent, exclusionary "green islands"of
high livability, surrounded by gray hardscapes of poverty, heat islands, unhealthy environments and poor
services. Eco-gentrification exposes deep-seated tensions between the search for environmental quality,
housing equality, and dynamic housing markets. This confluence of divergent forces generates novel
forms of urbanization -- a hallmark of emergent complex systems. And characteristic of wicked problems,
there is no consensus about the nature of the problem (housing, environmental, income?), the jurisdiction,
or solutions.

The megaregion represents a tantalizing new scale of urban development and spatial analysis. Yet our
administrative structure and political culture have not kept up with the megaregion's conceptual
appeal. We lack the ability to mitigate externalities, counter the negative effects of agglomeration, and
address tradeoffs (e.g., growth at the expense of air pollution). The megaregion presents a paradox of
both promise and troubles: in theory, the scale better encompasses the holistic scale of both environmental
(watersheds, air basins, habitats) and social (city-suburb-rural, interracial) systems. Yet the megaregion
also privileges consolidated economic interests over either ecological or social justice interests.

We conclude with implications for governance. Of the three stages for planners to engage complexity
(acknowledgment, analysis, intervention), governance is the most challenging step. Effective planning
responses have several prerequisites: (A) shared problem definition and legitimacy for intervention; (B)
knowledge of cause-effect and consequences; (C) identification of key parties and interests; (D) ability to
imagine and evaluate multiple interventions; (E) strategic knowledge of the scope and limits of public
power and authority. Yet in wicked, complex problems, we have instead: (a) little consensus about either
the core problem or solution pathways; (b) obscured and convoluted cause-effect relationships due to
feedback loops and interactions; (c) diverse and opaque interest groups and alliances; (d) inability to
identify and evaluate a comprehensive set of possible interventions; (e) uncertainty about what planning
interventions are legally allowed and politically plausible. Overcoming these obstacles is a formidable
task, accomplished neither through a rhetorical sleight-of-hand nor the panacea of new data technologies.
Using our two examples, we explore how planners and stakeholders can address these complex
challenges.

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Key Words: complex systems, wicked problems, planning theory, eco-gentrification, megaregions

THE ROLE OF ORGANISATIONAL 'STRUCTURES' IN SHAPING THE INDIVIDUAL 'AGENCY' OF PROFESSIONAL PLANNERS
Abstract ID: 271
Individual Paper Submission

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Overall Aim & Scope

This paper draws on ongoing research that aims to explore the extent to which supportive macro, meso and/or micro-scale organisational arrangements help generate a culture which supports 'effective planning'. The starting hypothesis is that how planning organisations are structured has a significant impact on the ability of the professional planner to undertake what they perceive to be 'effective' planning work, but that there has been little research that addresses this issue.

Significant bodies of work have continued to develop that explore the role of institutional culture at the macro-scale (e.g. Valler & Phelps, 2018; Knieling and Othengrafen, 2015) and individual agency in day-to-day planning practice at the micro-scale (e.g. Murtagh, Odeleye & Maidment; 2019; Inch, 2010), shedding important light on what planners do, and how this is culturally shaped. In contrast, there has been little focus on how the agency of planners might be influenced by the practices and practical arrangements associated with the particular forms and structures of planning organisations; both macro-scale arrangements such as geographical remit and reach, and meso-scale practices such as recruitment arrangements, hierarchical structure, networking opportunities and professional development.

Methodological Approach

The analysis draws on the findings from semi-structured interviews with practitioners from across a range of planning organisations and networks in the UK and Europe, designed to explore how such arrangements shape the space(s) for 'effective' planning. Planning in the UK has tended to operate through far more centralised governance arrangements than in North America and Continental Europe, with local municipalities typically having little autonomy from federal government. However, for this research project, participant organisations were chosen for their diversity of form, with a particular focus on those operating outside of the traditional tiers of the formal UK planning system. This includes private sector consultancies as well as innovative public sector organisations, and professional networks.

Following from this, the focus of the research is not on the quality of the planning work that is being done

and the associated spatial outcomes. Instead, the work focuses on the planner themselves, and their ability to work in a way that they consider 'effective', drawing on the normative model of the 'reflective practitioner' (Schön, 1983). A further important aspect of this has been to talk to practitioners who are both more senior and more junior in an organisation's hierarchy, in order to consider whether an organisation's normative ideals and public image are borne out in day-to-day practice.

Contribution to the Field

The paper offers reflections on which organisational factors are most clearly structuring the space for reflective practice within the planning discipline, factors that are derived from a European context but which may be generic to planning organisations globally and which highlight the importance of looking at how planning work is organised. Consequently, the work provides new insights into the intermediary links between the cultures of planning that tend to operate at a federal scale and the day-to-day practices at the micro-scale; both how they are structured by the former and structure the latter, and how they might be normatively organised to shape 'effective' planning practice.

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Key Words: Organisations, Agency, Professionalism, Structures, Culture

IDEOLOGY, POLITICAL IDEAS AND ORDERS OF CHANGE IN THE PLANNING POLICYMAKING PROCESS
Abstract ID: 324
Individual Paper Submission

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To claim that 'planning is political' is to state a banal truism. That planning is a political institution through which sometimes competing interests seek to influence development policy and outcomes has been well-documented. However, while there are studies which examine the political orientation of governments regarding planning there are relatively few studies which examine how this shapes the planning policymaking process at the national or sub-national (i.e. 'larger than local') political level.

This is a potentially fruitful area for study in systems where national and/or sub-national level policy sets the framework for the plans, policies and development decisions at local or municipal level as is the case in many European countries. A clearer understanding of the national and sub-national planning policymaking process is an important dimension in our appreciation of the political nature of planning, and of how political ideas shape the policy to which subsequent policy and development decisions at local or municipal level must have regard.

This paper seeks to help address this by examining the policymaking process which resulted in the 2012 English National Planning Policy Framework (NPPF). The NPPF represented a significant adjustment to national English planning policy and was a key element of the ideologically-driven changes introduced within the first three years of the formation of a Conservative-Liberal Democrat coalition government in

May 2010. Its publication in draft was met with significant public opposition ostensibly due to a perceived emphasis on growth through housebuilding at the expense of environmental and social objectives.

The paper uses a Discursive Institutionalist framework to trace the interactions between various government politicians, civil servants and lobby groups during the NPPF policymaking process. More broadly, the paper analyses how the practicalities of this process were shaped by, but also challenged and disrupted, the Conservative Party's ideological project at the time and seemed to mark a 'return of the political'. However, it also investigates how the process of public consultation, despite the spectacle of controversy, did not result in a radically different document and did not, therefore, significantly reorient the NPPF away from an emphasis on growth through housebuilding.

The contribution of the paper is to an understanding of how political ideas and the way in which they are communicated influence how policy is made and of the role of a political ideological project in shaping the policymaking process and setting the limits of what is acceptable. Furthermore, the paper addresses weaknesses in the existing discursive institutionalist analytical framework by arguing for a more nuanced and critical analysis of political ideas than that currently found in mainstream discursive institutionalism. The paper also calls for greater attention to be paid to the nature and extent of different forms of policy change in analyses of planning reform. These theoretical refinements will hopefully be of use to those interested in applying discursive institutionalism to analyses of national, state or regional planning policymaking in other contexts.

The paper thus makes a contribution to understanding of the animating and constraining power of political ideas in the planning policymaking process through examining the production of the 2012 NPPF in England as a paradigmatic case. The paper also contributes to a more general understanding of the role of different forms of political ideas in national (or sub-national) planning policymaking. It shows how the application of discursive institutionalism, which can take account of degree and level of change across various scales of political ideas and institutions, can help such forms of analysis. It is hoped that others may seek to apply this approach to analyses of planning policymaking in different cultural and political contexts.

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Key Words: ideology, discursive institutionalism, policy change, policy ideas, institutions

NEW MUNICIPALISM – CITIES AS THE CORNERSTONE FOR A NEW PROGRESSIVE AGE?
Abstract ID: 375
Individual Paper Submission

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There is renewed optimism that neoliberal urbanism, which has been dominant for close to half a century may finally be challenged. There is an emergent new muncipalism around socialist solutions to urban problems such as social housing and higher minimum wages. This agenda is primarily driven from below based in social movements. Seattle has seen a number of socialist city councillors successfully raise minimum wages to $15 per hour. Burlington, Vermont used land trusts to build affordable housing so that about 15 percent of the rental housing is not subject to the vagaries of the market. Jackson, Mississippi has a mayor trying to "create the radical city" around a "dignity economy." Barcelona has sought to retake the city from tourism and ensure residents are not displaced or lose their homes. On the other hand, there have been some setbacks. Amsterdam illustrates an example of a previously radical city that has regressed due to the decline of social movements and neoliberalism from above. The review of these cases considers the promise, obstacles, and opportunities the new municipalism agenda offers to rebuilding public purpose embracing democracy and equity.

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Key Words: New Municipalism, progressive cities, neoliberal urbanism, alternative urban policy

PLANNING IN RELATIONAL SPACES: THEORIZING APPROACHES TO RIGHT RELATIONSHIP IN PLANNING WITH INDIGENOUS PEOPLE
Abstract ID: 411
Individual Paper Submission

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The importance of relationship development is well established in the literature on planning with Indigenous people. This research develops a framework for understanding how various perspectives on the 'right relationship' (Coyle & Borrows, 2017) align with approaches to planning with Indigenous people. Recognizing that there are multiple perspectives on right relationship, the framework includes four 'relational spaces' that encompass a variety of these perspectives, using Shane Edwards' concept of a (k)new space (Edwards, 2013). For Edwards, the (k)new space offers a space for Indigenous people to move beyond established or restrained space, toward a lived space where Indigenous reality occurs. According to Edwards' concept, the first space is all about the dominant group. The second space is where Indigenous people are invited into the dominant space, but on the terms of the dominant group. In this space, Indigenous people must justify their interpretations and their participation in this space may be limited to presence. The third space, or (k)new space, is a space for Indigenous people to develop and offer their own interpretations of the world. It is a space to "re-member, re-position, and re-think" Indigenous knowledge (Edwards, 2013).

This research applies and advances Edwards' concept to the literature on planning with Indigenous people to demonstrate how different approaches to planning theory and practice support or inhibit engaging in 'right' relations. This analysis reveals gaps in how planning engages practically with approaches that promote both reconciliatory and resurgent planning. In the first relational space, approaches to right relationship are defined by the dominant group, and planning in this space involves approaches that

maintain settler authority over planning and Indigenous people and lands. The second relational space is where planning approaches recognize and include Indigenous people in an established planning framework without addressing issues of power and difference. Indigenous resistance also shapes the second space as Indigenous people use planning to advance their interests and assert rights. The third relational space, or (k)new space, includes planning approaches that promote resurgent Indigenous planning, including through Indigenous planning as theory, practice, and method.

This research builds on Edwards' framework through the contribution of an additional, fourth, relational space. The fourth space holds a perspective on right relationship that recognizes the interrelated Indigenous/non-Indigenous efforts toward a new relationship through reconciliation and resurgence, drawing largely on the work of Asch, Borrows, and Tully (2018). Planning with Indigenous people in this space includes approaches that recognize the relationship between professional reconciliation and resurgent Indigenous planning, including a focus on coexistence and unsettling. The framework is a tool for planning scholars and practitioners to consider the relational space with which their approach aligns. Ultimately, the relational spaces are interconnected and suggest that planning approaches do not exist in a fixed relationship to Indigenous people. Although the structures that planning operates within may maintain one perspective of right relationship, the individual agency of planners and communities within these structures offers an opportunity for change.

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Key Words: planning with Indigenous people, Indigenous planning, planning theory

WHAT IS THE POTENTIAL OF COMMUNICATIVE PLANNING IN THE AGE OF CLIMATE INJUSTICE?
Abstract ID: 449
Individual Paper Submission

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Engaging with the struggle for social and spatial equality, and now climate justice presents a real challenge for contemporary practices of communicative planning. Critical scholars (Purcell, 2009) lament that communicative planning's focus on communicative rationality and consensus-building limits who can challenge, where they challenge and how they might challenge the hegemonic logics shaping spatial planning in neoliberal planning contexts. The transformative potential of communicative planning initially envisaged by its foundational thinkers (Healey, 1997), has instead become a useful instrument of the state to mobilise its power, and do so in a way that leaves that power unquestioned (Grange, 2017). In considering the potential for communicative planning in the age of the climate emergency, I explore the question: what is the emancipatory potential of communicative planning to empower planning to respond to social and spatial climate injustice? In answering this question, I look to Habermas' (1984: 171) claim that 'Hannah Arendt understands power as the capacity to agree in un-coerced communication on some community action' and which constituted the core principal that underlay his two-volume work titled the Theory of Communicative Action".

By examining case studies of transformative politics in the planning for climate just transport systems from Australian cities, and drawing on participatory action research, this paper will reveal the power of un-coerced communication as a pathway to resist the coercive and hegemonic logics of marketisation and privatisation in the planning for future transport. However, in acknowledging the limits of communicative planning as a formal practice of the state, I conclude the paper by arguing the potential of communicative planning when led through citizen-driven, counter-hegemonic planning practices where climate justice is the dominant logic. Through this research, I seek to contribute to the critical engagement of transformative planning practices in the area of transport by looking at the potential of citizen-led communicative practices and how these new spaces and places are also establishing a resurgence of communicative planning.

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Key Words: communicative planning, urban politics, climate justice, consensus, conflict

PLANNING FOR/BY PLATFORMS
Abstract ID: 475
Individual Paper Submission

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This paper applies recent theorizations of digital platforms and platform urbanism to an empirical study of emerging practices of urban transportation planning. The platform, as it is articulated in media studies, is a digital system with a tension between two qualities. It is highly participatory and open to modifications from heterogeneous external actors, and at the same time it constrains and standardizes this participation in support of its own internal goals (Butt, et al., 2016). In Internet studies, Facebook and Google are paradigmatic examples of platforms exhibiting a paradoxical tendency to centralize content while and decentralizing the production of that content (Helmond, 2015). In recognition of the material and spatial dimensions of these digital networks, emerging scholarship in "platform urbanism" (e.g., Barns, 2019; Leszczynski, 2019) has used this concept to examine the unique dynamics of platforms in the city. Planners, for their part, have in recent years begun to address the unique regulatory challenges presented by platforms, particularly in their manifestations as "sharing economy" platforms such as Uber or Airbnb when these disrupt established regulatory domains (Kim, et al., 2019). Less examined, however, are the ways city planning itself adopts characteristics of the platform. As urban platform operators coordinate more closely with municipal regulators, the platform becomes not merely an external object to be planned for, but a mode of organization and interaction inherent to the practices by which the city is governed. As they have with media and communications, digital technologies are, I argue, accelerating the platformization of urban planning. This paper ask how digital platforms shape the politics and practices of urban planning, paying particular attention to its implications for democratic participation in the city.

A Seattle-based study of emerging practices in transportation planning and urban mobility, specifically those related to smartphone apps for accessing shared-use travel modes or navigation information, provides the empirical basis for the investigation of planning by platform. Data for this qualitative research include interviews with planning officials, providers of transportation and software services, and end-users; reviews of code and code-making practices in open-source mobility programming projects; and analysis of industry discourse. These provide evidence of planners practicing a platform-like combination

of open indeterminacy and close control. In the use of APIs to provide real-time transit data to third-party applications or the collection of location data required of trips on shared bikes, among other examples, I find an emerging imperative for planners to provide not just transportation infrastructure, but the platforms for mobility services. This shift has consequences for the urban inhabitant as platform participant. Travelers, for example, have greater flexibility in hailing an on-demand, door-to-door ride, but less opportunity to opt out of the surveillance of their movements. The platform's combination of freedom and control frustrates any straightforward normative assessment of its politics.

The findings of this study point to implications beyond the immediate concerns of transportation planning. They suggest that greater attention to how we plan not just for but by platforms can help shed light on more foundational questions of democratic participation. Such a perspective necessarily builds on planning theory's well-established interrogation of the power inherent in the design of participatory structures. The platform tempts planners in offering a mode of engagement with the city's heterogeneity and externality by means of digital standardization and internalization. With the ever-expanding opportunities for deploying digital technologies to organize the city, the prevalence of the platform paradigm in planning is likely to increase. Before embracing such a transformation, planners ought to look more carefully at the kinds of relations among city inhabitants that the platform assumes and produces.

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Key Words: platforms, technology, participation, planning practice, shared mobility

(HOW) CAN CRITICAL PLANNING (THEORY) BE KIND?
Abstract ID: 556
Individual Paper Submission

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We began with a puzzle: why so much attention to "justice" in planning (theory) and so little to "kindness"? If kindness involves practices of understanding and responding to Others' vulnerabilities, failing to do that in planning risks, we have shown, planners' not building caring, respectful relationships with Others but instead inadvertently humiliating, shaming, dismissing, disempowering, condescending to and/or pitying those Others. This paper will explore further the suspicion that accounts of injustice in planning require accounts of kindness and compassion in ways that appeals to justice might ironically, if not tragically, neglect.

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Key Words: Compassion, Kindness, Injustice, Practice, Vulnerability

THE SPATIAL PRODUCTION OF WHITE PRIVILEGE
Abstract ID: 564
Individual Paper Submission

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Discussions around white privilege most often frame it as an individual-level social benefit of whiteness. This paper contends there is a socio-spatial process that drives white privilege to embed itself within the spatial production of cites. First, I review traditional understandings of white privilege and discuss their limitations to planning practitioners and scholars. Using the conceptual framework of Lefebvre's Production of Space as a guide, I advance a theory of spatial white privilege that connects the creation of abstract space by the dominant class with the maintenance of power by whites through the mechanisms of invisibility, othering, and pathologizing of "non-whites." By having this understanding, the field of planning can start addressing social inequities not from the perspective of racial disadvantage but from the perspective of cumulative white advantage.

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Key Words: White privilege, Racism, Social Justice

COMPLETING THE PLANNER'S TRIANGLE: EMPHASIZING EQUITY IN LOCAL COMPREHENSIVE PLANS
Abstract ID: 574
Individual Paper Submission

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In Campell's (1996) foundational Planner's Triangle, social equity is one of the three main planning goals, along with environmental protection and economic development. The AICP code of ethics says that planners should aspire to "seek social justice by working to expand choice and opportunity for all persons, recognizing a special responsibility to plan for the needs of the disadvantaged and to promote racial and economic integration" (AICP Code of Ethics, 2016). Local comprehensive plans, then, should emphasize equity goals to a similar extent as environmental and economic goals. Yet in practice equity goals are often de-emphasized, or if included, disguised as an efficiency or an economic benefit (Berke & Godschalk 2009, Fainstein 2010). This study, conducted in partnership with the Michigan Association of Planning Social Equity Committee, investigated to what extent and in what ways local governments are including goals that would advance equitable outcomes in their comprehensive plans. We developed a publicly available plan equity evaluation tool that provides a checklist for anyone to use to evaluate a

local comprehensive plan on equity grounds. The tool covers many aspects of equity, including the planning process, housing, environmental justice, transportation access, and economic development. Given that planners pledge to make equity a central part of their practice, plans should include equity-related goals or strategies in all of these areas.

However, based on a dual-coded content analysis of 46 local plans, using the equity evaluation tool, we conclude that equity is not a main focus of most plans. We find that less the half of our sample plans mentioned equity at all and less than half identified vulnerable groups of people. Many plans did not include race and income in their demographic analyses. More than a third of plans did not include a goal that mentioned affordable, work force, or fair share housing and more than half of plans did not mention equitable environmental protection. If planners are supposed to emphasize equity to the extent that it is one of three pillars of planning, the plans are not yet living up to that expectation.

In this paper, we present a detailed analysis of our results and offer specific recommendations to increase the emphasis on equity in local comprehensive plans. The upside of the significant lack of equity goals is that there are many ways to easily increase a plan's focus on equity, many of which have low political and fiscal costs. Planning is redistributive by nature, both because it allocates public resources and facilities and because it arranges land uses in ways which have costs and benefits, winners and losers (Harvey 1973, Talen 1998). The planner's task, then, is to make that redistribution more transparent so that participants must ask and answer the question, "Does this goal/policy/decision make the most vulnerable people in our community better off or worse off?" While this study indicates that many communities are not asking themselves such questions, we are optimistic that this situation can change for the better.

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Key Words: equity, comprehensive plan, land use, plan evaluation, participation

"SHAME AND PREJUDICE": CHALLENGING COLONIAL SEXUALITIES AND TEMPORALITIES IN PLANNING THROUGH THE WORK OF KENT MONKMAN
Abstract ID: 606
Individual Paper Submission

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On July 1, 2017 Canada celebrated the 150th anniversary of its founding. This milestone was marked by a year-long series public events across the country celebrating Canadian identity and values. Many Indigenous people took exception to this exercise in nationalism for the ways it neutralized histories of settler colonial violence and erased Indigenous histories. As a rejoinder to the narratives of progress which characterized these celebrations, Cree artist Kent Monkman created the installation Shame and Prejudice: A Story of Resilience, which highlighted the history of colonialism in Canada. The work combines artefacts selected from museums and archives across Canada, as well as original paintings and dioramas created by Monkman. The installation is organized into six chapters, each representing an episode in the life of Monkman's alter-ego Miss Chief, a two-spirit character who appears in many of his works. Miss Chief invokes not only temporal but also gender fluidities, pointing to the forms of sexualized colonial violence that have been an ever-present feature of Canadian history. Shame and

Prejudice highlights how the imposition of heteronormativity is a defining feature of settler colonialism, with colonial sexuality serving as a "method to produce settler colonialism and settler subjects, by facilitating ongoing conquest and naturalizing its effects" (Morgensen 2010, 117). As a re-telling of Canadian history, Shame and Prejudice provides a means of understanding how sexualized colonial violence establishes a relationship between sexuality and sovereignty, where the regulation of sexual identity becomes a means through which political authority is legitimized (Rifkin 2011, 174).

In this paper, I mobilize Indigenous queer theory to develop an analysis of planning that parses the intimate, embodied, and emotional dimensions of settler colonial violence and decolonial responses to it, while also considering the role historiographic thinking must play in decolonial approaches to planning. Indigenous artistic production point towards modes of planning praxis that refuse colonial narratives (Dorries & Harjo 2020). Drawing upon Kent Monkman's Shame and Prejudice, I develop a historiographic planning practice that frames historical events in ways that challenge colonial sexualities, while also denaturalizing colonial settlement and disrupting narratives of conquest. This practice asks planners to take responsibility for these histories without also demanding reconciliation or absolution and requires that planners pay attention to the ways that planning reproduces multiple forms of violence, including queerphobia and misogyny. I conclude by arguing that a decolonial approach to planning refuses not only the temporalities of settler colonialism, but also the forms of subjectivity and relationality imposed by settler colonial planning. Viewing planning as an activity that fosters and relies upon the formation of relations—both intimate and diplomatic—is one way of resolving the methodological, epistemological, and moral challenges that are posed by the linear temporalities that define colonial planning.

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Key Words: indigenous peoples, sexuality, colonialism, history, art

LESS JUSTICE, MORE DEMOCRACY
Abstract ID: 623
Individual Paper Submission

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Planners need to stop thinking so much in terms of equity and justice, and begin thinking much more actively in terms of democracy.

That first sentence may well bewilder progressive planners, who for years have tried to get the profession (and, to a lesser extent, the discipline) to stop thinking of itself as a politically neutral technical exercise to define the public interest and to embrace instead the idea that planning can be political, can take sides, and can work to advance the interests of marginalized subject groups. For those who understand that planning is political, equity and justice are the stock-in-trade concepts. The focus event at this years ACSP conference, for example, which pays very welcome attention to race, does so, as ever, in the same old terms: "Racial Equity and Justice in Urban Planning Research and Education in the Face of Racialized Inequality." Track 2 of the conference, Community Development, "is particularly interested in social justice action projects that focus on equity outcomes." Track 5, Gender & Diversity, similarly, encourages papers that "speak to issues of justice, equity, and inclusion." This paper assumes that these progressive planners are entirely correct, that planning can never be neutral, that it must be political. It argues,

however, that we need to think those politics differently.

When planners think too much in terms of equity and justice, the paper argues, they become obsessed with outcomes. There are inequities, injustices, and imbalances in the world, this thinking goes, and planners must intervene to deliver outcomes – income redistribution, pollution reduction, affordable housing – that increase equity and justice. In this way of thinking, delivering those outcomes becomes the point of planning. The question of how those outcomes are achieved fades into the background. Justice must be achieved, by any means necessary. This tempts planners, very strongly, to see urban inhabitants, and particularly inhabitants who are members of marginalized subject groups, as passive recipients of outcomes delivered to them by others.

I argue that we should think, instead, in terms of democracy. Democracy, understood radically, is a way of life in which demos is joined with kratos. In democracy, people do not surrender their power to an entity outside and above themselves. Instead, they retain their power, and they use it to manage their affairs themselves.[1] The project for democracy, therefore, is a project in which the whole point is for people to develop as democrats by practicing democracy. Their development as democrats requires them to become politically active, aware, and alive, so that they can come to learn their own power and learn to use it to manage their affairs well.

The point of planning, from this perspective, is not the delivery of certain outcomes. It is people's self-development as democrats. What matters for the democratic project is that people begin to take their affairs into their own hands, that they produce for themselves the outcomes they desire. What would that look like, a planning whose purpose is to ally with people in their project to develop their own capacity for democracy? That is the question this paper hopes to install at the core of planning theory.

[1]This conception of democracy draws principally on (Purcell 2013), but also on a long tradition of autonomist thinking in political theory, including (Rancière 1999; Castoriadis 1991; Lefebvre 2009; Hardt and Negri 2004), among many others.

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Key Words: democracy, justice, equity

EMOTIONAL GEOGRAPHIES OF PROFESSIONAL PLANNING PRACTICE IN THE CONTEXT OF A PRECARIOUS EXISTENCE
Abstract ID: 686
Individual Paper Submission

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This paper is informed by the research question: what are the ways that empathy and compassion inform professional planning practice and pedagogy in managing contemporary contexts of uncertainty?

This paper intersects the recent research on the role of emotion, specifically compassion and empathy, in

professional planning (Lyles, White, and Lavelle, 2017) with research on racialization and recognition in planning practice (Jacobs, 2019) and established research on emotional geographies and affect (Davidson, Bondi, and Smith, 2005). This paper also draws from several empirical sources including: the synthesis of policy research findings gathered by the Planning with Indigenous Peoples (PWIP) Research Group at Queen's University on Indigenous-municipal relations in the context of land use planning in Southern Ontario (Viswanathan, 2018), and a survey completed by professional planning bodies in Canada on compensation and benefits and well-being of professional planners in the rapidly changing landscape of professional practice in public and private sectors (Bram and CIP, 2019). The contexts of uncertainty informing this paper draw from the precarity of Indigenous-settler relations in Southern Ontario that are informed by Canadian and international discourses on truth and reconciliation and land protection, and exploratory research involving the psychological welfare, racialized inequality, and mentoring of BIPOC (Black and Indigenous People/Person(s) of Color) planners in building more inclusive planning systems, and a wide range of planners' responses to municipal and regional climate change adaptation planning practices in the face of government budgetary restraint and prioritization. Linking theory to practice, this paper also contributes to planning pedagogy by sharing insights into how emotions in planning practice can transform what planners are taught and how they are taught to manage different conditions of uncertainty, starting with their own communities of practice (e.g., as teachers/academics, planning students, planning practitioners). The inspiration for this exploratory research comes from conversations held by this researcher with professional planners during training sessions that were conducted on Indigenous-municipal relations in Ottawa and Calgary, Canada in 2019. These conversations revealed planners' seemingly high propensity for hope at the same time that they experienced low morale when facing uncertainty with the economy, with planning outcomes, and with their institutional and governmental policy directions (or lack thereof) on climate change, diversity and inclusion, and relationship-building with First Nations. While this exploratory inquiry emerges at the intersection of both conceptual and empirical study, the possibility exists to develop descriptive case studies that will lead to comparative study and innovation in other jurisdictions.

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Key Words: affect and empathy in planning, precarity, planning theory, racial inequality, Canada

THEORIZING TEMPORALITY AND 'BECOMING' IN RURAL ONTARIO: PLANNING COMMUNITIES OF DIVERSITY AND DIFFERENCE OUTSIDE THE COSMOPOLIS
Abstract ID: 691
Individual Paper Submission

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Over the past six decades, the settlement locations of immigrants to North America have primarily been cosmopolitan gateway cities and their surrounding suburbs. However, recent policy initiatives in Canada

(e.g., federal *Rural and Northern Immigration Pilot*; *Rural Employment Initiative* in Ontario) have resulted in spatial redistributions of newcomers into smaller cities and rural towns. These changing settlement patterns are deemed necessary to mitigate the economic and social impacts of population decline prevalent in small cities and rural communities, while also addressing the barriers to successful integration facing recent immigrants residing in urban areas. These emergent trends provide new opportunities to explore issues and approaches to planning for diversity and difference outside of major urban areas with particular attention to the importance of temporality of/in the changing settlement and resettlement patterns of newcomers in Canada.

The role of time, temporality and 'timescapes' have received growing attention over the past decade by critical spatial scholars including those in planning (Degen, 2018; Laurian and Inch, 2019) who note: "planning…is a richly, temporal practice which has not yet fully explored the possibilities that could be opened up by adopting explicitly temporal ways of knowing and acting" (Laurian and Inch, 2019, p. 281). This paper heeds the call to more fully explore the importance of temporality in planning through a study of recruitment and resettlement of diverse immigrants into small cities and towns in Ontario, Canada. This mixed methods study draws on survey and interview data from key informants working within rural communities actively recruiting immigrant populations, as well as focus groups and interviews with newcomer populations who have or are in the process of resettling from urban into rural communities. The analysis highlights the contrast between community-based concepts of time and futurity with the personal temporal narratives and utopian visions of immigrants settling within those communities.

More specifically, the findings from staff and elected officials in rural communities illuminate how preoccupations with past timescapes (Degen, 2018) shape their plans for temporal transformations from a shrinking and stagnant community into a vibrant and 'welcoming' one. The temporal sense of 'becoming' (Grosz, 1998) is sought through social and economic policies prioritizing immigrant attraction and retention. From the perspective of immigrant participants, the promise of a previously unrealized utopian future in Canada was a primary driver for their decision to resettle outside of urban areas. Immigrants play with time in order to realize their own desire for socio-spatial belonging and personal 'becoming' (Grosz, 1998) in Canada.

This paper contributes to recent efforts to shed light on the role of time in planning theory as well as explore emergent issues in planning for diversity and difference (Burayidi, 2015; Qadeer, 2016). Specifically, the paper emphasizes the flexible constructions of time- slowing, pausing, speeding, imagining- that were implemented by communities seeking physical and social change towards and/or back to times of growth and vitality, and immigrants striving to settle, integrate and belong in Canadian society. The paper concludes with a discussion of what the changing settlement patterns of immigrants means for planning communities of diversity and difference outside the cosmopolis.

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Key Words: rural immigration and settlement, temporalities, planning for diversity and difference, becoming

ON TRAUMA, PLACE, AND PLANNING ETHICS

Abstract ID: 702
Individual Paper Submission

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As a practicing planner, I facilitated various community engagement processes in predominately Black communities across the State of Mississippi. During this time, I began to notice a pattern of physical, emotional, and visceral reactions to questions about the community, planning processes, and development practices. In these conversations, the (1) the past was ever-present, (2) place and identity were intrinsically linked, and (3) changes in place, whether development or abandonment, were interpreted as threats to a collective being. These reactions surfaced even though many of these communities had Black political power, economic resources, and deep social networks. While feelings of distrust towards planning and development may be typical and understandable in communities experiencing abandonment, the phenomenon I observed revealed a deeper issue. I was experiencing communal expressions of a psycho-socio-cultural process profoundly rooted in place and intertwined with collective memories of oppression.

In discussing this experience with planning colleagues and becoming involved in planning activities in South Los Angeles, California, I realized this phenomenon is not unique to Mississippi; instead, it is a consequence of national harmful, racialized histories. Patterns of abandonment, displacement, and erasure, made possible by racially violent practices and policies (such as colonization, slavery, Jim Crow, segregation), have traumatized Black spaces and places since the inception of the United States (Thomas 1994; Song 2015). Despite advances in civil rights legislation, equality, and political representation, many Black communities still struggle to achieve equal access to resources, infrastructure, well-being, and wealth (Lipstiz 2011). While acknowledging the on-going struggle to advance material gains in Black places, this work focuses on the psycho-socio-cultural component, often neglected in planning literature. In doing so, I seek to understand how places hold trauma and the implications of the presence of place-based trauma for planning practice. In this paper, I ask to what extent does collective memory of racialized histories rooted in place (communal trauma) shape spatial imaginaries around planning and development processes, and what are the implications for planning ethics?

To answer this question, I first define concepts of spatial imaginaries and communal trauma and examine their relationship through a multidisciplinary review of the literature. Then, I explore how these concepts apply to my experience as the senior planner of an intensive planning project, which prioritized building community consensus through an aggressive community engagement process. Using data collected from field notes, correspondence, meeting minutes, and film of public meetings, I provide a retrospective autoethnography in which I focus on analyzing discourses that illustrate the presence of communal trauma in this planning process. Through this discursive analysis, I conceptualize 'trauma imaginaries' as a way to identify, understand, and theorize the psycho-socio-cultural phenomenon that happens during planning and development processes. This paper conceives trauma imaginaries as performative discourses in which racialized histories of harms and wrongs drive collective understandings and productions of place.

By establishing the concept of trauma imaginaries, I argue that planners cannot act ethically without addressing communal trauma. While planning literature have long identified and analyzed the profession's contribution to producing oppressive, racialized spatial realities, Sandercock (2004) calls for a "therapeutic imagination" by which planning not only identifies harms but also seeks to repair the damage inflicted. Schweitzer (2016) builds upon this concept by focusing on the ethics governing the role of planners in social learning and healing. I aim to advance this concept of restorative ethics by exploring communal trauma as a way to understand the psycho-socio-cultural processes of place and as a tool of social learning and healing in planning and development practices.

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Key Words: planning ethics, race, trauma, social justice, place

ON THE COGNITIVE MECHANICS OF PLANNING JUDGMENT
Abstract ID: 724
Individual Paper Submission

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Practical judgment has been an object of planning thought for several decades. This work has shown that novel, innovative plans are composed through the exploration of complex and uncertain social, economic, ecological, and political contexts, not through the strict application of the rational method or by making carbon copies of past successes (Schön 1982). Plans offer collective advice to guide action in the face of complexity and uncertainty (Hoch 2019). Research on social psychology demonstrates the ways in which intuitions bias decisions and potentially impact plans (Kahneman 2011). As a result, planning scholars are now considering the psychological roots of planning and how they relate to the craft of making plans (Hoch 2019; Hoch, Zellner, et al. 2012). Here, we argue that heuristics represent theoretical models of judgment enabling researchers and practitioners to describe and explain planning practice explicitly and systematically (Gigerenzer 2010). We highlight the potential identification of heuristics in participatory planning contexts by analyzing two empirical cases from a planning process associated with New York State's Downtown Revitalization Initiative. Analysis of video recorded planning meetings shows how heuristics influence stakeholder deliberations about community goals and priorities. We discuss and describe the implications of our argument for planning theory, research, and practice, especially the design of community engagement processes and activities.

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Key Words: Heuristics, Practical Judgment, Participatory Planning, Cognitive Bias, Social Psychology

STATE POWER, PLANNING AND DEVELOPMENT IN THE POSTWAR BATTICALOA, SRI LANKA
Abstract ID: 895
Individual Paper Submission

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My research investigates the working of power as it is mediated through development programs in the postwar conjuncture of Batticaloa, Sri Lanka. The research questions I examine are: (i) how development programs are devised by the 'fields of power'; and (ii) how do they collide with Tamil and Muslim people's social, political and economic processes in Batticaloa. Through my critique of development, I elaborate the dominating development ideology in the postwar Eastern region as it is produced by the discursive practices of diverse agents of power. Further, specifically looking at the role of planners in the making of development programs I examine what was the role that the state maintained for planning in development and the degree to which the planning was instrumental in undertaking the political projects of the state.

I apply 'extended case method', which guides me to connect micro observations to macro theory, deepen and modify the theory. It enables me to link empirical fieldwork data and theory and helps produce a theoretically driven ethnography. Further, extended case method enables me to achieve a relational understanding of what is occurring in the site and its connections to broader power struggles. I conduct an in-depth investigation of the selected postwar livelihood improvement programs in Koralaipattu region of Batticaloa District. My major data collection methods are documentary analysis, semi-structured interviews, and participant observation.

My findings reveal that people's diverse meanings of development starkly deviate from the state agents' approach to development in the postwar Eastern Sri Lanka. In Batticaloa, people's ideas of development are embedded within their everyday struggles for various claims. Through my case studies I show that people negotiate access to land, local divisional state boundary, fishing grounds, and factories that use locally available raw materials - that hint people's meanings of development. I argue that development is a bundle of many things. In the postwar Sri Lanka, development is articulated by people differently at different times. People tend to define development within a series of changing contexts, processes and forces that produce various conditions and facilitate shifts in their ideas of development. Therefore, at times, state's idea of development collides with people's aspirations. I further show that in the postwar eastern Sri Lanka ethnicity is not a coherent identity. The ethnic divisions prevail in a complex field. People's resistance movements and groups encompass different ethnicities, locality, religion, economic status that appear differently at different times.

The relevance of my research to planning practice and education is that I interpret the present problematic (i.e. poverty, everyday life struggles, and poor quality of life) of postwar Eastern Sri Lanka as the outcome of planning and development. Further, I address the major gap in planning theory focusing on the question of power in planning research, that is, scholars argue that planning theory still lacks a body of research that places power relations at its core.

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Key Words: State power, Development, Planning, Postwar conjuncture, Sri Lanka

THE PUBLIC INTEREST AND THE PROMISSORY POLITICS OF PLANNING

Abstract ID: 932
Individual Paper Submission

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In July 2019 Grosvenor, which bills itself as "one of the world's largest privately-owned property companies" published the findings of research conducted in England which came to the stark conclusion that "the public doesn't trust the planning system. Nor does it trust private developers" (Grosvenor, 2019). Neither the results nor Grosvenor's rather anodyne conclusions about how to better communicate the value of what private sector developers do were all that surprising. In liberal democratic states in many parts of the global north opposition to urban development has been identified as an increasingly pronounced political challenge, whilst the democratic legitimacy of state planning processes has long been questioned from positions across the political spectrum. Grosvenor's intervention into these debates, and particularly their recognition of prevailing discontent with the distribution of private profit and public gain from development, however, arguably reflects unease with the model of market-led, state-mediated urban development that has prevailed under neoliberal government in many regions of the world over recent decades and may therefore point towards emergent political possibilities to articulate alternative conceptions of the value of public planning.

Any prospects for challenging dominant models of development rests on reshaping ideas of the public good and the power-relations through which it comes to be defined and realised through planning processes; a task inextricably linked to public disaffection with the operation of planning institutions ostensibly designed to guarantee wider interests in the development of land. As such, they raise enduring planning theoretical debates around the problematic meaning and value of terms like the public good, common good and the public interest as justifications for planning interventions, particularly in an era marked by declining publicness and an apparent diminishing of collective purpose (Lennon, 2016; Tait, 2016).

In this paper I seek to take these debates further by paying particular attention to one finding from Grosvenor's survey, that more than 72% of respondents wanted more power to hold developers and public planning authorities to account for their promises. Drawing on Beckert's (2019) idea of promissory legitimacy, a form of authority founded on actors' expectations of future effects, I argue we need to recognise how debates around the public good are shaped by the temporalities and 'promissory grammar' of planning, premised on fictional claim-making about possible (but unknowable) future benefits of development. Under market-led, state-mediated urban development developers and planners have been empowered to disproportionately overpromise future benefits (without necessarily being required to declare private gains), safe in the knowledge that mechanisms to interrogate their claims and hold them to account in either the present or future are weak. Over time, however, such approaches have cumulatively drawn the 'promissory legitimacy' of the system into question.

Viewed in this way, the task of reimagining the publicness of the state and repairing the public interest justification of planning requires attentiveness not just to procedural or outcome-based conceptions of justice in determining the public interest (Maidment, 2016) but also to the previously overlooked promissory grammar of planning and development and the nature of the politics it generates. The paper therefore ends with a discussion of the implications of taking the promissory grammar of planning seriously as part of any political project to reinvigorate the public value of planning (Healey, 2018).

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Key Words: public interest, promissory legitimacy, public trust, publicness

PUBLIC EMOTION, THE MEDIA, AND THE CONDITIONS OF POSSIBILITY FOR URBAN POLICY AND PLANNING: THE CREATION OF AN URBAN PUBLIC LAND TRUST
Abstract ID: 964
Individual Paper Submission

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Contemporary planning theory argues that planning is a communicative, deliberative process that requires engaging politics, emotions, stories, institutional processes and fragmented communities. While much has been said about the role planners can and should play in shaping stories (Sandercock, 2003), less work has been done looking at the role that dominant stories and the state of public conversations, for example emotional tenor or divisive language, have in shaping the range of policy options that staff and political actors put forward. While there is growing scholarship on emotion in policy and governance research, including problematizing the category itself to consider personal, public and collective emotions (Durnova, 2018) this has been somewhat neglected in the urban planning literature (Baum, 2015). This is despite growing awareness that analysis of emotion are highly valuable for understanding key planning processes like community and stakeholder engagement and education (Peltolaa, Åkerman, Bamberg, Lehtonen, & Ratamäki, 2018).

This paper aims to better understand the way public emotion shapes the conditions of possibility for planning and policy action through examining the controversial passing of the Toronto Islands Residential Stewardship Act. This provincial legislation brought Toronto's first urban public land trust into existence in 1993. Support of and opposition to the legislation roughly maps onto common urban/suburban and left/right divisions that often shape conflicts in and around the Greater Toronto Area (GTA), with those from the central city taking a pro-legislation position while those from more suburban areas largely opposed to it. Conflict between residents and the municipal government was also the reason for provincial intervention, in effect taking the decision out of the hands of the municipality. Similar longstanding alliances/oppositions in the GTA are frequently cited as causing major stalemates in city processes (Walks, 2007), and understanding more about their role can add to our understanding of planning's constraints and opportunities.

Data collection for this project is under way in the spring/summer of 2020. Initial media scans and reviews of reports and deputations leading up to the legislation confirm the highly charged emotional tenor of the conversation. A media analysis will be the central method, as the emotional qualities as well as the content of public conversations are oftentimes represented, if not possibly shaped by the media. This analysis will allow for the emergence of some insights into the relationship between public emotion, policy development and political and planning possibilities in the GTA.

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Key Words: Emotion, Policy, Land trust, Toronto, Media

ZONING DISCOURSE IN LOS ANGELES
Abstract ID: 1005
Individual Paper Submission

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Los Angeles presents a critical case for studying the political economy of urban development, the process through which public policy is created and negotiated by city planners and various stakeholders. The forces that shape urban development have been explained from the perspective of economics (Harvey, 1985) and governance regimes (Stone, 1993). Although the role of city planners in this process has been described as mediating the public and private interests (Foglesong, 1986; Friedmann, 1987), less is known about how they manage this task in practice. More specifically, even less is known about how the planner's role in translating public policy into built form is affected by the influence of governance and democratic politics. This research examines the planning mechanism of land use zoning, how it regulates urban development, and how it is shaped by the political economy. In particular, I will focus on the case of "Re:code LA," the City of Los Angeles' multiyear project to redesign its zoning code, and its consequences for land use policy and local democratic planning.

This case presents one of the fundamental conundrums of planning theory, which is how to foster democratic planning of urban development with just and equitable outcomes. Close inspection of zoning, as a tool, exposes the hidden values and ideological underpinnings that shape urban development. Furthermore, when the zoning tool is being substantially redesigned, it opens a unique window into the changing landscape of urban development and the opportunity to study emerging tactics, knowledge, and resources.

This research analyzes discourse around the current and historical zoning changes in Los Angeles. Qualitative Data collected on the content and language embedded in the zoning code documents illustrate how the state and powerful actors articulate the values and implementation strategies for urban development, and how these values are aligned with broader political ideologies and disciplinary objectives. Preliminary Interview and observation data from formal and informal actor groups reveal how alternative narratives and perspectives are restricted or marginalized by zoning regulations. Additional preliminary interview and observational data within planning institutions reflects how planners mediate this dialogue of competing interests.

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Key Words: Zoning, Planning Theory, Political Economy

DISABILITY AND THE JUST CITY
Abstract ID: 1148
Individual Paper Submission

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The right to the city is a well-established concept in planning. Sandercock (1998) suggested that to build a just city, difference must be tolerated, and treated with dignity and respect. Planning theory should connect with "other theoretical discourses – specifically debates around marginality, identity and difference, and social justice in the city – because these are debates which empower groups whose voices are not often heard by planners," (Sandercock, 1998, p.110). However, disability is a type of difference that is undertheorized in planning theory, research, and practice. For example, Fainstein's (2010) Just City and Readings in Planning Theory (Fainstein & Campbell, 2012) engage with difference on several axes (e.g. race, gender, class) through social justice, but relegate disability to footnotes and passing sentences.

These theoretical omissions have implications for planning practice. For example, a recent literature review on walkability concluded that "failing to capture diversity in ages and abilities…has potentially resulted in data-informed practices and guidelines that perpetuate the exclusion of spatially marginalized groups," (Stafford & Baldwin, 2018, p. 25). Meanwhile, systematic reviews of childhood mobility reveal a paucity of research considering disability as a form of difference (Ross & Buliung, 2018). If planning scholarship and practice want to build just cities, truly inclusive of all difference(s), disabled folks' experiences have to be understood in a way that centers their voices. Meaningfully incorporating disabled folks' experiences into planning, however, raises important questions: How should planning research be conducted with disabled people? What scales should we look at (i.e. body, relationships, urban design, land-use, socio-political contexts)? What are the limits of interventions in the built environment for addressing embodied impairments? What might the 'right to the city' look like through the lens of a disability critique?

I first outline how disability has been taken up in planning theory, research, and practice. To conceptualize and address the lack of engagement with disability as a form of difference in these planning narratives, I argue for a novel four-pronged approach to understanding the 'right to the city' through the lens of critical disability studies. This framework offers potential to contribute to more just planning practice by rethinking 'who belongs' in public space and how to plan for a caring city that respects fluid, changing bodies and experiences. This four-pronged approach includes understanding: (1) space as a result of normative conceptions of the body; (2) how stigma affects socio-spatial experiences; (3) disability as an embodied socio-spatial relational process, and (4) how a focus on interdependence, care and relational citizenship can reveal innovative practices by individuals that can be built on by planners, and force a rethink about what it means to be a citizen with the right to the city. This analysis is grounded in empirical evidence from an in-depth case study with community-dwelling people living with dementia (PLWD) in suburban Waterloo, Canada, including lifecourse and go-along interviews, GPS tracking, travel diaries, and participant observation. This represents an interesting case because dementia is considered a disability, and there are unresolved debates about what it means to be a citizen and have the right to make decisions/access public space as a PLWD.

The way we build cities is a reflection of who 'belongs' in society, and "serves as a litmus test of broader social exclusions," (Hamraie, 2014). The findings of this paper reveal tangible ways planners can work with and incorporate the needs of disabled people in their everyday practice as city-builders. A disability critique of planning can teach scholars, practitioners, and educators about embodiment, experience, and socio-political context that goes beyond an ADA checklist, and can lead to truly inclusive approaches to city building.

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Key Words: disability, right to the city, dementia

BEYOND ADVOCACY AND PLURALISM IN PLANNING: THE EXTRAORDINARY PUBLIC LIFE OF PAUL DAVIDOFF

Abstract ID: 1175
Individual Paper Submission

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For more than fifty years, Paul Davidoff's article "Advocacy and Pluralism in Planning" has been acknowledged as one of the most important texts featured in graduate planning history and theory courses throughout the country. The article offers a trenchant critique of mainstream planning by challenging many of the central tenets of the rational model of planning, including the: possibility of value-free planning, primacy of physical over social planning, existence of a unitary public interest, and planner as apolitical technician. In this article, Davidoff described how these limitations of Post-War planning tended to advance the interests of what Molotch and Logan later described as the urban growth machine at the expense of economically and politically marginalized groups, especially the poor, racial minorities, senior citizens, persons with disabilities, and new immigrants.

Highlighting the failure of traditional planning to expand opportunities for those with the fewest resources, Davidoff called for the development of a new form of professional practice which he referred to as advocacy planning which seeks to enhance the voice poor and working class communities have within urban planning policy-making by providing them with high-quality plans produced through participatory processes that can be used to challenge the values, methods, findings, and recommendations of plans produced by centralized planning agencies. Davidoff believed that the quality, creativity, and fairness of public planning process would be improved through the production and public debate of competing plans.

For many planners, this article and the "bottom-up" movement of resident-led planning it engendered through local organizations such as Boston's Urban Planning Aid and New York's Cooper Square Committee and nationally through Planners for Equal Opportunity and Planners Network represents much of what they know about Davidoff's contribution to our field. A careful review of Paul Davidoff's papers held at Cornell University, the official records of the Suburban Action Institute housed at the Rockefeller Foundation Archives, and interviews with nearly forty of Paul's family members, friends, colleagues, and opponents undertaken by The Paul Davidoff Tapes Project at the University of Massachusetts has produced a new understanding of many of the under examined aspects of Paul Davidoff's public life.

This paper will explore under reported aspects of Davidoff's work as a scholar who made important contributions to urban planning theory, methods, and ethics; an institutional builder who established a graduate planning program to train advocacy planners and an action research center to promote equal opportunity in education, employment, and housing; an activist who fought to provide poor and working-class families with access to economic opportunities emerging in American suburbs, increase Federal funding for affordable housing, and an end the Vietnam War; a lawyer who sought to eliminate housing segregation by striking down exclusionary zoning through a series of fair housing cases; and a Garden City developer who promoted socially integrated housing for assembly line workers employed at the Ford

Motor Company in Mahwah NJ.

At a time when income, wealth, and power disparities are increasingly characterizing our major metropolitan areas, the comprehensive approach to promoting the just city aggressively pursued by Paul Davidoff offers important lessons to the current generation of equity planners.

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Key Words: Advocacy, Equity, Justice, Participation, Davidoff

ACCESSIBILITY AND TRANSPARENCY OF ONLINE PARTICIPATION FOR COLLABORATIVE PLANNING
Abstract ID: 1201
Individual Paper Submission

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Over a decade or so, an increasing number of municipal, state, and federal government agencies have adopted open data policies and created various online data visualization platforms. Increased accessibility to data has not only enhanced planners' ability to analyze planning problems but also made it possible to disseminate planning knowledge more broadly to communities. Meanwhile, the emergence of social media in planning has enabled planners to effectively connect and collaborate with communities (Kleinhans et al. 2015). In this research, we argue that the emergence of online data and technologies has made the planning process more accessible and transparent, and online participation, involving knowledge dissemination and communication, can enhance collaborative planning.

We use a literature review from 2010-2020 and case studies to address two research questions. First, how might online participation meet or miss definitions and limitations of collaborative planning (Mattila 2016; Goodspeed 2016; Godschalk and Mills 1966)? Second, do enhanced accessibility and transparency based on data and technology mean effective collaborative planning, leading to better decision-making? We present evidence that the limitations of collaborative planning could be somewhat overcome by utilizing today's information technology. Further, online participation may serve to bridge collaborative and co-productive planning (Watson 2014).

However, online participation's key affordances of accessibility and transparency do not by themselves ensure collaboration in a planning process. In practice, online participation can bridge the bifurcation of communication among planners, policymakers, and communities. Planning scholars' emphasis on social media and other online approaches as a communicative practice may over-simplify the opportunity to support collaborative processes and inclusive community planning outcomes.

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Key Words: collaborative planning, social media, online platforms, co-productive planning

ACTION BETWEEN THE LINES: 'GRAY' INSTITUTIONS AS PLANNING KNOWLEDGE AND POWER.
Abstract ID: 1239
Individual Paper Submission

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Many municipalities have a small room where officials assemble applications for land use changes and construction. Requests that come in, as stacks of papers or a cell phone call from a superior, can translate into a stamped permit to be posted on a building project, signaling legality and compliance. The collective practices of employees and their networks in these offices – the shared rules of thumb, habits and modes of operation, materialized through checklists, copied handouts and spoken values – meaningfully mediate the land use plans and laws on the books and also actively negotiate the larger networks of political and economic power entangled in urban expansion.

Drawing on three case studies conducted in the past two years on peri-urban expansion and land use practices in Mexico and Syria, I position these practices can be usefully understood as 'gray institutions'. This naming situates them as meaningful and systemic 'patternings' weaving between and beyond the categories of formality and informality and legality and illegality. Foregrounding a subset of practices as institutions also enables a more systematic examination of process through the growing strand of scholarship connecting planning to institutional analyses (Sorensen 2015), and specifically sociological-institutional lenses of networks and relations (Salet 2018; Healey 2007). As a way to expand and connect planning scholarship's strong traditions of examining expertise and action (e.g. Forester 1989) and emerging scholarship on land use implementation in the South (e.g. Fawaz 2017), my cases suggest that grounded institutional lenses can enable new insights into embedded networks and patterns of 'plan doing' mediating everyday urban expansion.

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Key Words: institutions, municipalities, local government, practice, plan-doing

UTOPIAN URBANISM AND THE BLACK RADICAL IMAGINATION: A MEDIATION
Abstract ID: 1297
Individual Paper Submission

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Renewed interest in utopian thought in the planning context, itself a product of the material conditions of our time, has bolstered demands for racial and economic justice within American cities. Increasing demands for distributive justice and reparations have undergirded municipal political movements and these movements have, in turn, influenced the timbre of planning scholarship (Fainstein, 2010; Steil, 2018). Utopian dreams of a "just city" do not emerge, however, from atomic individuals detached from their social specificity, they emerge from and are shaped by particular epistemic communities. As we once again reflect on the importance of utopian thought in the planning context and debate its causal efficaciousness, we must be sure to recognize and include the distinctive spatial imaginaries of African Americans – their "blues epistemologies" (Woods, 1998) and their "freedom dreams" (Kelley, 2002). It is through a greater appreciation of black radicalism's metanarrative (i.e, white supremacy and racial capitalism) and the proposed responses to it (reparations, black nationalism, self-determination, and the like) that we will enrich our understandings of what might actually constitute a "just city."

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Key Words: Reparations, Utopian thought, Radical Planning

EPISTEMOLOGIES AT THE CROSSROADS: COPING WITH CLIMATE CHANGE IN THE FISHING COMMUNITY OF GLOUCESTER, MASSACHUSETTS, USA
Abstract ID: 1401
Individual Paper Submission

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With the advent of the Anthropocene (Crutzen 2002), scholars around the world have concluded that human exploitation of natural resources had outcompeted natural processes capacity to sustain life on the planet. In the last twenty years, this shared agreement has driven the reshaping of research agendas across disciplinary boundaries in the search for responses to increasingly relevant environmental problems such as climate change. While various streams of research have started tackling these
new research endeavors, the use of a wide variety of epistemologies is becoming a paramount concern, even more, when those research efforts determine planning actions.

The focus on how climate change affects the fishing industry is a typical example of how a variety of epistemologies should drive the crafting of planning and policy regulations. Over the last decades, environmental scientists have generated predictive theories on ocean system change, informing planning and policy regulations on the fishing industry. In contrast, social scientists have raised questions on the legitimacy of those mainstream epistemologies, especially when
those research efforts have systematically excluded community-based ways of knowing (St. Martin 2001).

Focusing on the case of the fishing community in the City of Gloucester (MA, USA), this paper critically reflects on how rival epistemologies can corroborate in generating planning outcomes. By using the concepts of episteme, techne, and phronesis (Flyvbjerg 2001), it reflects on the possibilities offered by the intersectionality of epistemologies to guide better synthesis between knowledge and action (Campbell 2012) for the planning of social-ecological systems.

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Key Words: Epistemology, marine spatial planning, climate change

TRACK 13 – POSTER ABTRACTS

THE SOCIALIZATION OF AMERICAN PLANNERS
Abstract ID: 997
Poster

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Planning is a profession whose goal in contemporary society is to maximize the health, safety, and economic well-being of all people living in our communities. In 2018, there were over 4,200 students enrolled in planning programs across the United States aspiring to help meet this ambitious goal. As students progress through these educational programs, which range from two to three years, they expect to learn what is considered pertinent to the planning profession in preparation for professional practice. Preparation for professional practice requires learning new roles, values, behaviors, and knowledges through a process known as professional socialization. Professional socialization is important because it shapes the professional identity of future practitioners. Educators in professional programs must be aware of how students are thinking about and conceptualizing the profession to ensure they are forming a balanced and coherent view of the professional role. Without balance, educational programs can become too idealistic—creating unreasonable expectations of practice and leaving students mentally and emotionally unprepared for their transition into the profession.

This is the case in planning, where graduates report being disappointed as they start their planning careers and are treated as passive technicians when, as students, they were promised they would be in a position to change the world. Aside from being disappointed with their role early on, a lack of preparation makes it difficult for young planners to serve the public's interest until learning to better navigate their role in the professional world . But what is the planner's role and what creates this mismatch of expectations in the first place? Does the planner's role—or understandings of it—change throughout their career? Insight into these inquiries requires understanding an evolving landscape which spans from the ivory tower of the academy—where planners begin to be formally socialized into the profession—to the surrounding fields—where they assume their roles for practice. To gain these understandings, a mixed-methods pilot study was conducted to describe the values and beliefs of planners at different stages of their career while illuminating experiences that have shaped their professional identity. The study was guided by the overarching question: how does the planner's professional identity evolve over the course of their career? A survey of 150 planning students and practitioners across the United States reveals a spectrum of

planning values that compose contemporary planning's professional identity. Unique identity markers are highlighted at various stages of the planner's career. Self-narratives provide snapshots of the experiences that stand out as having shaped the planner's identity and a glimpse into how planners exhibit agency.

A lack of preparation for practice is of obvious concern for educators—who are tasked with this preparation—but also the students who are seeking professional programs to advance their careers, the practitioners who will work alongside them when they graduate, and their future employers. Future practitioners need resources which provide a deep understanding of the realities associated with being a planner and a balanced and coherent view of planning practice to inform their professional identity. Existing literature fails to broadly consider experiences throughout a planner's career that shape their professional identity. Human science based methodologies used to study professions such as nursing, social work, and education are suitable for this task and allow future practitioners to learn from the rich stories of experiences which shape planners into the practitioners they are. At the same time, insights gleaned from these experiences may help formal education and workforce development programs tweak their curriculum or structure to not only provide students with the skills and knowledge required to succeed in practice, but also make sure they are mentally and emotionally prepared to serve the public good.

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Key Words: identity, values, socialization, phenomenology, mixed-methods

TRACK 14 – REGIONAL PLANNING

TRACK 14 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS FOR THE SESSIONS

CURBING THE POWER OF CITY REGIONS: STATE PREEMPTION AND LOCAL RESPONSE
Pre-Organized Session 50 - Summary
Session Includes 221, 222, 223, 224

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The growing economic importance of city regions has been celebrated as the role of cities has expanded to address issues such as minimum wage, economic regulation and environmental protection at a regional scale. Planners are optimistic about city regions' creative responses, but the last decade has also seen a rise in state preemption of local authority which shifts the landscape of interjurisdictional politics. States can "preempt" local government authority and limit or ban local intervention in many areas, from regulating the gig economy to limiting protection of labor rights. Many of these laws target local regulatory power that threatens industry interests. This session will discuss the implications for regional planning and economic development from preemption of local authority. We will explore the forces driving the rise of preemption. Particular emphasis will be given to implications for regional economic development. Panelists will explore the nature of modern preemption through analysis of interviews with local government experts, surveys and the factors behind labor preemption.

Objectives:

- Audience will learn what is state preemption of local planning authority.
- Audience will learn how city regions perceive and respond to the challenge of preemption.
- Audience will see the specific impacts on labor and regional economic development.

GRABBING MARKET SHARE, TAMING ROGUE CITIES AND CRIPPLING COUNTIES: A LOOK AT STATE PREEMPTION OF LOCAL AUTHORITY ACROSS THE FIFTY STATES
Abstract ID: 221
Abstract within Pre-Organized Session 50

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The last decade has seen a rise in state preemption of local regulatory, revenue-raising and expenditure power (NLC 2018). Local governments are poised to address the concerns and preferences of citizens, and have increasingly taken the lead at regulating markets due to their impact on local economies (the sharing economy), the environment (plastic bags, fracking), inequality (minimum wage, paid leave, broadband access) and public safety (firearms). In turn, states are passing legislation that preempts local ordinances, limits and even removes local authority to address these concerns, and limits their revenue raising authority. Regional planners need to better understand these shifts in state-local relations and the ability to address regional planning concerns.

Because many of these preemptions are industry-related (Hertel-Fernandez 2018), popular narrative frames the growth of preemption as a power struggle between Republican-dominated Legislatures and Democratic urban regions, instigated by the nationwide efforts of conservative groups and industry

lobbyists. But this narrative may simplify the state-local relationship, idealize the role of local government (which has not always been progressive), exclude other institutions affected (such as counties and regions), and ignore the different ways in which preemption has taken place across states. Who are the actors driving preemption?

Because preemption literature largely focuses on cities, we are concerned with its impact at the local and regional level. Counties lack the policy and revenue-raising power of cities, yet they continue to play a critical role as the primary providers of public services – e.g. public works, public safety and welfare services. They are more dependent on property taxes and state aid, which are the target of fiscal restrictions. Property taxes are subject to tax limitations and exemptions, while state aid has fallen significantly after the recession. Simultaneously, states are shifting fiscal responsibilities to the local level (Kim and Warner 2018).

Finally, fiscal penalties (such as withholding shared revenues or grants) can be used as enforcing mechanisms on local governments by states. Will local governments be able to retain and exercise their regulatory role and continue to deliver basic services if their fiscal health is threatened? How can local governments address economic and service access inequalities if preemption is used to protect industry interests?

To identify which policy areas have seen a rise in preemption, the forces driving these laws, and the impact of preemption on local government finance we present results of a qualitative analysis of interviews with fifty-eight local government experts across the fifty states. Major themes identified will be illustrated with case studies on preemption from across the fifty states, and we will contrast our results with the popular narrative surrounding preemption.

Citations

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- Kim, Y. and Warner, M. E. (2018) Shrinking local autonomy: corporate coalitions and the subnational state. Cambridge Journal of Regions, Economy and Society, 11(3), 427-441.

Key Words: preemption, local authority, market regulation, city region

ANTICIPATORY RESPONSES TO PREEMPTION AND REGIONAL KNOWLEDGE NETWORKS: THE CASE OF VIRGINIA AND AFFORDABLE HOUSING POLICY
Abstract ID: 222
Abstract within Pre-Organized Session 50

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In recent years, states have shown an increased willingness to introduce legislation that limits the policy-making autonomy of local governments. Local government actors, both elected and administrative, now operate in a decision-making space in which local legislation on a wide range of issues—from labor standards and civil rights to public health and environmental protection—might be reversed or prevented through preemptive state action. While this shifting terrain has been well charted, what has yet to be systematically explored is the anticipatory response by local government elected and administrative actors to potential changes in state law. How, if at all, do they learn about these changes? And how do they develop strategies to use the policy space remaining available to them?

This paper uses a study of local governments—cities, towns, counties—in Virginia to explore these

questions. Virginia is a compelling context for three reasons. Most important, in December 2019, a proposal was introduced in Virginia that would have required all jurisdictions within the state to allow two residential units on any lot zoned for a single-family dwelling to promote the development of "middle housing" through accessory dwelling units (ADUs) and similarly densification. Second, Virginia is a strong Dillon's rule state without home rule, a setting in which local government actors would be expected to prioritize strong understanding of and education about state law. Third, local governments throughout Virginia are grappling with both a need for more affordable housing and a countervailing pressure from residents to limit its inclusion, meaning that affordable housing policy should be firmly on the radar of local actors. Data were collected using a statewide survey of local elected officials and administrative staff (managers and planners) conducted in January and early February of 2020. Preliminary analysis highlights the relevance of regional knowledge networks—both more formal ones structured around regional intergovernmental organizations, such as planning commissions, and informal ones based on geographic proximity—in disseminating information about preemption and, to a lesser degree, informing potential strategic responses to it.

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Key Words: regional networks, regional development, affordable housing

BLOCKING THE PROGRESSIVE CITY: HOW STATE PREEMPTIONS UNDERMINE LABOR RIGHTS
Abstract ID: 223
Abstract within Pre-Organized Session 50

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Planning practitioners and theorists have long envisioned cities as key for progressive policies that attend to social equity, economic redistribution, and the formation of community-labor coalitions (Clavel 1986). One recent example of this is the "Fight for 15" which illustrates how cities take the lead in protecting labor rights by "scaling up" equity concerns beyond the walls of city hall to also include regional, state, and even national scales (Doussard 2015). Yet, as "creatures of the state" local governments, and by extension planners, derive their power from state-level policies, and progressive cities may be blocked by their states using preemption (NLC 2018; Bravo, Warner and Aldag 2020).

To further complicate the matter, when the Global Recession reached the local scale redistributive services and local economic development were weakened (Kim and Warner 2018). Austerity coalitions were formed to counter local progressive groups, and another related group that is also an important source of preemption laws is the American Legislative Exchange Council (ALEC), a network of state legislators and corporate lobbyists that promotes conservative policies. As a result, planners striving to achieve the ideals of progressive are between a rock and a hard place. What drives the passage of state preemptions that undermine progressive cities? Is there a potential for pushback for planners?

This paper examines recent state legislation that preempts city authority to regulate labor conditions and erodes labor protections in the private and public sector (i.e. minimum wage, paid leave, fair scheduling, right to work, and prevailing wage). We use a mixed-method approach starting with a 50-state regression

model to explore what differentiates states with more labor preemption pulling from a comprehensive nationwide research project (Bravo, Warner and Aldag 2020). Quantitative data are aggregated from a variety of sources such as the Bureau of Labor Statistics, the National League of Cities and the American Community Survey. We find that states with low minimum wages, which have never had strong labor protections, preempt more. Unions can be sources of pushback, as greater unionization is linked to fewer preemptions. However, in Republican controlled states, more unionization is linked to more preemptions. Given these results, we follow this with a case study of Wisconsin under previous Governor Scott Walker who capitalized on both the austerity narrative and rural resentment towards public employee benefits (Cramer 2016). While historically a champion of union power, contemporary state policy in Wisconsin, despite significant public pushback, is undermining labor protections.

What is the potential for pushback? The goal of labor preemptions is to take away the rights, protections, and the funds that enable progressive labor action. By passing legislation at the state level, corporate coalitions have found the weak underbelly in the US federalist system (Kim and Warner 2018). Cities are leading the effort to improve labor rights cross the nation (Doussard 2015), but ALEC is using the subnational state to undermine labor power. And it is working.

However, where one door closes, another opens. In 2018 and 2019 we have witnessed major teacher strikes in large cities like Los Angeles and Chicago but also in states known for being more conservative – Colorado, Oklahoma, West Virginia, and Louisiana. In Wisconsin, Walker was from office by Democrat Tony Evers. Progressive coalitions are building a social movement for change, but they have an uphill battle as state preemption limits city authority and labor rights.

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Key Words: labor, preemption, progressivism, corporations, neoliberalism

PRODUCTIVITY DIVERGENCE: STATE POLICY, CORPORATE CAPTURE AND LIMITS TO REGIONAL POWER
Abstract ID: 224
Abstract within Pre-Organized Session 50

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Income inequality is of growing concern across US city regions. This is driven not only by economic restructuring, but also by shifts in productivity returns towards capital and away from labor. While some states and cities have moved to enhance labor protections and raise the minimum wage, other states are restricting labor rights and preempting local authority to enact labor protections. How do we scale up labor protections in a world of shifting state-local relations? Is there a role for regional action?

We take a multi-scalar approach to differentiate labor and overall productivity of all US counties. Our study of inclusive growth integrates scales of power and politics, government fiscal restructuring, economics and geography. We draw data from the US Census of Government, American Community Survey, Bureau of Labor Statistics and files on labor preemptions at the state level. We then create hierarchical models to control for corporate penetration of state legislatures, Republican control, unionization and decentralization at the state level, and local expenditure, demographics and economic structure at the county level. While the county area is too small to fully capture regional economic development, it gives us a broader geography than city and allows us to also look at rural areas.

We find unionization and local fiscal capacity have positive impacts on productivity, but Republican state legislative control and decentralization have negative effects. Corporate penetration of state legislatures has a negative effect on both labor and overall productivity. We find inclusive growth at the regional scale is undermined by state power. While local governments may attempt to promote inclusive economic development, political power at higher scales can trump local initiative. Implications for regional economic development planning are discussed.

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Key Words: Regional Economic Development Planning, Economic Productivity, Inequality, State - local relations

TRACK 14 – INDIVIDUAL ABSTRACTS

THE SPATIAL STRUCTURE AND CHARACTERISTIC ANALYSIS OF REGIONAL CITY NETWORK FROM THE PERSPECTIVE OF MULTIPLE PASSENGER FLOWS——TAKE GUANGDONG PROVINCE IN CHINA AS AN EXAMPLE
Abstract ID: 33
Individual Paper Submission

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With the continuous advancement of regional integration process, the passenger flows between cities are becoming more and more frequent. Some researchers have found that World City Network can be represented by passenger transport links such air passenger flows to a certain extent, and passenger flows of different modes of transportation, which have a far-reaching impact on the regional development, also have become representative factors to research spatial interaction in regional city network. Guangdong province, where the Pearl River Delta (PRD) urban agglomeration is located, is selected as the main research object. Using the inter-city highway, railway and air transport schedules data (2018), this article explores spatial characteristics of city networks in different research scales according to traffic types. And then, the spatial competition and coordination relationship among networks is analyzed and its enlightenment to the planning is discussed. The following conclusions can be drawn from this study: (1)

The overall structure of highway-based city network is distributed in province, and it is mainly connected within PRD and other subregions, and there are few long-distance highway traffic links across regions. (2) Railway-based city network mainly relies on the zonal distribution of important railway corridors in the region, and Guangdong is closely connected with surrounding provinces by different types of railway, China's high-speed railway construction has a great impact on urban development. (3) Aviation-based city network is a high-level network at national and even world scale, only some airports serve Guangdong Province as regional portals, and closely connected cities outside Guangdong are distributed in major urban agglomerations in China. (4) It is found that the complementary functions of different types of railway network in provincial space have appeared, while the construction of high-speed railway has produced competition and substitution for the aviation and highway's external connection to cities which outside the province. The innovation of transportation mode and the improvement of infrastructure have had a profound impact on the spatial structure of the province, which is conducive to the optimization and development of the spatial pattern of the province. At the same time, different types of passenger transport stations should be reasonably arranged in the region, and build the station which have a variety of traffic modes as regional traffic hubs in big city-region. The study will help decision makers to understand the process of regional integration from the perspective of multiple passenger flows, and pay attention to the important role of regional intercity transport in regional integration.

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Key Words: Multiple Passenger Flows, Spatial Structure, City Network, Guangdong Province, Regional Integration

UTILIZING A UNIQUE DATASET TO EXPLORE HOW REGIONAL ECONOMIC PATTERNS REFLECT BROADER POLITICAL ECONOMIC CHANGES IN GERMANY
Abstract ID: 53
Individual Paper Submission

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This research utilizes a unique dataset of commuting patterns (including in, out and within commutes) for two time periods (2007 and 2017) at the level of municipal association (Verbandsgemeinde) to explore regional economic patterns in Germany. We use the "fast-greedy" method implemented in the R Statistical Programming Language to create in each period 20 communities of highly networked municipalities, identified as economic regions (Nelson and Rae, 2016). The fast-greedy detection algorithm maximizes the modularity value over the entire population of nodes (i.e., municipalities). We analyze these economic regions to explore a number of questions: What is the structure of functional economic urban regions in Germany? Is the historical economic division between eastern and western Germany decreasing with time or does it persist? Are economic regions becoming more or less polycentric and/or monocentric? We find that historical divisions between eastern and western Germany are actually becoming exacerbated over time, as central cities in the east have become stronger (Schmidt, et al, 2017). Furthermore, we find in some German economic regions a trend toward polycentricity, defined by the rank-size slope of the top 10 region members (Burger, van der Knapp, and Wall, 2011).

Corroborating our analysis with employment and demographic data, we argue that these tendencies are a reflection of the economic transformation of a post industrial economy in which increased emphasis has been placed on highly skilled and educated workers, and second, the reurbanization of economic functions to central cities and away from more suburban locations.

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Key Words: economic regions, commuting patterns

SUSTAINABLE COMMUNITIES STRATEGIES IN CALIFORNIA: THE FIRST DECADE
Abstract ID: 120
Individual Paper Submission

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The intent of the Sustainable Communities and Climate Protection Act (SB 375), passed in 2008, was to encourage California achieve its greenhouse gas (GHG) reduction goals through the integration of land use, transportation, and housing. This bill directed the California Air Resources Board to set regional targets for its 18 Metropolitan Planning Organizations (MPOs) to reduce greenhouse gas emissions by 2035. Each region was then required to prepare a Sustainable Community Strategy (SCS) plan to reach these targets. Most California MPOs are now in their second or third iteration of SCS plans. The literature to date indicates that these SCSs have not been highly effective (Barbour, 2002; Barbour & Deakin, 2012; Boarnet and Handy, 2017; Niemeier et al., 2015; California's Sustainable Communities and Climate Protection Act, 2018) We wanted to understand more specifically why this initial generation of Sustainable Community Strategies had or had not been effective, and how such plans might be improved in the future. To achieve this research objective we first analyzed SCS documents of the state's four largest metropolitan areas—the Metropolitan Transportation Commission and Association of Bay Area of Governments (MTC/ABAG), the Southern California Association of Governments (SCAG), SANDAG (the San Diego Association of Governments), and Sacramento Area Council of Governments (SACOG)—with attention to their handling of both GHG reduction and social equity, since the latter is a strong concern of members of the state legislature. We compared SCSs and related Environmental Impact Reports (EIRs) of the four jurisdictions according to how they presented GHG emissions goals, levels, and reduction progress; how they developed and presented policy alternatives; how they linked goals and policies to implementation; how they maintained continuity across generations of SCSs; and how they articulated and responded to social equity needs. We then conducted semi-structured interviews with MPO staff in the four metropolitan regions to provide further insight into SCS implementation challenges. Our preliminary findings are 1) that the plans across the MPOs are very different in nature and presentation, making it difficult to determine these regions' progress toward GHG reductions from land use, transportation, and housing policy; 2) that from the available evidence these plans are currently not meeting their goals for GHG emissions related to vehicle miles travelled; 3) that plans lack continuity of data and analysis across their multiple interactions and do not develop a standard yardstick of GHG reduction progress which the public can understand; 4) that the SCSs make little effort to identify potential implementation processes likely to bring about GHG reductions; 5) that most plans never develop workable definitions of "sustainable community" or address important dimensions of "sustainable community" as agreed upon by the international literature and the United Nations'

Sustainable Development Goals; and 6) that social equity is not addressed in a consistent or policy-relevant way in any of the SCS documents. We develop specific recommendations for how the state's Office of Planning and Research or the ARB might improve SCS preparation guidance for MPOs to address these deficiencies. We also discuss potential elements of a more successful Sustainable Community Strategy planning framework for the state that might better meet the intent of the original legislation.

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Key Words: Sustainable community strategies, regional planning, SB 375, carbon emission reduction, social equity

RESEARCH ON THE CITY NETWORK EVOLUTION OF CHENGDU-CHONGQING URBAN AGGLOMERATION FROM THE PERSPECTIVE OF INFORMATION FLOW
Abstract ID: 535
Individual Paper Submission

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In recent years, the research trend of urban regional space is to shift from the paradigm of centrality to that of urban network. The research practice of urban network can be divided into two categories according to the main body of the research: one is the urban network constructed by the entity flow elements; The second is the city network built by the data of the relationship between cities. Nowadays, the world has entered the Internet era, and the flow of information promotes the efficient regional communication of other elements.In order to better reflect the human nature and dynamic development needs of planning, we consider starting from the Internet search index of people to other cities to explore the urban network characteristics and its evolution from the perspective of inter-city information flow.Based on the theory of space of flow, the paper uses "Baidu Index" to represent the inter-city information flow connection, constructs the information-based city network of Chengdu-Chongqing urban agglomeration in 2012, 2015 and 2018, and compares its evolution characteristics. At the same time, combining with planning policy and statistical data, this paper analyzes the development of spatial structure in Chengdu-Chongqing urban agglomeration. The main conclusions are as follows: （a）from the perspective of the overall evolution of the city network, Chengdu-Chongqing urban agglomeration shows the trend of dual-core leading by Chengdu and Chongqing, and the overall network is characterized by unbalanced features; （b）Compared with the spatial structure goal put forward by "planning", the core status of the two central cities, the development pattern of the axis and the distribution of dense urban areas are basically consistent with the analysis conclusion of information flow city network,but development of secondary areas, such as city and town concentrated areas in planning, is still weak; （c）The correlation between the level of economic and cultural development and the degree of Internet

attention is higher than the size of the population, which reflects the importance of "soft power" in cities.With a developed economy, especially in regions with developed tertiary industries such as scientific and technological innovation and cultural tourism, the attention of other cities will be high even if the population is small,thus,we should pay attention to the city's popularity in the field of Internet; () From the perspective of information flow, although the information gathering capacity of the two metropolitan areas will still rise in the short term, it is still necessary to promote the factor gathering and interaction capacity represented by information flow of each urban belt and other cities in the urban agglomeration area, so as to lay a solid foundation for the network pattern of urban agglomeration.

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Key Words: City Network, Space of Flow, Information Flow, Baidu Index, Chengdu-Chongqing Urban Agglomeration

BEYOND PLANS: SCENARIO PLANNING AS A TOOL FOR REGIONAL CAPACITY BUILDING
Abstract ID: 593
Individual Paper Submission

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This paper is an investigation of how regional scenario efforts shape local plans and planning agencies across diverse U.S. regions. Scenario planning holds great promise as a tool for addressing regional fragmentation. Through creatively imagining the future impacts of current decisions, scenario planning efforts seek to support more sustainable, less-sprawled, and more economically just regions. Regional goals are expected to be achieved through better understanding of future uncertainties and interdependence among stakeholders, and greater conformance of subsequent local decisions. Yet we know relatively little about how regional scenario efforts impact local planning practices. Most research on regional scenario efforts focus on accuracy of growth models, or assessment of their impacts. Studies show little impact on local land-use policy changes, except when such decisions suit local interests (Chakraborty & McMillan, 2015; Goodspeed, 2017). However, these assessments are often based on single case studies (Allred & Chakraborty, 2015) and offer limited assistance in understanding the impact and value of regional scenario efforts.

To address this gap, we investigated scenario planning efforts within six U.S. metropolitan areas of varying size, regional location, and history of scenario planning. Within each region we analyzed a recent regional effort which employed scenarios, examining the scenarios' structure and use within the plan. Then, we examined local comprehensive plans within a smaller sub-sample of municipalities, analyzing and coding 60 local comprehensive plans to understand how the regional scenario effort informed local plans. Following this was a third confirmatory phase, during which we interviewed regional planners, local elected officials, local planners, and other major scenario planning stakeholders across the sub-sample's regions.

The first two document analysis phases brought to light scenario plans' strengths, and notable weaknesses in shaping local plans and planning institutions. Regional scenario efforts used diverse normative, predictive, and exploratory scenarios (Börjeson et al., 2006). Most of the regional scenario planning efforts were part of regional transportation plans, and public finance appeared as a contingency across all plans (though, notably, was not an output within the scenarios). Scenario planning processes entailed extensive public engagement across their regions. Yet when analyzing recent comprehensive plans of the 20 largest suburbs within each region, we found zero mentions of the regional scenario planning effort. Only one suburban municipality used scenario processes within its sub-areal plans. However, the interview phase identified new promise for scenario plans. While regional scenario planning efforts did not appear to affect local plans, they did influence regional and local planning institutions. Through stakeholder interviews, we identified how regional scenario efforts, when combined with concerted public outreach, can help re-shape the mandate and structure of regional planning agencies; help local planning institutions address challenges to regional resilience; and create new regional partnerships to address future urban planning issues.

Our research unearths three related takeaways. First, regional planning agencies should consider how the scenario planning process can shape not only the region, but the relations within and between local and regional planning organizations. Scenario planning can entail path-breaking institutional changes (Sorensen, 2017), not only planning models for understanding future effects of present actions. Secondly, to ensure these outcomes requires concerted public engagement by the MPO or RPC that leads these scenario efforts. In those rare instances where localities used scenarios within their local plans, we found that regional-local partnerships remained crucial to these outcomes. Third, while regional scenario plans may not affect local plans, they can be used by regional and local organizations to affect institutional changes (Hopkins, 2012) at different scales.

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Key Words: scenarios, regions, institution, capacity building

MEGAREGIONAL DISPARITIES: MEASUREMENT AND POLICY CHALLENGES IN THE PRESENCE OF MODIFIABLE AREAL UNIT PROBLEM
Abstract ID: 602
Individual Paper Submission

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Reducing regional disparities (or inequalities) has long interested international agencies like The World Bank and IMF as well as the national, subnational and regional organizations in countries around the

world. Disparity challenges are often addressed by focusing on specific socio-economic aspects, for instance, income, education, and infrastructure services. They may also be approached in different spatial scales in which regions can be defined at the global, national, and community level. Properly identifying and measuring the severity of disparities is the first step towards effective policy actions to tackle disparities. This paper presents a study on disparities from a megaregional perspective, investigating in particular the measurement issues associated with the Modifiable Areal Unit Problem (MAUP).

A mgaregion, also called "mega-city region", "super-city region", or "city-cluster region" in different country contexts, refers to a large agglomeration consisting of two or more networked metropolitan areas and their hinterlands. In the past two decades megaregion research has received a worldwide interest from scholars and policy-makers. This growing interest in megaregions comes from a shared observation that megaregions concentrate people, jobs, and capital and play a decisive role in the increasingly competitive global economy. Widening gaps among the constituents of a megaregion could weaken its competitiveness. There are precedents and ongoing efforts to reduce disparities and promote balanced development from a large-scale geographical scope. Examples of such efforts include the European Spatial Development Perspective and the Northern Powerhouse in the United Kingdom (UK). Disparities within a megaregion in various spatial dimensions also deserve a thorough investigation. Multi-dimensional disparities may occur between large metropolitan areas and small communities, between urban and rural counties, and between locations with rich and poor transportation and service access. Investigating the multi-dimensional disparities of megaregions will unavoidably encounter the challenge of the MAUP. The MAUP refers to the sensitivity of analytical results to the definition of the areal unit from which data are reported and measures are derived. Presence of the MAUP can cause serious inconsistency in outcome measurements and analytical results, and consequently lead to contradictory conclusions and possibly misinformed decisions.

This study sets two objectives. The first is to benchmark the conditions of disparities/inequalities in 39 megaregions from the United States, Europe/UK, and Asia/China. The second is to examine the MAUP by measuring disparities at the metropolitan and city/county level in three selected megaregions, the Texas Triangle from the United States, the Northern Powerhouse (NPh) from Europe/UK, and the Mid-Yangtze River city-cluster region from China. The selection of the three cases considers that they share a similar spatial pattern of polycentric agglomeration. The Texas Triangle is spatially portrayed by three sets of anchor cities: Dallas-Ft. Worth to the north, Houston to the southeast, and Austin-San Antonio to the southwest. Similarly, the Mid-Yangtze River City-Cluster Region (China) is characterized by the capital cities of three provinces, Wuhan, Changsha, and Nanchang in a triangle setting. The region has thus earned the nickname of the Central Triangle. The NPh region consists of five approximately equally sized cities and does not have a single dominant city like London in the south of England. Its regional spatial pattern also displays a triangular shape, with Newcastle located on the north apex and other cities aligned with the base lateral.

The study applies the commonly used disparity measures: Gini coefficient and Coefficient of Variance (CV) of GDP and employment. Data used for the study come from the census reports or urban and regional statistics in respective countries. The study results are expected to improve understanding of the dimensionality of regional disparities and to inform policy debates on place-based strategies to reduce disparities.

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TITLE: THE IMPACT OF ECONOMIC GROWTH ON SOCIAL EQUALITY AND WELL-BEING: BUILDING A SYSTEM OF PUBLIC POLICY EVALUATION INDICATORS AS A MEANS FOR REDUCING INEQUALITY AND SOCIAL EXCLUSION
Abstract ID: 808
Individual Paper Submission

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Regions are always seeking to attract and retain economic activity in order to achieve growth and prosperity. Regions today see a variety of high-tech activities and the visitor economy as their road to growth under the assumption and expectation that a significant trickling down effect will follow. (Markusen et al. 1999) Economic development policies and strategies are implemented to create a favorable environment for business and investment. However, prosperous economies often struggle with growing inequality and expanding social exclusion. Opportunities for advancement and prosperity are not always equally accessible to all. Consequently, not only does the income gap grows but also a new poor class seems to emerge from what used to be the middle class.

Although the issue of redistribution is often at the forefront of the political debate, public policy decisions geared towards attaining "economic development", are frequently limited to goals of economic growth, for which longstanding indicators are available and periodically measured. (Picketty 2015) Repeatedly, decisions over social policy and economic policy are completely disconnected. Furthermore, social problems, such as increasing unemployment, social displacement, unequal access to opportunities, are at least partially the result of economic- and fiscal-policy-making processes that failed to assess the impact over vulnerable groups and provide alleviation measures for externalities.

A just society should improve living conditions and opportunities of advancement for all citizens. (Picketty 2015) Economic-development-policy goals and objectives then cannot be limited to improving economic-growth indicators, but also ought to consider the impact over social indicators prior to approval, during the implementation progress, and its final results, and provide for mechanisms that reduce vulnerability to exclusion. This would not only contribute to providing an institutional environment that is more conducive to increased equality and societal wellbeing, but also provide a more transparent and accountable decision-making process.

A challenge for this assessment is the lack of adequate, reliable, practical information that could be incorporated into the decision-making criteria when evaluating policy proposals, as decision making is often limited to what can be and is measured. Several regions and countries have implemented methodologies and systems of indicators to track progress in human development, equality, social inclusion, among others. In few of these the results inform policy decisions regarding economic and fiscal issues and the socioeconomic agenda for the country or region.

This paper looks at the experiences in several countries and regions where such methodologies and indicators have been developed with the following objectives:

- To understand what were the conditions that led to the need for and the design and implementation of these indicator systems.
- To identify the phenomena that these indicator systems try to measure, how they are defined, and their relevance to the country's or region's changing context.

- To evaluate the effectiveness of the indicators in tracking progress in equality, social inclusion, among others.
- To assess the institutional requirements for its design and implementation; and,
- To analyze the impact over public-policy decisions. This involves a case study comparison combining several levels of quantitative and qualitative analysis, including:
- A timeline of the history that led to the design and implementation of the indicator system at each country or region.
- Assessment of the validity, pertinence, and reliability of the indicators.
- System cost-effectiveness analysis.
- Organizational-effectiveness and resource-allocation-efficiency evaluation, through visits and interviews with agency officials, as well as official-organizational-document review.
- Assessment of the relationship of indicator-system implementation with equality changes and economic growth. It tests whether these systems of indicators effectively inform the policy decision making process, and can reduce inequality and social exclusion, spreading the benefits of development. The results provide useful insight that can inform equivalent processes in other countries or regions.

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Key Words: Social Inequality, Public Policy Evaluation, Social Indicator Systems, Economic Growth, Social Displacement and Exclusion

THE SOCIAL DIMENSION OF THE IRON QUADRANGLE REGION: A GEODESIGN EXPERIENCE
Abstract ID: 851
Individual Paper Submission

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Mining brings positive and negative changes to residents of regions that are heavily dependent on such economic activity. The state of Minas Gerais, in Brazil, is an example of such a region, with an average of 6% of its value-added GDP represented by the extractive industry (2010-2017). Minas Gerais has one of the largest regions that produces iron ore in the world – the Iron Quadrangle, which leads 65% of the Brazilian iron steel production. However, mineral exploration also causes environmental problems such as the 2019 collapse of the Córrego do Feijão dam in Brumadinho. Belo Horizonte, the state's capital and the most populous urban area in MG, is located in the Iron Quadrangle. This complex regional arrangement results in various conflicts of interest between different stakeholders and, consequently, entails challenging decision-making processes regarding mining activities.

The mining industry affects environmental, economic, and societal dimensions of extractive regions. The social dimension, which is the focus of this study, has been explored through a variety of themes such as

poverty/income and employment, health and wellbeing, and infrastructure. The social dimension of the Iron Quadrangle Region, and the complex decision-making processes that align with this dimension, is the topic of this study.

Geodesign can be used to support decision-making processes of different planning-related topics. According to Steinitz (2012), "geodesign is an ongoing process of changing geography by design" (p. 91), based on the interaction between design professions, the people of the place, information technologists, and geographic sciences. His proposed framework has six main questions and six corresponding models: (1) How should the study area be described? (answered by representation models); (2) How does the study area operate? (answered by process models); (3) Is the current study area working well? (answered by evaluation models); (4) How might the study area be altered? (answered by change models); (5) What differences might the changes cause? (answered by impact models); and (6) How should the study area be changed? (answered by decision models).

Several studies have demonstrated advantages of applying geodesign to mining-related decision-making processes (Janssen & Dias, 2017; Jingyi & Menghan, 2018; Porrà, Ranieri, Trogu, & Calcina, 2014; Thanatemaneerat, 2015; Huang & Zhou, 2016; Perkl, 2016). Mining, like many other land uses, presents a variety of complex relationships between the land, environment, social and economic circumstances, and stakeholders. Therefore, a design process that prioritizes public participation and interdisciplinary collaborations is critical. The visual, interdisciplinary, and adaptive tools that geodesign offers provide accessible pathways to effective public engagement, allowing comparison and assessment of potential losses and benefits of landscape design choices. Moreover, stakeholder values and knowledge, which are critical in conflicts and conversations concerning mining activity, are integrated into geodesign processes through bottom-up participation practices.

This study presents a geodesign experience that took place in the fall of 2019 in an undergraduate class at the Federal University of Minas Gerais. Using the Iron Quadrangle Region as the study area, 15 undergraduate students applied Steinitz's six main questions and six corresponding models to understand the social dimension in the region. The platform Geodesign Hub, a collaborative planning support system, was used in the class. This case study contributes to the literature on geodesign and mining applications by demonstrating obstacles and benefits of using this framework.

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Key Words: geodesign, Brazil, regional economic development

THE CITYHOOD MOVEMENT AND ITS INNOVATIONS IN POLITICAL AND RACIAL RHETORIC
Abstract ID: 894
Individual Paper Submission

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The 'Cityhood Movement', a wave of incorporations primarily among affluent suburban communities in the South, is rapidly changing the balance of power and resource distribution in metropolitan regions. The codification and concentration of political authority in local hands promises to have a dramatic effect on how counties provide for their low-income residents, as well as how wealthy enclaves control their contributions to regional prosperity. The rhetoric used by incorporation advocates to garner local support frequently simplifies and ultimately dismisses the tension between these competing priorities. Language appealing to abstract notions of freedom, self-determination, individual liberty, and responsible governance is deployed, exciting residents who often chose homes outside of the city because of the freedoms that unincorporated areas purport to offer. These appeals to revered American values seem, on the surface, to be broadly beneficial to all residents, regardless of which side of the new incorporated city limits one finds themselves. However, despite the popularity of these virtues, the result has most often been new cities that are more white, more affluent, and more exclusionary. Careful scrutiny of many incorporation campaigns reveals that much of the rhetoric invokes these values in order to justify the building of political and social barriers to accountability in diverse metro regions. This paper will discuss the use of carefully tailored, highly evocative political language in the Cityhood Movement to legitimize and promote incorporation efforts. I argue that the rhetorical framing during these campaigns frequently utilizes implicit racial language, which has the potential to simultaneously provoke suburban hostility against urban minority residents and mask this hostility by pairing it with legitimate conservative political priorities. The analysis utilizes two case studies: Sandy Springs, Georgia, a well-established city just outside of Atlanta which is widely seen as a model for incorporation and innovative administration efforts; and St. George, Louisiana, formed from the unincorporated outskirts of Baton Rouge, which is currently facing a concerted legal challenge to its successful incorporation referendum. Using content analysis of local print and online news sources as well as social media, government, and advocacy websites, this research will decipher the language and imagery used by advocates and organizers to garner public support. An engagement with Critical Race Theory and Stratification Economics literature will provide a framework through which to evaluate these forms of public speech. These theoretical approaches will enable a discussion of how wielding language, ranging from barely disguised racial dog-whistles to appropriated Civil Rights terminology, can be potentially effective in focusing longstanding outgroup hostility for the purpose of political action. Lastly, this paper will briefly discuss the broader implications of the success of such appeals in facilitating this incorporation trend.

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Key Words: Incorporation, Rhetoric, Cityhood, Suburban, Race

URBAN NETWORK SPATIAL STRUCTURE BASED ON UNICORN ENTERPRISE RELATIONSHIP: A CASE STUDY OF THE YANGTZE RIVER DELTA URBAN AGGLOMERATION, CHINA
Abstract ID: 954
Individual Paper Submission

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The growth of the knowledge economy and technology has led to the regional spatial structure changing from single-center to multi-center and networking. Based on the data of headquarters and branches of unicorn enterprises, this study builds up the urban network to understand the industrial pattern and city functions from the perspective of new economy. This study explores the characteristics of the urban network formed by unicorn enterprises in 26 cities in the Yangtze River Delta urban agglomeration and further examines the regional external relations, including national and global relations. The empirical results show that: (1) The distribution of headquarters and branches of unicorn enterprises also reflects the location selection model of advanced producer services enterprises. (2) The Yangtze River Delta urban agglomeration has become a regional urban agglomeration with dense internal connections. Each city has distinct hierarchical characteristics and the region presents a multi-center trend. (3) Shanghai and Hangzhou are the main gateway connecting the Yangtze River Delta urban agglomeration with the global service network. The cities in the Yangtze River Delta urban agglomeration are closely related to other cities in China, and the main network links are concentrated in the eastern part of China, in contrast with few interactions with the western cities. (4) Influenced by market and system, many unicorn enterprises regard Beijing, Shanghai, Hangzhou, Shenzhen and other important global cities in China as the birthplace of growth and innovation. (5) Unicorn enterprises tend to have geographical proximity and social and cultural similarity when expanding, and the urban connections of Asia and South America shows the outward trend of Chinese unicorn enterprises in expansion. This research also sheds light on the future quantitative analysis of urban financial networks.

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Key Words: unicorn enterprise, urban network, Yangtze River Delta, urban agglomeration, new economy

MEASURING POLYCENTRIC URBAN SPATIAL STRUCTURE AND JUSTIFYING ITS PROMISED BENEFITS TO URBAN DEVELOPMENT
Abstract ID: 967
Individual Paper Submission

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The polycentric spatial development has become a popular topic in both academic literature and spatial planning strategy for cities and metropolitan areas worldwide. In 1999 the European Spatial Development Perspective (ESDP) clearly advocated the polycentric regional configurations as the approach to achieve multiple goals, namely more efficient, balanced and sustainable spatial development patterns (Burgalassi 2010), and that marks the transformation of polycentricity from an analytical tool to a normative agenda in professional planning (Davoudi 2003). In Asian countries such as China, Korea, and Japan, we also witness a wide spectrum of spatial plans resonate the EPSD and deliberately search after the ideal "polycentric urban patterns," for example, the spatial development of subcenters in the Beijing and Seoul metropolitan areas (Liu and Wang 2016).

Despite its widespread popularity in spatial planning, however, there still exist two major disconnections between polycentric research and its implementation in professional planning. The first one refers to the vagueness of the concept of polycentricity in the theoretical framework due to its multi-scale nature and the complicity in measures (Meijers 2008) that restricts its development to be conceptualized in spatial

plans. The second one relates to the lack of conclusive empirical findings to justify the assumed benefits of polycentricity being realized in planning practices (Davoudi 2003). These disconnections are dangerous for planning policies because the outcomes of a polycentric spatial plan may produce unintended effects that significantly depart from the original objectives, and thus potentially results in the plan's failure.

This paper, therefore, contributes to the current debate of polycentric spatial planning in two aspects. Firstly, we summarize the concept of polycentricity given by the former researchers in different countries and at multiple planning scales and discuss the strength and weakness of the measures they used. This work will not only enable professional planners to crystalize the polycentric pattern they want to achieve in planning practices, but also guide future research the measures of polycentricity in terms of planning scales and data availability. The second part focuses on the assumed benefits of polycentricity proposed by EPSD in boosting economic efficiency, reducing regional disparity and improving economic sustainability. The assumed benefits seem to be contradictory to each other and impossible to achieve simultaneously according to economic theories. This lack of solid theoretical explanation as well as empirical justification have instantly led the polycentric hypothesis into large debate since the day it proposed. The paper, therefore, tracks the arguments developed by both sides of the debate to explain the promised advantages and the challenges that undermine its validity. Our findings, therefore, will provide insight into the rationale of polycentric urban structure and hopefully guide the future empirical works that seeks to justify its assumed benefits.

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Key Words: Polycentric Spatial Structure, Measures of Polycentricity, Explanation and Justification

RESEARCH ON THE SPATIAL CHARACTERISTICS AND COORDINATED DEVELOPMENT OF THE BEIJING-TIANJIN-HEBEI RURAL AREAS
Abstract ID: 983
Individual Paper Submission

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With "urban era" coming, there becomes a significant gap between urban-rural development in China. The government proposed to implement the rural revitalization strategy. In China, the rural development path pays attention to the single-village and ignores the regional coordinated of rural areas. Researches have focused on the small and medium-scale rural areas, lacking studies on large-scale rural areas. Few researches focus on the organizational structure characteristics of rural space from the regional perspective.

As one of the three largest urban agglomerations in China, Beijing-Tianjin-Hebei region is in a state of more imbalance of urban-rural development compared with Yangtze River Delta and Pearl River Delta. The polarization effects of the two mega-city nodes, Beijing and Tianjin, are much larger than the diffusion effects, and rural areas in the region need to join the overall regional coordination based on their

spatial characteristics. There is less relevant literature on the spatial analysis. Therefore, this paper concludes the spatial characteristics of Beijing-Tianjin-Hebei rural areas and explores the coordinated path in the process of rural revitalization.

The paper takes space "pattern" and "interaction" as the dual research perspectives to analyze the current characteristics and problems of Beijing-Tianjin-Hebei rural areas. Rural areas contain ecology space, living space and production space, and the paper describes the space pattern characteristics from the three kinds of spaces. The paper analyzes rural space interaction based on gravity model to present the rural development relationships between 188 counties and districts of Beijing-Tianjin-Hebei region. The analysis uses ArcGIS, Ucinet and SPSS software mainly based on the data from statistical yearbook.

Through the comprehensive analysis, the research results show that:

(1) In the aspect of rural space pattern in Beijing-Tianjin-Hebei region, the ecology space provides natural environment for rural development. The rural ecological environment needs improved, and the local governments focus on villages greening, which deviate from the integrity of the regional ecology space. Rural living space is distributed in the form of settlements, the living condition in southeast is generally better than northwest, but the public service is insufficient even in rural areas of Beijing, reflecting the lack of systemic supply to meet the needs of rural residents. Rural production space is closely related to production and industrial activities, heavily relied on external resources, and endogenous power of rural production need stimulated.

(2) In the aspect of rural space interaction, the research evaluates the rural development of 188 counties and districts, including population, economy, land and public service factors, and builds rural network based on gravity model. The rural development is imbalanced and the rural space links closer in southeast. The gravitational centers are uneven, which are prominent around Beijing and Tianjin, and their radiating effects are limited only for nearby rural areas. The overall network has not yet matured, and the interaction is not obvious in the network, lacking economic and social link.

(3) Based on the spatial characteristics, the paper makes some discussion on the coordinated development path of Beijing-Tianjin-Hebei rural areas and proposes the county as the basic area for rural revitalization, which helps to realize resource arrangement, functional organization and collaborative governance of towns and villages. Meanwhile, the ecology space acts as environmental base to improve the integrity pattern. The living space acts as nodes to build towns and villages systems at different levels with hierarchical allocation of public service facilities. The production space acts as connections to form rural industry clusters and promote the development of surrounding areas. Through the rural space reorganization in Beijing-Tianjin-Hebei region, the three spaces are networked in order to improve the comprehensive value of rural areas and join the overall urban-rural integrations.

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Key Words: Spatial characteristics, Coordinated development, Beijing-Tianjin-Hebei region, Rural areas

MEDIATING THE IMPACTS OF LOCAL FLOODING IN THE MISSISSIPPI-ALABAMA COASTAL REGION THROUGH GREEN INFRASTRUCTURE PLAN EVALUATION

Abstract ID: 1037
Individual Paper Submission

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Urban ecosystems are increasingly at risk of being damaged by rapid urbanization. The rapid expansion of urban areas in coastal communities, in particular, will likely lead to the conversion of undeveloped land into impervious surfaces, which degrades ecosystems and exacerbates flooding. In order to minimize these negative impacts, some local governments have adopted "green infrastructure" plans and strategies in order to conserve and protect their natural resources, such as greenways, wetlands, and open spaces. This research: 1.) identifies communities that have engaged in green infrastructure planning in the Mississippi-Alabama coastal region; 2) identifies best practices among those communities; and 3) identifies landscape patterns that should be protected with the goal of transferring this knowledge to other coastal communities. This research specifically focuses on the cities of Mobile, Gulf Shores, Orange Beach, and Prichard in Alabama; and Biloxi, Gulfport, Oceans Springs, D'Iberville, and Pascagoula in Mississippi.

This research uses both quantitative and qualitative methods in order to examine current green infrastructure planning practices and their outcomes in the Mississippi-Alabama coastal region. Specifically, the comprehensive plans of the 9 cities are analyzed in order to assess if and the degree to which they have incorporated green infrastructure planning strategies. This assessment is based a plan quality scorecard focused on green infrastructure planning. An online survey and interviews with planners in these 9 cities were conducted in order to understand their planning capacity and experiences, and to identify which specific factors are associated with municipalities' integration of green infrastructure concepts into planning. Further, regional and local landscape patterns are analyzed for over 1200 small watersheds in the coastal region using GIS tools (Fragstats) to determine their impact on stormwater runoff. The methodology innovatively applies the Soil and Water Assessment Tool (using ArcSWAT) using inputs of DEM, land use data, soil type data, weather data, and observed discharge data (used for calibrating and validating the model).

Preliminary findings suggest that the majority of municipalities in the Mississippi-Alabama coastal region have integrated on a limited basis green infrastructure planning strategies into their comprehensive plans. Higher levels of planning capacity is associated with higher levels of green infrastructure incorporation, but there remains many barriers to incorporation and implementation.

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RETAIL AND LIGHT RAIL: INVESTIGATING THE RELATIONSHIP BETWEEN TRANSIT-INDUCED INTENSIFICATION AND RETAIL GENTRIFICATION IN WATERLOO REGION
Abstract ID: 1043
Individual Paper Submission

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In response to the back-to-the-city movement of the 2000s, planning policy has shifted towards models of recentralization. Under these ideals, municipalities are encouraged to create integrated transportation networks and encourage compact, mixed-use development in core areas (Filion, Kramer & Sands, 2016). In efforts to revitalize downtown neighbourhoods and attract new residents and investment, many municipalities are investing in large scale infrastructure projects, such as light rail transit (LRT). Concurrently, the field of transit-induced intensification research is growing, and there is increasing evidence that LRT projects and their associated transit-oriented development (TOD) can induce gentrification in surrounding neighbourhoods.

Gentrification is the process of socioeconomic neighbourhood transformation where new capital and residents (with higher socioeconomic status) enter a low-income, working class neighbourhood (Meltzer, 2016). Transit-induced gentrification research is predominantly addressed through a housing lens, however, gentrification can also occur in retail landscapes, as incoming residents have different consumption patterns (Chapple et al., 2017). Retail gentrification, therefore, is the process of business displacement that occurs through changes in consumer demand or increased rents due to higher demand for store frontage (Meltzer, 2016). Through this process, higher-end and chain stores move into a neighbourhood and displace small, locally owned stores (Meltzer, 2016; Hubbard, 2018). As this process continues, low income and minority groups will find it increasingly difficult to access goods and services in core areas.

Since the approval of the Region of Waterloo's ION LRT project in 2011, the transit corridor appears to be undergoing gentrification. The corridor is currently experiencing a development boom, with high-end condo towers replacing live-work buildings occupied by locally owned shops and affordable apartment units. The area's demographics are also changing, as young professionals and retirees are buying new condo units (Huang, 2020). Through this redevelopment process, many business owners have reported decreased customer traffic (even post-construction), and displacement due to rising rents and renovictions.

The research presented in this paper is part of a larger mixed-methods study, which aims to answer the following questions: 1) Has the retail composition of the transit corridor changed between the approval and launch of the Region of Waterloo's ION LRT system? If so, what effects are seen (e.g. spatially, to business size, type, ownership, etc.)? and 2) Do these changes represent retail gentrification? If so, how?

This paper reports results from an analysis of the Region of Waterloo's Workplace Count data collected in 2011, 2016, and 2018. We examine how retail has changed throughout the Region by classifying businesses according to a variety of variables (e.g. North American Industry Classification System [NAICS], number of employees, business size, year established). Analysis results demonstrate what retail conditions are emerging in the corridor, and whether they are occurring exclusively in the corridor or are part of a Regional trend. Findings are compared with relevant case studies to determine if changes observed represent retail gentrification. Results of this study contribute to the limited body of transit-induced retail gentrification literature and will help inform planners and policymakers in other mid-size municipalities considering LRT.

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Key Words: gentrification, transit, intensification

THE NEW JURISDICTIONAL GEOGRAPHY OF SUBURBAN POVERTY IN US METROPOLITAN REGIONS
Abstract ID: 1102
Individual Paper Submission

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The suburbanization of poverty in metropolitan areas of the U.S. in recent decades is well documented (Kneebone and Berube 2013, Allard 2017). Less well understood is the jurisdictional geography of suburban poverty, with its implications for regional planning and governance. The location of poor populations in small and large suburban incorporated cities and unincorporated areas has implications for service provision, public and nonprofit sector capacity, and federal block grant eligibility. (County governments determine the distribution of block grant dollars to cities under 50,000 people, while those over 50,000 are automatically entitled). In some cases, cities and service districts intentionally exclude or fail to annex areas with low-income populations (Durst 2014). As poverty grows in areas outside of the largest cities in a metro area, is it growing in small (non-entitlement) or large (entitlement) suburban cities? Our study shows divergent trends between different US census regions using decentennial Census and American Community Survey population data from 1990 to the mid-2010s (Mattiuzzi and Weir 2019). Is suburban poverty growing in a handful of cities or is it spread evenly across suburban areas? Traditional measures of "concentrated poverty" focus on the census tract as a unit of analysis (Jargowsky 1997). Our study introduces a new metric for what we call "high poverty" suburban cities—those that have a significantly higher poverty level than their respective metropolitan poverty rate in a given year—that is still sensitive to economic cycles and the relative strength of different metro area economies. Again a picture emerges of suburban poverty—and its jurisdictional makeup—that looks different in different parts of the US. We further analyze the racial and ethnic makeup of areas where suburban poverty has grown. From these results, questions emerge regarding variation within census regions, tract level poverty concentration within suburbs that are not high poverty under our metric, and city/regional disparities in resources. Understanding the jurisdictional contours of suburban poverty will be important for regional planning and governance that address a range of social and political issues for the suburban poor.

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Key Words: suburbanization of poverty, regional governance, concentrated poverty, federal block grants, service capacity

SOCIOECONOMIC INEQUALITIES OF SMART CITIES: CASE STUDY OF SMART CITY SONGDO
Abstract ID: 1134
Individual Paper Submission

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The concept of smart cities is comparatively new, so the impact of smart city projects has not clearly defined. In particular, the negative effects of smart city projects have not been concerned. In perspective of the planning business, smart city projects are ultimately a new city-making industry that comes with an array of interests and capabilities between a partnership of developers, investors, government, and the information technology industry (Frenchman et al., 2011; Townsend, 2013). For their interests, stakeholders have been outsourcing smart city projects to private consulting firms and technology companies and seeking commercial values for customers instead of citizens. Eventually, seeking profits of the development projects may result in causing negative effects such as inequality of economic resources and social welfare. This study, therefore, has examined socioeconomic inequalities of smart city projects and surveyed the awareness, satisfaction, and needs of citizens of smart cities.

Although smart cities has no universal definition (Caragliu et al., 2011; Albino et al., 2015), the most comprehensive way to define smart cities that found from existing literature is cities that utilizes technologies to improve the urban functions, including sustainability and livability, for the overall urban benefits such as people, economies, environments, and most of the urban concerns. As technological advances have made the life of people better, scholars have assured that smart cities will improve citizens' quality of life (Eger, 2009; Chen, 2010; Caragliu et al., 2011; Ballas, 2013; Pellicer et al., 2013). Meanwhile, the concept of smart cities appears excessively perceived as a quite sought-after urban planning strategy. As defined, smart cities will undoubtedly improve the quality of life of citizens, but there will be underprivileged people. Songdo is one of the commercially developed smart cities that is having issues such as underpopulation, high vacancy, expensive living costs, and inequalities.

Songdo was one of the first and largest smart cities projects that developed in the city of Incheon. Songdo developed ubiquitous computing infrastructure systems for urban functions and the integration of information systems for the social systems to improve the quality of life. Meanwhile, Songdo also developed fancy high-rise buildings and apartments for commercial values and became a wealthy neighborhood. As a result of examining 2018 Korea Housing Survey, we found that housing and living costs in Songdo are higher than surrounding areas, and there are socioeconomic inequalities.

The smart city project Songdo is still in the proceeding, and the regional government is promoting to invest additional smart infrastructure to make the city smarter. There is no universal solution for the success of a city in its path towards smartness, and smart city project requires taking account of different aspects (Pellicer et al., 2013). Using smart technologies may help to improve the quality of life, but it can also exacerbate the inequalities of the city (Odendaal, 2003). Therefore, consideration of people can be one of the key factors to lower inequalities and improve the sustainability and livability of the city instead of technologies.

The objective of this study is to understand the socioeconomic inequalities of smart cities from the case of Songdo. In this study, we examined the characteristics of households and found socioeconomic inequalities. We also surveyed and interviewed households in Songdo and found their awareness of smart cities, residential satisfaction of living in a smart city, and their needs to understand comprehensively. This study uses primary data from the survey and secondary data from 2018 Korea Housing Survey. The results of the study will help to understand the negative effects of smart city projects and contribute to establishing the people-centered smart cities and smart city projects.

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Key Words: smart cities, smart city projects, socioeconomic inequalities, uneven development

CLIMATE ACTION AT A TIPPING POINT? ASSESSING THE INFLUENCE OF STATE MANDATES FOR GHG REDUCTION ON SPENDING PRIORITIES IN MPO TRANSPORTATION IMPROVEMENT PROGRAMS
Abstract ID: 1172
Individual Paper Submission

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California and Oregon are over a decade into the most ambitious efforts in the United States to reduce greenhouse gas (GHG) emissions from the transportation sector, but the impact of these pioneering laws remains unclear. The California legislature passed the Sustainable Communities and Climate Protection Act (SB 375) in 2008, while Oregon's legislature approved a key portion of the Oregon Sustainable Transportation Initiative (SB 1059) in 2010. Both laws task metropolitan planning organizations (MPOs) with coordinating land uses and transportation investments to reduce per capita levels of driving and associated GHG emissions as part of the regional transportation planning process. However, neither law grants MPOs new authority over land-use decisions, which are the purview of local governments (with the notable exception of Portland's MPO, Metro). Both laws are predicated on the idea that state mandates for planning will result in better plans and that better plans will result in better implementation of climate change-mitigation measures by local governments. This mismatch between MPOs' responsibility to prepare regional development scenarios that would reduce GHG emissions and their lack of authority over local governments' land-use decisions begs the question of how – or whether – the climate-action-planning portions of regional transportation plans (RTPs) will be implemented. Previous studies have highlighted the need for additional state and federal policies to incentivize local compliance with MPO scenarios (Barbour & Deakin, 2012); radical increases in vehicle-miles-traveled taxes, compact development, and the share of travel using less-polluting modes such as transit, bicycling, and walking (Tayarani, Poorfakhraei, Nadafianshahamabadi, & Rowangould, 2018); and a "reorientation" of transportation funding at both the state and federal levels (Lewis, Zako, Biddle, & Isbell, 2018) to achieve statewide GHG-reduction goals. However, the laws' influence on the ultimate outcome of reducing GHGs is indirect, at best. They directly influence only the quality of plans produced by MPOs.

This study assesses whether transportation spending priorities, reflected in short-term transportation

improvement programs (TIPs), have changed in metropolitan regions following the adoption of state-mandated GHG-reduction scenarios in RTPs. Looking at the impact of SB 375 and SB 1059 on planning decisions provides an intermediate indicator of progress toward the laws' ultimate goal of reducing GHGs that lies along the direct causal pathway. Therefore, this study compares the proportion of TIP budgets dedicated to roadway capacity projects, operations and maintenance, transit projects, and bicycle and pedestrian projects before and after the adoption of SB 375- and SB 1059-compliant RTPs. We classify projects proposed over the four-year TIP time horizon into the four categories listed above, then tally the total spending in each category as a proportion of the total TIP budget. In general, we find small increases in spending on transit and bike-ped projects, as well as small decreases in roadway capacity spending. Similarly, we find that higher quality plans are associated with larger shifts in spending priorities toward more sustainable transportation modes.

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Key Words: regional planning, climate change, transportation

RESEARCH ON THE OVERALL CHARACTERISTICS OF EVOLUTION IN CHINA'S URBAN SYSTEM AND URBAN AGGLOMERATION IDENTIFICATION

Abstract ID: 1278
Individual Paper Submission

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Background

As the biggest developing country worldwide, China has undergone tremendous changes since reform and opening up. Nowadays, unbalanced regional development is pretty prominent in China. In this context, it is necessary to scientifically understand the spatial development pattern of China's current urban system and urban agglomeration.

The Research of urban agglomeration in China originates from Megalopolis proposed by French geographer J. Gottmann the concept of Megalopolis in 1957 while studying the phenomenon of continuous urbanization along the Northeast coast of the United States[1]. Since then, increasing scholars have dedicated to relative researches. Scott proposed the concept of Global City-Region based on his research.[2] In 1996, Manuel Castells proposed the theory of Space of Flows accompanying with the rise of economic globalization.[3] Peter Hall proposed the concept of a polycentric mega-city-region in 2006, and applied the Interlocking network models of GaWC led by Peter Taylor to the regional scale to explain the phenomena of 8 mega city-regions in West Europe systematically.[4]

In the above context, we want to know that

(1) How about the overall evolution of China's national urban system in recent years?

(2) How can we identify the boundaries of urban agglomerations which seem to be a phenomenon of

Megalopolis in China?

Approach and Methodology

The enterprise data in this study uses the database of Chinese industrial and commercial enterprises in 2018. Firstly, from the perspective of social networks, refers to the method of Rozenbla and Pumain[5] to build a national urban network with enterprise ownership. Secondly, in order to improve the original network model, we added geographical proximity indicators to further highlight the regional characteristics of the national urban system. The above two processes are used to describe the overall evolution of China's urban system in recent years. Then we used multiple indicators to comprehensively identify them, including economic connection, the number of cities, geographical proximity, and socioeconomic indicators, etc. Thus, we could understand the overall situation of urban agglomerations across China and the current development boundaries of each urban agglomeration.

Main conclusions

(1) China's urban system is becoming more mature. High-level cities can break through regional restrictions, and a global city-regional China phenomenon has formed.

(2) Compared with traditional social networks, network construction based on geographic proximity index weighting algorithm can better describe the spatial development pattern of China's urban agglomerations.

(3) Based on the intensity of the weighted degree of proximity to the central city and the number of groups, 18 initially identified urban agglomerations in China were identified. Considering the connection between non-core cities, further screening of 9 candidate urban agglomerations in China, and considering attribute metrics in combination, we finally identified 6 major urban agglomerations in China.

Main meaning and Research Outlook

(1) It enriches the empirical cases of innovative algorithms for urban networks and provides ideas for the dynamic monitoring of the development boundary of urban agglomerations.

(2) The choice of the development pattern of China's urban agglomerations should be adapted to local conditions and guided by circumstances.

(3) In the future, based on the identification of urban agglomerations in this study, further research on their internal spatial evolution, industrial organization, etc.

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Key Words: Urban System, Urban agglomeration, Space of Flows, City network, Geographical proximity

A SEMANTIC NETWORK ANALYSIS: WHAT ARE THE DIFFERENT FEATURES OF GENTRIFICATION IN ITAEWON, SOUTH KOREA?

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Over the last few years, the issue of "gentrification" has spread into many academic disciplines. Gentrification is a term originally proposed by Glass (1964) which usually is used to describe the processes and spatial changes in many metropolitan cities, with the suburbanization reversing around the old city centre, the return of the middle class to the city centre, and the push of the working class and the common people (Kwon et al., 2017).

In South Korea, however, the term gentrification which has been disputed, has led to definitions that reflect various characteristics (Hogi Kim, 2018). In response, the Korean National Institute of Korean Language (KMA) proposed the term "Being driven out of a nest (둥지내몰림)" in Korean to substitute for gentrification (Lee, 2016). On the other hands, Korea media outlets also used a term "tourification" as an alternative use for gentrification. As the phenomenon of gentrification appeared in a wide variety of ways, Beauregard (2013) illustrates this as a 'confusing and complex phenomenon'. The concept of gentrification is now more complex and widespread on a global scale as time and space expand under the inevitable effects of neoliberalism. In Western countries, it has led to the de-idealization of gentrification over time, which is also defined a 'super gentrification', 'rural gentrification' and 'commercial led gentrification ',' cultural led gentrification ', and ' tourism gentrification '. This suggests that gentrification is a complex intertwined problem of macroscopic perspectives, based on a micro-approach to behavior among relevant stakeholders and social, economic and spatial restructuring.

The purpose of this study is to clarify 'semantic association' and relationship structure among related key words, focusing on 'gentrification' issue in Itaewon area in Korea. Itaewon is formed by various political, economic, and cultural contexts of Korean society. Especially, Itaewon has the parallel with the process of Town-centered development of Seoul city government after 1960s and it has established the identity as the consumption space by neoliberalism formally introduced after 2000s. Moreover, based on the historical practice called the 'US military government', Itaewon obtains its own unique sense of place as a foreigner's ground and a place combined with various cultures.

To examine phases and aspects of how gentrification affects to Itaewon area, this study focused on semantic network analysis applying big data and social network analysis. Semantic network analysis is a method that applies 'big data' and 'social network analysis'. This provides a useful perspective for explaining micro-behavior and macro-social structures by examining the behavior of individual actors in the context of the macroscopic structure constructed through the connections and interactions between the micro-behaviors.

As a result, gentrification in the Itaewon area is divided into four stages. The first stage of gentrification (2007 ~ 2010) is to induce revitalization of the city through redevelopment, and the main keywords are 'space' and 'life'. Gentrification stage 2 (2011 ~ 2013) is the initial stage of gentrification, and the main keywords are 'city', 'space', 'art', 'market', 'region', 'people', etc. The third stage of gentrification (2014 ~ 2015) is the period of commercialization as a gentrification growth stage, and the main keywords are 'legal system', 'Seoul', 'rental', etc. The fourth stage of gentrification (2016 ~ present) is the maturation period of gentrification, and the main keywords are 'policy system', 'urban regeneration' and 'preservation'.

This study illustrates a comprehensive examination of the macro and micro aspects of Korean-style gentrification. We also attempted to delineate how the gentrification phenomenon was broadly reflected in the landscape of Korea, how it is being developed, and what are the differences between each stage. By entering into critical debates on gentrification, we expect to present implications for the conceptual definition of the Korean-style gentrification.

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Key Words: Gentrification, Social Media, Semantic Network Analysis

REGIONAL PLANNING AND CLIMATE CHANGE MITIGATION IN CALIFORNIA
Abstract ID: 1389
Individual Paper Submission

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The purpose of this paper is to examine the evolution of climate change policy in regional planning, and to examine the role of modeling in the climate change policy planning process. California has long played a leadership role in environmental regulation in the United States. Ever since the state enacted the country's first automobile emissions standards in the early 1960s as a response to acute smog in Los Angeles, it has led both other states and the federal government in environmental regulation. Today California is the home of the only comprehensive cap and trade program, has the highest share of zero emission new car sales in the US, and has achieved significant reductions in greenhouse gas emissions.

This paper is motivated by the unique success of California in developing and implementing a comprehensive program of policies to address global climate change. What explains California's climate change policy, and what can we learn from the California example? We trace the history of environmental regulation in California and show how climate change policy is the outgrowth of decades of increasingly stringent and broad environmental policy. This paper is also motivated by our interest in the role of models. How does transportation modeling fit into the climate change mitigation process? We show how regional transportation modeling has a critical role in meeting air pollution reduction targets, and how models can be used to achieve plans that meet the targets.

Our method is a qualitative case study, drawing from official documents, legislation, media, and the literature. The paper presents the history of air quality regulation in California, with focus on mobile sources. We then describe how air quality regulations have transitioned into more comprehensive greenhouse gas regulations in the 2000s with the introduction of AB32. We then move to regional planning and describe how federal and state regulation have affected the regional transportation planning process. We focus on the role of models, showing how models are a critical element in the planning process and in generating plans that fulfill required pollution reduction targets. The paper closes with conclusions and some observations on what can be learned from California.

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TRACK 14 – POSTER ABSTRACTS

REGIONAL DEVELOPMENT IN THE AMAZON EASTERN BORDER: GEOGRAPHICAL DATABASE OF NORTH CENTER BRAZIL, ECONOMY, AND MORTALITY
Abstract ID: 60
Poster

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The geographic element has been prominent in studies related to social, economic, and regional development areas. This research derives from economic and from mortality analyzes based on data compiled in the Geographic Information System (GIS) about the "North Center Brazil", which has been managed by the Postgraduate Program in Regional Development team and Geography Course at the Tocantins Federal University, Tocantins State, Brazil. The North Center Brazil encompasses the Amazon eastern border and the largest Cerrado remnants (Brazilian Savannah) of the country, whose landscape has undergone a transformation process in recent years, led by agribusiness.

The spatial and temporal dynamics of economic production, income, employment, and mortality was analyzed, on the basis of GIS data. The main data sources were Brazilian government databases (IBGE, DATASUS, Secretariat of the Ministry of Economy). The computer programs used were free and/or open-source: (a) QGIS for geoprocessing; (b) R-programming language system for statistical computing; and (c) PostGIS as extension for managing spatial databases in a PostgreSQL environment.

By analyzing the compiled geographic data, it is possible to state that: (a) there is a great economic activity concentration in the agriculture and public administration sectors, which directly influence the development of other sectors; (b) public administration is the sector that offers the most jobs and has a strong influence on the generation of non-basic jobs; (c) the agriculture and services are the sectors that have more stable growth in the last 20 years; (d) from 2010, the industrial sector, which used to pay better wages, had a sharp downfall in growth. This sector is concentrated in the ore extraction and transport areas in the Carajás region; (e) there is a low correlation between the steady growth in the agriculture sector economic production and in the income growth of workers in this sector. Along with commerce, the agriculture sector used to pay the lowest wages; (f) there is a creation of temporary jobs in construction, directly influenced by the large hydroelectric dams building; (g) since 1990, the regional centers have moved to cities close to road infrastructure or to Palmas, capital city of Tocantins State, created in 1989; (h) the highest increases in mortality rates were associated with heart attack, cancer and diabetes, mainly between 2000 and 2010; and (i) the growth rates of diabetes and heart attacks have been higher than the country rates.

In this way, the Eastern Amazon and the Cerrado remnants in the northern Brazil are being transformed significantly, mainly in reason of the agribusiness advance. This transformation is not promoting increase in workers' income. It is considered urgent that the increase of the agricultural production be followed by an adequate social development, leading to an income growth for workers.

Mortality data still needs further analyses, but the higher rates of diabetes and heart attacks in the region must be investigated.

In addition, many environmental conservation units and indigenous lands, which work as a barrier to the Amazon deforestation advancement, are being pressured by the increasing occupation of the surroundings. There is need to strengthening public policies related to the Amazon rainforest and Brazilian Cerrado environmental preservation and conservation, and related to indigenous people support.

However, the main result of this research is the assembly of the geographic database and its availability for free access by society. The purpose is to set up a platform on the internet and to structure a regional observatory model that will allow monitoring and updating these data, as well as the inclusion of other themes, in accordance with the demand presented by the social agents involved, such as: social development, education, consumption, among others.

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Key Words: Geographic Information System, North Center Brazil, Regional development, Economic development, Social development

RESEARCH ON COLLABORATIVE EVOLUTION BETWEEN RAIL TRANSIT AND METROPOLITAN AREA'S SPACE STRUCTURE FROM THE APPROACH OF COMPLEX NETWORK——A CASE STUDY OF METROPOLITAN AREAS IN LONDON AND BEIJING
Abstract ID: 282
Poster

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At present, China has entered the era of rapid development of metropolitan areas. According to the development experience of mature metropolitan areas worldwide, it is crucial to promoting the coordinated development between rail transit and metropolitan area's space structure for construction of modern metropolitan areas. Building the multi-level rail transit network has become an important way to support the development of metropolitan areas, however, there is still a lack of in-depth understanding of the interaction and feedback mechanism between rail transit network and metropolitan area's space structure. The paper firstly chooses metropolitan areas in London and Beijing respectively as the research subjects. The research method of complex network is used to construct the topology model of rail transit network in different development stages of each metropolitan area, and Gephi is used to calculate and analyze the complex characteristic value of longitudinal evolution of rail transit network, then the paper compares the evolution law of the rail transit networks of two metropolitan areas. Secondly, the paper studies the interactive relations between hub sites distribution, efficiency of network transmission and other rail transit network characteristic elements and the scale and structure of the two metropolitan areas. Coupling analysis is conducted to calculate the coupling degree of metropolitan area's population density

to the regional distribution efficiency of pub site's node degree, pub site's service coverage rate and other elements. It is found that two different spatial development patterns are formed in the two metropolitan areas: London follows the development pattern of one core and multiple centers which are connected by rail network while Beijing follows the development pattern of spreading from one core center. The findings can proof that rail transit network and metropolitan area's space structure are correlated.

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Key Words: complex network, multi-level rail transit, topological structure, space structure

SKILL STRUCTURE AND REGIONAL INCOME DISPARITIES IN KOREA: A PERSPECTIVE FROM SKILL COMPLEMENTARITIES
Abstract ID: 839
Poster

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Background

Urban planners have long discussed ways of reducing regional economic disparities, especially in relation to the diversity versus specialization debate (Beaudry and Schiffauerova). Whilst there has been a lot of debate surrounding the effect of industrial structure, less attention has been focused on skill condition of labor market. Do cities indecisively focus their efforts on attracting high-skilled workers to catch the regional gap? It is time to broaden our concerns toward the importance of differentially skilled individuals (Barzotto and De Propris, 2019).

Objective

This study analyses the effect of skill structure on regional income disparities. Regional skill structures consist of skill specialization and skill diversity. Therefore, the main research hypotheses are as follows:

(1) The higher the level of skill specialization, the higher the income level,

(2) The higher the level of skill diversity, the higher the income level,

(3) Skill specialization and skill diversity have a complementary effect on regional income level.

Method

This study analyses 155 Local Labor Market Areas (LLMAs) in South Korea from 2010 to 2016.

First, skill specialization (SS) and skill diversity (SD), the characteristics of skill structures, are calculated

Second, Multiple regression analysis was conducted to analyze the relationship with the independent variables affecting income level.

Third, panel data analysis is conducted on how the characteristics of regional skill structures affect income levels.

Conclusion

This study has significant implications. First, this study contributes to the growing literature on the determinants of regional disparities by focusing on the skill structure of LLMAs. Second, this study shows that skill diversity as well as skill specialization are significantly important factors in explaining regional income disparities. In other words, this paper demonstrates the theory of skill complementarities. Third, by providing evidence of the link between skill diversity and regional disparities, this study emphasizes the role of urban planners as agents breaking path dependencies that reinforce existing skill structures.

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Key Words: Skill, Diversity, Specialization, Income, Local Labor Market Areas

SPATIOTEMPORAL ANALYSIS OF JOBS-HOUSING FIT IN SOUTHERN CALIFORNIA
Abstract ID: 1377
Poster

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Jobs-housing balance has become a major issue in urban and transportation planning and public policy. Among planners and policymakers, the imbalance of jobs and housing is considered as one of the key contributors to traffic congestion and air pollution, and an impediment to environmental justice[1]. On the other hand, a proper balance of housing and jobs can help people to live close to their workplace, thus reducing overall congestion, vehicle miles traveled (VMT), and greenhouse gas (GHG) emissions. In addition to the traditional measure of jobs-housing balance, it is important to examine the Jobs-Housing Fit (JHFIT) between available housing types and the income level of residents. As a part of the jobs-housing imbalance/mismatch analysis for Connect SoCal, 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)[2], the Southern California Association of Governments (SCAG) conducted the analyses of jobs-housing ratio and low-wage jobs-housing fit for southern California region at two scales—jurisdiction and the census tract (roughly equivalent to a neighborhood), based on the JHFIT methodology developed by the University of California, Davis Center for Regional Change.[3]

For the JHFIT analysis, this study examines the ratio between the total number of low-wage jobs and the total number of affordable rental units. To conduct the JHFIT analysis for cities and census tracts, SCAG employed publicly available data on job numbers from the LEHD Origin-Destination Employment Statistics (LODES) and housing numbers from the American Community Servey (ACS)[4][5]. Job data was obtained from the LODES Workplace Area Characteristics (WAC) Primary Jobs data files for the years 2010 and 2016. Housing data was obtained from Census Bureau's 2008-2012 ACS 5-Year Estimates and 2013-2017 ACS 5-Year Estimates. In this study, SCAG used the counts of rental units with both contract rent (renter-occupied units) and rent asked (vacant-for-rent units) for affordable rental unit estimates. To estimate affordable rentals, SCAG used the regional median household income—the midpoint of an income distribution in the SCAG region—as Area Median Income (AMI) limit and assumed that a housing unit is affordable if a household whose income is at or below 80% of the AMI can live there without spending more than 30% of their income on rental units. SCAG assumed that spending 30% of total household income on housing costs is reasonable as the 30% threshold is widely accepted among affordable housing developers and advocates and it the threshold above which the US Department of Housing and Urban Development (HUD) considers a household to be cost-burdened. For the neighborhood-level analysis, SCAG used a 2.5-mile buffer—the approximate average of the walk- and bike-commute distances—from the centroids of the census tracts and counted jobs and workers within the buffer distance.

The results of this study will be useful to understand different patterns in jobs-housing ratio and low-wage jobs-housing fit (1) between different income levels, (2) between geographic locations (coastal counties vs. inland counties) and (3) between temporal periods in Southern California region. Although the study area is the Southern California region, the method can be also applied to other areas as this study used publicly available data, such as the LODES and the ACS 5-Year Estimates.

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[1] Southern California Association of Governments (2020): Draft Connect SoCal (2020-2045 Regional Transportation Plan/Sustainable Communities Strategy, RTP/SCS) Environmental Justice Report

[2] Southern California Association of Governments (2020): Draft Connect SoCal Plan

[3] Chris Benner & Alex Karner (2016): Low-wage jobs-housing fit: identifying locations of affordable housing shortages, Urban Geography.

[4] U.S. Census Bureau Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics version 7.4

[5] U.S. Census Bureau American Community Survey Five-Year Estimates

Citations

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- U.S. Census Bureau Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics version 7.4
- U.S. Census Bureau American Community Survey Five-Year Estimates

Key Words: job-housing imbalance, jobs-housing mismatch, transportation, land use, regional transportation plan

TRACK 15 – TRANSPORTATION & INFRASTRUCTURE PLANNING

TRACK 15 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS IN THE SESSION

ARTIFICIAL INTELLIGENCE AND AUTONOMOUS VEHICLES
Pre-Organized Session 48 - Summary
Session Includes 357, 358, 359, 360, 361

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Artificial intelligence (AI) will change our communities, cities, and regions over the next decades. Autonomous Vehicles (AVs), sometimes called driverless cars, are expected to be the first robots humans will extensively interact with and rely on. While the engineering literature has a well-established foundation of developing and improving autonomous technologies, it is only within the past five years that the social context of AI and AV has received some though little attention. This session presents an overview of the social science literature as well as case studies on the impact Artificial Intelligence and Autonomous Vehicles are expected to have on our communities. Providing contrasting pro and con AI/AV-arguments, panel presenters share business perspectives, decision-makers' challenges, planners' hopes, and community perceptions. This session allows attendees to grasp the current state of social science knowledge on future technologies.

Objectives:

- know community, decision-makers, and manufacturers perspectives on AI/AVs
- compare benefits, costs, opportunities and concerns in AV/AI deployment

PERCEPTIONS OF AUTONOMOUS VEHICLES AS PUBLIC TRANSIT: A MICHIGAN PERSPECTIVE
Abstract ID: 357
Abstract within Pre-Organized Session 48

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Autonomous vehicles (AVs) hold great promises to contribute to global sustainability by removing barriers and expanding access to mobility. The introduction of autonomous buses could be a turning point for public mobility in the USA. However, how AVs would influence ridership and whether current riders would be willing to use autonomous bus service is under debate. To start filling this gap, we first analyzed responses from 919 randomly selected Michigan residents regarding their current usage of public transportation and their likelihood to use autonomous buses. We then conducted on-board surveys with 1468 bus riders in Michigan. We found that autonomous buses are perceived rather positively than negatively. Among people who do not ride public transit regularly, 15% of them, especially younger males, are likely to use autonomous bus service, findings that have been confirmed in other studies (Bansal 2016; Hudson 2019). Among current riders, however, about half were hesitant about riding in autonomous buses, a percentage higher than previous studies have found (Dong 2019). Fixed-route riders

were more likely to accept AVs than demand-response transit riders, a finding that tends to confirm Mattson's (2017) for rural populations. In addition, our data suggests that riders' satisfaction with their drivers has no impact on willingness to ride in AVs. Furthermore, we found that concerns over safety, no human, and distrust in technology were the major reasons that would prevent current bus riders from riding in autonomous buses. Riders with a mobility disability were not receptive towards AVs. Combined, these results suggest that AVs might socially exclude certain population groups, a finding that support Yigitcanlar's (2019) in the United States. As AVs become ready for deployment, policymakers and public transportation service providers should consider AV acceptance among current bus users, especially those who rely on this service, so as to bring AV benefits to all.

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Key Words: autonomous vehicles, public transit, public perceptions

CITIES, AUTOMATION, AND THE SELF-PARKING ELEPHANT IN THE ROOM
Abstract ID: 358
Abstract within Pre-Organized Session 48

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Over the next half century, automated vehicles could fundamentally alter not just how people travel, but where they choose to live and how cities form and grow. These changes and uncertainty about their timing, scale, and nature present substantial challenges for the city planners, traffic engineers, and other public officials who need to make regulatory and investment decisions that will coincide with any shift from human- to computer-driven vehicles. For example, today's decision to invest in a new rail line will likely require five-to-ten years of planning and construction and have a service life of another 30-to-50 years. Over this same period, self-driving buses and cars may have substantially changed the underlying nature of the demand for, and provision of, public transportation. Similarly, today's justification for a highway investment or road widening may look out of touch, if vehicle automation increases the number and speed of vehicles that can move on each highway lane.

This presentation builds on and updates a recent publication on some of the technological and behavioral uncertainties that limit planners' ability to predict when and how vehicle automation will affect cities. The focus is on developing a simple framework for planning under the uncertain conditions presented by autonomous vehicles that accounts for the diffuse powers of various planning agencies. Parking policy serves as an example. Whether automated vehicles lead to revolution in shared mobility or a substantial increase in single- or even zero-occupancy car travel, the relationship between parking and shops, housing, and offices will change. Parking policy is also one of the few areas of the transportation system where local municipalities have much direct control. Most importantly, there is already a strong case for

parking reform, absent automated vehicles.

Citations

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Key Words: vehicle automation, self-driving, parking

ASSESSING THE IMPACTS OF PANDEMICS ON AUTONOMOUS VEHICLE DEPLOYMENT: A CASE STUDY ON THE 2020 NORTH AMERICAN INTERNATIONAL AUTO SHOW
Abstract ID: 359
Abstract within Pre-Organized Session 48

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The introduction of autonomous vehicles (AVs) is leading the way for a revolution in mobility services for communities across the world. Existing literature has focused on the presumed benefits that this technology will have for communities using data from community surveys, simulated models, and small pilot programs (Bansal & Kockelman, 2018; Fraedrich et al., 2019). Understanding how AVs will impact real time traffic will require the deployment of pilot programs for public use to monitor how they function and to understand consumer preferences (Cohen et al., 2018; Stoiber et al., 2019). However, there is little written about how a large-scale disruption, such as a pandemic, may slow down the deployment of this technology.

This paper uses the 2020 North American International Auto Show (NAIAS) as a case study to explore how a pandemic can slow down the deployment of new technology. NAIAS 2020 is a unique case study to explore this relationship because of the scope of the event and the spread of Coronavirus Disease 2019 (COVID-19). The 2020 NAIAS is taking place in the summer for the first time and anticipates showcasing on-road autonomous vehicle demonstrations intended for public use. However, the COVID-19 outbreak in late 2019 has the potential to limit the number of event attendees due to travel restrictions, lack of airline services, or increased spread of the virus.

In order to explore how this pandemic impacted technology deployment at the event key stakeholder interviews were completed with individuals who participated in planning NAIAS 2020. This includes State of Michigan Employees who worked on establishing the AV demonstrations within NAIAS and those who directly worked on the planning processes of the event. Interviews were also completed with the providers of the AV pilot programs that would be showcased at the event to explore how the pandemic interrupted their services and what safeguards may be put in place to protect the users.

It is anticipated that the findings from this event will demonstrate how pandemics interrupt technology deployment using the 2020 NAIAS. The legacies of this event will provide guidance that will shape policy formation for managing the impacts of large-scale disruptions. This research will be relevant for helping public officials prepare for what may happen to the deployment of new technology during an on-going pandemic.

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Key Words: Autonomous Vehicles, Policy Innovation, Technology, Travel Behavior

AUTOMATED DRIVING: HOW INDUSTRY INSIGHT INFLUENCES CONSUMER ADOPTION OF AUTONOMOUS VEHICLES AND THE PRACTICE OF PLANNING
Abstract ID: 360
Abstract within Pre-Organized Session 48

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Future land use practices and regulation will significantly change if connected autonomous vehicles (AVs) are adopted by consumers (Litman, 2017). The research community and popular media are infatuated with robotic vehicles for their novelty and promise of transformative mobility. Understanding how consumer perceptions of autonomous vehicles develop and which stakeholders shape these AV perceptions has implications for planning and land-use policy, development, and design far into the future. The anticipated consumers of AVs are the same people who decide where to live and work and which political and civic groups to support. As a result, public acceptance of autonomous technologies will have an outsized impact on our communities and society as a whole (Bansal & Kockelman, 2018). Understanding the process of consumer acceptance of new technology, specifically transformative mobility technology, has important ramifications for the practice and solutions planners bring to their communities.

Connected autonomous vehicles promise to reduce traffic crashes, alleviate the burden of driving, change the way motorists use vehicles, and facilitate mobility access and equity (Litman, 2017). Current connected autonomous vehicle research focused on technology acceptance and behavioral intentions mines the perceptions of drivers and transportation experts but not the insight of subject matter experts associated with the U.S. automotive industry. The U.S. auto industry has a 120-year history of design, sales, and manufacturing innovation that has transformed the way Americans live. Understanding from industry experts their perceptions of the most effective sources, channels, and types of information that influence the public's perceptions of automated driving solutions benefits the fields of planning, marketing, and communications by bringing the voice of consumer influence into the planning and technology adoption processes.

This session explains the process of influencing consumer expectations and preferences for autonomous mobility, the stakeholders and methods used to influence, and possible impacts consumer expectations and perceptions will have on future land use and built environments. Understanding the processes of influence and technology acceptance draws upon theoretical foundations associated with communication (opinion makers, WOM, eWOM) and technology acceptance model. (TAM) A collaboration of the two theoretical domains provides a foundation on which to understand the most credible and influential sources, channels, and types of information that positively impact public perceptions of autonomous mobility. This session draws upon survey data and executive-level interview data to explore perceptions regarding influencer channels and expectations for future planning. Included in the discussion will be a

set of recommendations and potential solutions for planners, developers, and policy makers based on mobility trends generated by this research.

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Key Words: autonomous vehicles, technology acceptance, autonomous vehicle adoption, consumer adoption, automated driving

DISAPPEARING CARS: LAND USE IMPLICATIONS OF AUTONOMOUS VEHICLES
Abstract ID: 361
Abstract within Pre-Organized Session 48

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The implementation of autonomous vehicles (AVs) is a responsibility shared between private mobility providers and public infrastructure development, that will likely see the new vehicles requiring changes to the built environment and land use. A change in mobility options is also an opportunity for planners to review land use patterns and to consider how positive changes can be implemented that support sustainability, equity and community wellbeing. To date, many decisions about AVs have been led by vehicle and software producers and mobility providers, with far less input from urban planners and city decision makers. One of the lessons of the first auto era was how blind acceptance and accommodation of new forms of mobility can create a wide range of planning related issues. This paper addresses how AVs might impact land use associated with roads, sidewalks and garages using data drawn from a study of residential housing in metropolitan Detroit.

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Key Words: mobility, autonomous, land use, disruptive technology

TRANSPORT EQUITY IN SLOW GROWTH AREAS

Pre-Organized Session 52 - Summary
Session Includes 278, 279, 280, 281

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Transportation infrastructure plays an important role in shaping urban development activity and private investment patterns. One element absent from transportation planning scholarship is a consideration of how the planning process, and impacts of investments, may differ in shrinking or slow growth cities. Recent scholarship demonstrates that slow growth cities are experimenting with new forms of transport governance (Lowe and Grengs 2018), financing (Fischer 2019) and technological frameworks (Culver 2017). This panel explores the ways that these experiments are distinct from prior developments by probing three questions: How does a shrinking city or slow-growth context influence the pursuit of equitable transport planning? Are there different socio-spatial equity problems and solutions surrounding transport planning in such contexts? How does (and should) transportation planning happen differently in urban areas and cities that are not growing rapidly or that are losing populations?

Objectives:

- Explain the differences between transportation planning paradigms in cities where population or rider growth is assumed, and cities where population or rider growth has stagnated, or is declining
- Analyze how transportation planning priorities in weak market cities impact socio-spatial equity concerns of planning agencies and communities
- Explore economic benefits of public transportation planning in shrinking contexts to analyze and critique project justifications and outcomes relative to local stakeholders

HISTORICAL PERSPECTIVE ON TRANSPORTATION DISINVESTMENT: A CASE STUDY OF DETROIT, MICHIGAN.

Abstract ID: 278
Abstract within Pre-Organized Session 52

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Before it became the automotive capital of the world, the City of Detroit had an expansive public transportation network of streetcars operating on fixed rail laid in the street, and powered by overhead electrical wires. The increase in public transportation was the result of shifting demographics, and a marked increase in urban populations, life expectancy, and economies of scale that facilitated higher density living. Privately built public transportation networks operated for profit were a critical component to this urban growth, and streetcar tracks stretching from the congested central business districts out into the residential areas of city formed the iron backbone of urban growth in the decades before the automobile.

By the 1950s many of these streetcar systems were completely or partially dismantled and replaced with diesel buses. Nationwide, there was a precipitous decrease in public transit ridership. There is scholarly consensus that this shift was connected to the rise in government-subsidized suburbanization, and a consumer preference for personal automobiles. These histories have kernels of truth. It is true that personal automobile registration sharply increased post-1945, while public transportation ridership decreased. However, the decline of public transportation has been too easily written off as a casualty of consumer preference and technological inferiority, which has contributed to adoption of auto-centric urban planning and city design for more than half a century. The fatalism with which planners and historians have viewed the decline of public transportation obscures the nuanced history of municipal governance which failed to invest in long term infrastructure expansions long before their ridership began to collapse. This paper argues that there is still more to be learned from the history of streetcar decline. In particular, I investigate the historical process of municipal decision making that lead to rail disinvestment in the City of Detroit. Revisiting the history of streetcar decline is important because the resultant lack of

transportation for minority and low-income populations impacts has continued to impact contemporary urban growth and policy during the period of suburbanization.

Detroit, like many rustbelt cities, struggled to extend transportation to serve suburban residents during the process of deindustrialization and suburban migration. Between 1967 and 2020, the Detroit metropolitan region has failed 29 different times at attempts to implement regional transit that crosses municipal and county borders. The consistent hang-up has been around issues of funding, allegations of corruption, and proportional representation on decision-making bodies. Three different regional transportation planning bodies have been formed to try and address the service gaps that span the four counties of southeastern Michigan, with the most recent being approved by the legislature in 2012. This paper argues that the history of Detroit's public transportation disinvestment is closely tied to regional factors that drove suburbanization, and that this history needs to be more closely studied to understand the implications for policy going forward. Detroit represents a case study of public transportation planning in a shrinking city attempting to make a resurgence. Transportation policy in the region would be served by being aware of these histories in future plans. The significance of this research directly addresses issues of regional cooperation and funding models, and uses a historical lens to conduct analysis.

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Key Words: Transportation Planning, Detroit, Regionalism, Shrinking City, Public Transportation

"TRANSIT WILL PAY FOR ITSELF": TENSIONS BETWEEN DEVELOPMENT AND RIDERSHIP IN LOW-GROWTH CITIES
Abstract ID: 279
Abstract within Pre-Organized Session 52

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Public transit investments are increasingly being planned with emphasis on their economic development potential, rather than service or accessibility improvements (King and Fischer 2016, Ramos-Santiago, Brown et al. 2016). Bus rapid transit (BRT) in particular has promised "more development for your transit dollar", albeit under the assumption that land markets are already strong (Hook, Lotshaw et al. 2013). This raises questions as to how conflicts between development and accessibility are negotiated, especially in the context of low growth cities. How agencies view the role of transportation investments have important planning and equity implications (Taylor and Morris 2015), yet there is less known about how these are balanced in jurisdictions with limited fiscal tools.

This research examines the planning for BRT in Winnipeg, MB to understand how the development potential of transit is negotiated in the context of constrained fiscal tools and weak property markets.

Canadian cities are particularly limited in revenue generation tools, with the majority of municipal budgets derived from property taxes and government transfers. This has led to conflicts between planning goals, and the desire to increase property tax revenue (Slack 2002), which can be particularly exacerbated in low-growth cities. Despite this problematic fiscal context, little research has examined how municipal reliance on property taxes interact with transportation planning and investments.

Drawing on a mixed-method research approach, including key informant interviews, discourse analysis and spatial analysis, this research examines how conflicts between development and ridership goals are balanced and prioritized, and the implications for planning practice. As demonstrated by a former mayor who argued that "transit will pay for itself" through increased property development, the economic potential of transportation investments is often integral to their planning. While there is a lack of transparency in how various goals are weighted, our analysis shows that development potential is often prioritized in routing decisions. Despite limited evidence of favourable market conditions, both political and professional actors emphasize development potential, raising critical concerns about accessibility and equity.

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Key Words: bus rapid transit, property tax, development, ridership, municipal finance

DEVELOPMENT RESPONSES TO NEW TRANSIT IN STAGNANT SUBURBS: AN IDEOLOGICAL PATTERN
Abstract ID: 280
Abstract within Pre-Organized Session 52

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How do political officials in slow-growth suburban municipalities leverage infrastructure investments to alter, or maintain, the development patterns of their communities? To answer this question, I investigate variation in political rhetoric, planning processes, and urban design along two planned light rail transit lines. I set out to show that local officials charged with making decisions related to land use harness political ideologies to make choices. In so doing, I argue that demographic and economic-based explanations for how localities plan are insufficient to explain why cities act in different ways.

There is an extensive scholarship on the manner in which suburban communities develop, and the impact that new infrastructure may have on those approaches. Phelps and Wood (2011) develop a typology of suburban land-use governance, arguing that already-existing suburbs are likely to follow one of three patterns: decline due to low-income populations and few jobs; stability due to a predominantly affluent residential population; or post-suburbanism, meaning transformation from bedroom community into mixed-use jobs center. This typology relies on the assumption that economic conditions are the best explanation for how communities change over time. Pojani and Stead's (2014) argument that new development rarely follows a government-imposed pattern reinforces this view.

Researchers, though, have posited the importance of infrastructure investments in altering community objectives and outcomes. Olesen (2019) emphasizes that projects like new light rail lines support neoliberal urbanism founded on growth, rather than social justice. This concept is boosted in the context of economic competition between municipalities and idea transfer between communities (Thomas and Bertolini, 2015). If there is an alternative, such as one that encourages equitable and inclusive neighborhood development, scholars have largely focused thus far on exploring community-based activism (Amam et al., 2019).

Further research thus is needed to understand the role of political ideologies in impacting how political officials shape these responses. If demographics are important, do they explain everything about the development choices communities make? If infrastructure has a role to play to altering outcomes, do communities act differently in response to similar investments?

I engage these questions through case studies of two now under construction transit lines in the United States: The Foothill Gold Line Extension being built east of Los Angeles, and the Purple Line being built north of Washington, D.C. Both projects will cost billions of dollars to build, have taken decades to plan, and have required the coordination between more than a dozen local and regional governmental entities to be completed. They are representative of new suburban light-rail projects that are becoming increasingly common in regions throughout the country. They also offer the opportunity—if political officials want it—to alter land uses in response to the availability of a new transportation option.

For each project, I conducted dozens of interviews with municipal, county, and state officials—both elected and civil servants. These officials play important roles with respect to the transit projects because they help orient decisions about where future stations along the light-rail lines should be located, and what kind of new developments (such as housing and office space) should be completed adjacent to those stops. For each project, I focused in on the experience and actions of municipalities along the lines whose populations have barely budged since at least the early 1990s: La Verne and San Dimas in the suburbs of Los Angeles, and New Carrollton and Takoma Park outside of the District of Columbia. These examples provide us useful insight into how suburban cities with stagnant populations are responding to the potential development impetus offered by investment in new infrastructure.

Citations

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Key Words: Transit-oriented development, Suburbs, Local government, Growth politics

ALTERNATIVE TRANSPORTATION OPTIONS IN A SMALL MICHIGAN CITY
Abstract ID: 281
Abstract within Pre-Organized Session 52

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Alternative transportation in small cities and rural regions is more limited than in metropolitan areas. Building upon social justice theory from Rawls' 'A theory of justice' and Walzer's 'Spheres of Justice', this research focuses on transportation access as a common goal of local government, institutions, and social service organizations. Justice, i.e., fairness for all people, in transportation planning is important to understand because transportation serves a basic human need – the ability to travel to work, school, shopping, social events, and medical care. Inclusion of all in the provision of transportation, regardless of disability or income, supports human rights. This research examines the transportation situation in Mount Pleasant, a small Michigan, USA community, and asks key decision-makers, as well as members of underrepresented groups, about their views and experiences with transportation and justice.

Through key informant interviews, this research explores alternative transportation options and transportation justice through an investigation of opinions, attitudes, values, and experiences of users, transportation service providers, local government officials, and organizations serving people with disabilities, older adults, and students. Analysis of ridership data and agency reports supplement interview data and together yields key lessons to inform transportation planning prioritizing the needs of all people for transportation access.

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Key Words: equity, public transportation, social justice, alternative transportation

TRACK 15 – ROUNDTABLE ABSTRACTS

JOB ACCESS OF THE POOR IN THE UNITED STATES AND CHINA: RESEARCH AND PRACTICE
Abstract ID: 414
Roundtable

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BLUMENBERG, Evelyn [University of California Los Angeles] eblumenb@ucla.edu, participant
CHAPPLE, Karen [University of California Berkeley] chapple@berkeley.edu, participant
SHEN, Qing [University of Washington Seattle] qs@uw.edu, participant
FAN, Yingling [University of Minnesota] yingling@umn.edu, participant
HU, Lingqian [University of Wisconsin Milwaukee] hul@uwm.edu, participant
KARNER, Alex [University of Texas at Austin] alex.karner@utexas.edu, participant

Job access is critical to the economic and social wellbeing of individuals. However, access to jobs differs by region, neighborhood, and demographic groups. Further,spatial issues like proximity to job opportunities and private and public transportation resources may explain poor employment outcomes for low-income people (Blumenberg and Manville, 2004).

John Kain's spatial mismatch hypothesis (SMH)is among the earliest theories to address job access

among the poor (Kain, 1968). Kain argued that low unemployment rates among African Americans living in inner cities arose from both suburbanization of employment and housing segregation. SMH motivated many planners to consider the policy responses to the job access problems for the low-income in general. In the last five decades, planners have expanded on job access research, finding that: (1) In the U.S., job access issues exist not only for African Americans living in urban areas, but other socially disadvantaged groups like women, other ethnic minorities, immigrants,and the poor in general (Blumenberg and Manville, 2004). (2) Spatial mismatch differs by U.S. region and over time. Recent studies have found that in some cities, spatial mismatch operates differently, as the poor have physical proximity to job opportunities, but lower access to automobiles (Hu, 2015).(3) New methods and data allow better ways to calculate job access. For example, as availability of open-sourced and big data increases, scholars develop innovative ways to evaluate job access for the poor, which can be used by other scholars and policy makers.(4) Finally, job access issues differ by national context. For example, spatial mismatch in China arises from housing segregation due to institutional transformation, as well as dramatic changes in socio-spatial urban structures in the last three decades (Fan et al., 2014). Job access among the poor is clearly an important issue in planning research and policy, with many research directions arising from different national contexts.

This roundtable assembles eight scholars who have done research related to job access from different perspectives and discuss future agendas for job access research and policies in the U.S. and China. This study adopts a comparative perspective to address the following questions in the China and the U.S.: (1) How has urbanization influenced job access among the poor in the last two decades? Which types of residents are influenced by this process? (2) What are the newest data resources in job access research? How do they differ among the two countries and political contexts? (3) In comparing China and the U.S., can we identify new theoretical frameworks to address job access problems? Is spatial mismatch still an important framework to understand job access?If not, what would anew framework to analyze job access among the poor look like?

This roundtable brings together scholars and students working on job access in different settings (the U.S. and China). By addressing recent findings and trends in the field, this round table ties together research and practice of accessibility planning internationally.

Note: Professor Kate Lowe from University of Illinois, Chicago and Professor Jiangping Zhou from the University of Hong Kong will also attend the roundtable discussion. But due to the limit of authors, they were not listed.

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Key Words: job access, transportation, housing, international, spatial mismatch

TOD @ 25
Abstract ID: 429
Roundtable

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SCHERRER, Florence Paulhiac [University of Quebec] paulhiac.florence@uqam.ca, participant
CAO, Xinyu [University of Minnesota] cao@umn.edu, participant
LUNG-AMAM, Willow [University of Maryland] lungamam@umd.edu, participant
CHATMAN, Daniel [University of California Berkeley] dgc@berkeley.edu, participant

The year 2018 marked the 25th anniversary of The Next American Metropolis by Peter Calthorpe, the book credited with coining the term "transit-oriented development" (TOD). This roundtable draws upon lessons from papers published in the recent Journal of Planning Education and Research's recent special on this topic. The special issue featured articles that cover several themes, including theoretical conceptualizations of implementation, productivity, knowledge and creative industries, housing and gentrification, and travel behavior. The session will highlight the findings of each theme with the goal of defining future directions in TOD research.

Citations

- Lung-Amam, W., Pendall, R., & Knaap, E. (2019). Mi Casa no es Su Casa: The Fight for Equitable Transit-Oriented Development in an Inner-Ring Suburb. Journal of Planning Education and Research, 39(4), 442-455.
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Key Words: transit oriented development, transportation, travel behavior, housing, trends

TRANSPORTATION PEDAGOGY ROUNDTABLE: SOMETHING OLD, SOMETHING NEW. AND SOMETHING BORROWED
Abstract ID: 920
Roundtable

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Each profession engages in their own signature pedagogy; for example, novice doctors do rounds, novice lawyers engage in case dialogue. These approaches instill in students the cultural norms and habits of mind required by their profession. The cultural norms, habits of mind, and signature pedagogies of urban planning, currently, are outlined by the Planning Accreditation Board (PAB).

This roundtable discusses strategies to teach the needs of transport planning, focusing on a reality of mature cities. For instance, we ask how should the profession prepare transportation planning students to shift away from a "predict and provide" model—oriented to alleviating auto congestion and providing new infrastructure—to one that more efficiently employs existing resources. A focus on using public streets and public assets underlies this aim.

Thinking through pedagogical approaches is important because, as Richard Shaull notes, "There is no such thing as a neutral educational process." Teaching approaches will either prepare students to work within "the logic of the present system" or will enable students to "deal critically and creatively with reality...and discover how to participate in the transformation of their world." If curricula teaching the next generation of transport planners does not change, students will be unprepared to face some of the unique challenges posed by mature cities. In efforts to update PAB standards and more, this roundtable aims to identify how past educational approaches addressing transport planning might be sunsetting and then shines light on future prospects and skills.

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Key Words: transport pedagogy, innovative teaching

TRACK 15 – INDIVIDUAL ABSTRACTS

THE INFLUENCE OF THE BUILT ENVIRONMENT ON CRASH RISK IN LOWER-INCOME AND HIGHER-INCOME COMMUNITIES
Abstract ID: 7
Individual Paper Submission

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Studies of the relationship between the built environment and traffic safety typically use race and income as control variables, with lower median household incomes and higher percentages of non-whites being associated with increases in crash incidence. Nonetheless, there has been little detailed examination into the environmental factors that may influence crash risk in lower-income communities themselves. While lower-income communities may experience higher rates of traffic-related crashes, injuries, and deaths, it is not at all clear that the environmental factors associated with crash risk are the same for lower-income areas as they are for higher-income areas, or for the population as a whole.

This presentation reports the findings of a study that uses negative binomial models to examine the influence of the built environment on the incidence of total, injurious, and pedestrian-related crashes for low-income and high-income communities on Orange County, Florida. It finds notable differences in the modelled variables for these income groupings, both in the magnitude and in the direction of effect. First, while urban arterials are a risk factor for lower- and higher-income block groups alike, their negative effect on safety is profoundly greater in lower-income environments. For higher income communities, each additional mile of urban arterial is associated with a 9% increase in total and KAB crashes, though it did not have a statistically-meaningful relationship with pedestrian crashes. For lower-income communities, each mile of urban arterial is associated with a nearly 30% increase in total and KAB crashes, as well as a 19% increase in pedestrian crashes. Arterials had a negative, but statistically-

insignificant effect on pedestrian crashes in higher-income communities, suggesting that when confronted with the choice of walking along unsafe thoroughfares, affluent residents choose not to do so.

This study further finds that "livability" features have differing safety effects in high-income and low-income communities. While it is widely presumed that the presence of sidewalks and sidewalk buffers enhance safety, the results of this study suggest that the relationship between these features and traffic safety is more complicated. For more affluent areas, which contain residents who are less dependent on walking as a primary means of transportation, sidewalk buffers were found to be associated with significant increases in total, injurious, and pedestrian collisions alike, while the presence of sidewalks was associated with a significant increase in injuries involving all road users. This is almost certainly attributable to increased exposure associated with higher rates of walking. For lower income communities, by contrast, sidewalks and sidewalk buffers were not significantly-related to increases in crashes or injuries; indeed, the increased presence of these features tended to be associated with reductions in injurious and pedestrian crashes. For lower-income communities, walking is often a default option due to lower rates of car ownership. In such conditions, overall pedestrian volumes, and thus pedestrian exposure, is likely to be unaffected by the presence of pedestrian amenities, with such features serving principally to enhance the comfort of walking trips that would have been taken regardless of their presence.

Finally, while the percentage of white residents was not statistically-associated with crash risk in more affluent block groups, race appears to exacerbate crash incidence in lower-income communities, with higher concentrations of non-white residents being associated with significant increases in total, injurious, and pedestrian-related crashes alike. We conclude by discussing recent research that illustrates how racial bias may exacerbate latent levels of crash risk.

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Key Words: Transportation, Traffic Safety, Transportation Equity

FEDERAL ROADSIDE DESIGN GUIDELINES: DRAMATICALLY DIFFERENT STATE INTERPRETATIONS
Abstract ID: 55
Individual Paper Submission

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Since the 1960s, the American Association of State Highway and Transportation Officials (AASHTO) has issued guidance for state highway agencies to maintain a clear recovery zone adjacent to the roadbed, kept free of fixed objects such as trees (AASHTO 2012). Trees are removed in order to reduce or eliminate run-off-the-road crash fatalities.

The clear zone is employed for the safety of drivers only. State highway agencies are not required to analyze the ecological effects of tree removal on habitat reduction, ecosystem services, erosion, carbon sequestration, or any other environmental metrics. States have considerable latitude regarding the

execution of the clear zone, and while the clear zone is implemented as an absolute rule of road design, its relationship to road safety is still disputed (e.g., Wolf & Bratton 2006).

The aim of this research is to describe the interpretation, execution, and environmental impacts of federal clear recovery zone design guidelines as implemented by different state highway agencies. Indeed, roadside treatments among states run the gamut from intentional management of native plantings and pollinator habitat, to utilizing right-of-way for energy production, to complete clear-cutting of both woody and herbaceous growth. For instance, in 2017, the Georgia Department of Transportation began clear-cutting all trees on department-controlled property, whether within the clear zone or not, citing traffic safety concerns. By contrast, other states such as Washington and Florida carefully consider the assets and ecology of roadsides, with the goal of balancing habitat and other ecological benefits with traffic safety (Harrison 2014). Worryingly, as resiliency is incorporated into more and more state practices, and as environmental regulations are loosened, the trend among states may bend toward clear-cutting.

This research seeks to address the following research questions:

1) How do different highway agencies develop, justify, and execute their clear zone policies?

2) What are the outcomes of clear-cutting practices in states that have implemented this policy?

3) What will it mean ecologically if more states follow suit?

Research is conducted in two parts. First, I use comparative case studies of the decision-making processes within highway agencies regarding the development and execution of clear zone policy and vegetation maintenance, following a grounded theory methodology. As primary data collection techniques, I conduct interviews with department of transportation staff and review documents, as available. Interviews follow a snowball method and begin with personnel in the roadside maintenance and safety departments, landscape architecture, geometric design departments, and others depending on the structure and key players that emerge from the interview process. Interviews are coded using inductive codes.

Next, I gather data about selected road segments and conduct visual assessments along selected roadsides. This field data provides context to understand and evaluate the interview data. I select stops along the roads to document the environment, making every effort to randomize site conditions, though stop selection is highly dependent on roadside configurations. At each stop, I use a checklist to document road conditions (lane count, width, shoulder width, embankment profile), roadside treatments (clear zone width, managed/unmanaged vegetation height and structure, species identification, and stormwater management), and other relevant information. Documentation consists of photographs, a GPS logger, sketches, written notes, and vegetation samples, as appropriate.

Results will shed light on the high variability of practice and implementation of federal policy, originally written to engender flexibility and context-sensitive designs. Results are intended to be used by policy makers at the federal and state levels to engage with a more ecologically balanced approach to roadside spaces.

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Key Words: transportation, ecology, environment, policy, roadside

A TIMELY DETOUR: AN EXAMINATION OF THE DEVIATION TIME ASSOCIATED WITH SHARED RIDEHAILING SERVICES IN TORONTO

Abstract ID: 56
Individual Paper Submission

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To date most research that has looked at ridehailing has concentrated on its traditional form and little attention has been given to shared ridehailing services such as UberPool and Lyft Line. These services substantially reduce the cost of ridehailing trips by enabling passengers traveling in the same general direction to share rides and are poised to have vast social and economic implications for cities. Influential scholars agree that these services behave differently than their traditional counterparts and that much surrounding their impacts upon cities remains misunderstood. While indeed largely unexplored, many of the alleged benefits of shared ridehailing are believed to align closely with cities' sustainable transport objectives. However, without an adequate analysis of this mode, which includes separating shared ridehailing service from other forms of ridehailing and distinguishing between successfully matched and unmatched trips, there is a risk that policymakers and researchers will inaccurately assess the potential benefits of pooling and continue to regulate it in accordance to the impacts of traditional ridehailing.

A particularly unexplored facet of shared ridehailing is the detour time required to pick up additional passengers. This time penalty, known as deviation time, is important to consider as it has been shown to affect the attractiveness of shared ridehailing services, and ultimately the extent to which it may offer transportation, environmental, and social benefits. Using a 17-million record dataset of every Uber trip conducted in Toronto between September 2016 and April 2017, we conduct a travel-time difference analysis between successfully matched shared ridehailing trips and equivalent non-shared trips. Equivalence is assessed using the start-time and location (origin and destination) of trips, from which we create spatial and temporal buffers. We find the time penalty associated with pooling to vary substantially across time and space in Toronto. Our preliminary results also indicate that shared ridehailing demand significantly influences matching propensity, and that pooling reduces vehicle-kilometers traveled, relative to equivalent non-shared ridehailing trips. By examining the time penalty associated with sharing, this study contributes novel empirical evidence of the effects of shared ridehailing services on urban mobility systems and contributes to shaping the future of mobility by exposing the intrinsic spatial-related inequalities of this mode.

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Key Words: Ridehailing, Uber, Travel-time analysis, Shared mobility, Deviation time

BEYOND BIKE LANES: THE POLITICS OF THE CYCLING INFRASTRUCTURE DECISION-MAKING PROCESS

Abstract ID: 66
Individual Paper Submission

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The benefits of cycling infrastructure are well known and widely studied in the literature. Despite the overwhelming evidence on the benefits of dedicated cycling infrastructure to increase cycling participation and safety, cities are halted by the politically contentious decision-making process of approving and funding infrastructure projects (Siemiatycki, Smith, & Walks, 2016). Regardless of the support or opposition to cycling infrastructure plans, the decision-making process is influenced by political interests (Siemiatycki, Smith, & Walks, 2016). The political interests may include city mayors, councilors, planners, advocacy groups, real estate developers, and others. Considering the range of groups that influence the decision-making process, cycling infrastructure often situates in areas that groups that have the most influence desire, and therefore can be inequitably distributed. Inequitable distribution of infrastructure is a problem, as lower socioeconomic areas are left without as much access to transportation (Grise & El-Geneidy, 2018).

In most cases, cycling investment is supported along with plans for more walkable and liveable environments, yet these plans can also have unintended consequences that remain at odds with some of the social objectives behind transportation projects. For example, in an effort to create a walkable environment, the street would be transformed and rendered an enjoyable place to live. As a result of the increase in walkability, real estate values increase, resulting in the influx of residents who are able to afford the increased cost of living in the neighbourhood (Knight, Weaver, & Jones, 2018; Stehlin, 2015). The influx of higher income residents to a neighbourhood can displace lower-income residents in a process otherwise known as gentrification (Jones & Ley, 2016).

Given the importance of cycling and issues associated with the decision-making process, the purpose of this paper is to problematize the cycling infrastructure decision-making process. Through a mixed-methods case study methodology, this paper examines the City of Vancouver to illuminate the cycling infrastructure decision-making process. The research focused on finding answers to the following questions: 1) What is the current decision-making process of cycling infrastructure investment from advocacy to evaluation? 2) What are the mechanisms of influence and power in the cycling infrastructure decision-making process? 3) How are issues of equity valued, determined, implemented, and evaluated throughout the decision-making process?

The findings focus on three themes: 1) Overwhelmed decision-making process 2) Outcomes of infrastructure distribution, and (3) Equity within the planning process. These results implicate the cycling infrastructure decision-making process in the inequitable distribution of investment in cycling infrastructure. Furthermore, the findings highlight the importance of incorporating equity measures in active transportation plans and evaluations. This research contributes to the literature on the growing need for measures and analysis of equity in active transportation planning. By understanding the cycling infrastructure decision-making process through a critical political-economic lens, this paper highlights issues of equity and gentrification relevant to scholars, educators and practitioners involved in transportation.

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Key Words: Cycling, Equity, Political-economy, Gentrification, Infrastructure

TWO SIDES OF THE SAME STREET: A MIXED-METHODS FIELD EXPERIMENT TO EXAMINE STREETSCAPE WALKABILITY
Abstract ID: 78
Individual Paper Submission

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Walkability is often characterized in terms of destination accessibility and adequacy of transportation infrastructures, such as sidewalks and crosswalks. Urban design literature, however, emphasizes how streetscape design affects preferences for walking environments. Streetscapes that are spatially enclosed by surrounding buildings, or which are lined by active facades due to street-facing businesses and residences, are thought to encourage pedestrian activity (Ewing and Handy, 2009). Nonetheless, the extent to which walkers without expertise in design or planning are aware of streetscape design and respond to it consciously or subconsciously in their walking preferences, especially in real-world contexts, remains poorly understood. Substantiating how streetscapes influence walkers' perceptions and preferences will be important for better integrating streetscape design into pedestrian transportation analyses and planning.

This study, a component of my doctoral dissertation, used a mixed-methods field experiment to examine preferences for walking along different streetscapes among lay subjects. The experiment leveraged streetscape differences between opposite sides and adjacent blocks of an urban street. Through a ranking activity, semi-structured interview, and participant photography, it investigated which aspects of streetscapes walkers identified as preferable and investigated the hypothesis that walkers prefer more enclosed streetscapes lined by active façades, compared with more open and less active alternatives. Following the experimental work by Chrisinger and King (2018), it also used physiological sensing to study how stress indicators might reveal subconscious responses to different streetscapes.

The experiment was conducted along six blocks of a street in downtown Berkeley, California. Block faces along one side of this route were predominantly enclosed by sidewalk-adjacent buildings with a mix of more and less active facades. The other side was more open, including a park-like green, a parking lot, and a gas station. These real-world stimuli offered greater external validity than traditional visual preference studies using still images or virtual reality, which compromise the sensory realism of complex urban environments (Gjerde, 2011). To bolster internal validity in the face of confounding influences, this experiment used mixed methods to examine which factors subjects recognized as most strongly influencing their preferences.

Subjects were recruited from a sociodemographically diverse pool of Berkeley community members, both with and without university affiliations, maintained by the UC Berkeley Experimental Social Science Laboratory and the Osher Lifelong Learning Center. After completing a screening survey, subjects were invited to participate in a field session through a stratification process that prioritized a diverse sample rather than population representativeness. Forty subjects completed a field session.

Field sessions consisted of two parts. The first collected physiological data with a wrist sensor while the subject walked at their own pace along one side of the route. The starting side was randomized between subjects. The second part consisted of a series of semi-structured interviews while the subject and

researcher walking back along the other side. Along each block, subjects were asked which side of the street they would prefer to walk on and what factors influenced this decision. They also ranked each block-side by ordering photographs they took along the route.

Preliminary analysis shows that many subjects identified streetscape design characteristics, including enclosure and façade activity, though not necessarily using those terms, and described them as influencing their preferences between block-sides. However, subjects' preferences for enclosure and façade activity were inconsistent, suggesting that existing theories about these qualities inadequately represent the diversity of lay perspectives. This experiment is useful for substantiating that streetscapes have a notable yet diverse influence on walkers' preferences. Much larger experimental or survey samples will be needed to examine whether there are consistent structures in individual-level streetscape preferences or how streetscapes may predictably influence pedestrian travel patterns.

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Key Words: walkability, streetscape, field experiment, mixed-methods, physiological sensing

ACTIVE COMMUTING: THE CHANGE OF TRANSIT-RELATED WALKING TO WORK FROM 2009 TO 2017
Abstract ID: 79
Individual Paper Submission

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Public transportation has identified as the means of integrating transit-related physical activity into regular life (Durand et al., 2016). Instead of providing point-to-point travel service, taking public transit requires users to take the trip to the transit station and the trip to the destination (Djurhuus, Hansen, Aadahl, & Glümer, 2014; Rissel, Curac, Greenaway, & Bauman, 2012). The transit-related walking trips provide travellers the opportunity to achieve at least 30 minutes of physical activity per day in order to meet the recommended guidelines of 150 minutes of physical activity per week (Rissel et al., 2012). However, we still have limited knowledge in terms of the change of trend of walking to/from transit from 2009 to 2017 and which specific socio-demographic groups have received the lower benefits of transit-related walking during this trend. Moreover, working trips act as a potential opportunity to promote the level of physical activity on the daily basis (Lindström, 2008). Thus, it is crucial to explore the change of transit-related walking to work and how it could provide recommended amount of physical activity.

This study examined the changes in terms of the percentages of walking to/from transit to work, the walk time to/from transit, and the percentage of reaching at least 30 minutes from the walking trip to/from transit to work from 2009 to 2017. Furthermore, this study also investigated the socio-demographic characteristics of those walk to/from transit to work and those who reached at least 30 minutes of transit-related walking and compared the difference between 2009 and 2017.

The data sources were National Household Travel Survey (NHTS) 2009 and 2017. This study used weighted logistic regressions to explore the socio-demographic characteristics of those who walked to/from transit to work and those who walked 30 minutes or more per day to/from transit to work in both

2009 and 2017.

In terms of the weighted percentage of walking to and from public transit to work between 2009 and 2017, the percentage of walking to public transit increased from 73.17% (95% CI: 69.11–77.24) to 76.28 (95% CI: 73.40–79.15). The percentage of walking from transit decreased from 86.08% (95% CI: 83.17–88.99) to 78.77 (95% CI: 75.76–81.78). The percentage of trips achieving the recommended level of physical activity (30 minutes or more per day) by walking to/from transit work solely has a slightly increase from 9% in 2009 to 9.5% in 2017. The weighted percentage for white populations walking to/from transit to work significantly increased from 41.97% (95% CI: 35.76–48.17) in 2009 to 58.65% (95% CI: 54.60–62.69) in 2017, while the weighted percentage for African Americans (30.12% to 21.79%) and Hispanics (25.33% to 16.73%) significantly decreased from 2009 to 2017. Lower-income populations were more likely to walk to/from transit to work and to reach 30 minutes of walking per day in both 2009 and 2017. High population density areas were related to more transit-related walking trips to work in both 2009 and 2017.

This research revealed the potential benefits of having regular transit-related walking to work in reaching the recommended level of physical activity. Generally, the percentage of people who walked to/from transit to work and who walked at least 30 minutes or more per day has a slight increase from 2009 to 2017. However, for low education, low-income, and minority populations, the percentage decreased. Policymakers in terms of transit location and service should consider low-education, low-income, and minority populations to address potential equity issues. Further studies should explore the detail in terms of the change of transit-related walking due to the transit infrastructure investment.

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Key Words: Transportation, physical activity, active commute, public transit

TRIP CHAINING, GENDER AND HOUSEHOLD STRUCTURES
Abstract ID: 88
Individual Paper Submission

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Since the 1990s, significant federal funding has supported programs to improve air quality through reduced emissions. These programs encouraged reducing overall vehicle miles traveled (VMT) and using public transit (U.S. EPA). The success of these programs is highly related to the flexibility of commuters to change and possibly recognize their daily activities. Accordingly, researchers have recognized the importance of trip chaining, the linking of spatially and temporally interrelated trips within a single journey. The effects of trip chaining on VMT may be both ways. On one hand, given the time constraints, trip chaining may potentially lead to greater efficiency and reduced VMT (Primerano et al., 2008). On the other hand, trip chaining is typically associated with decreased flexibility in terms of multi-modality, and directly in conflict with programs that encourage public transit usage. Moreover, if individuals integrate

non-work trips into their commutes, this could lead to heavier peak-hour congestion and increased travel costs (Hensher and Reyes, 2000).

Growth in the number of two-earner households and changing roles of women in society have increased the number of commuters, and led to changes in commuting pattern characteristics (Rosenbloom, 2004; Crane, 2007). One such characteristic is trip chaining, where non-work activities are conducted on the journey between home and work. As women have entered the labor force, more non-work trips such as shopping and family-errands have been pushed into work trips (McGuckin et al., 2005). Although trip chaining is a growing phenomenon, the underlying factors that affect such decisions are not investigated in a detailed manner (Primerano et al., 2008; Chen and Akar, 2017). Limited work has been done to take into consideration the mixed effects of gender and household structures (e.g., single earner- and dual-earner households). Therefore, the analysis of trip chaining by gender and household structures may lead to a better understanding of travel behavior and provide a more appropriate framework for examining various transportation policy issues.

Using data from the 2017 National Household Travel Survey, the primary purpose of this study is to examine the factors associated with trip chaining, with a focus on gender and household structures. We first analyze trip chaining characteristics by simply assessing the descriptive statistics across gender and household structure categories. We then employ negative binomial regression models in order to examine the factors associated with the number of stops based on selected major non-work activities such as dropping off or picking up others, buying goods, and buying meals.

Some of key findings are as follows: 1) women make more stops than men regardless of household structure, especially, for dropping off or picking up other individuals; 2) while increases in household size are likely to decrease the number of stops, increases in the number of children lead to more trip chaining; 3) people living in rural neighborhoods are more likely to make stops for buying goods or meals as compared to those living in suburban neighborhoods; 4) those in rural neighborhoods are less likely to make stops for dropping off or picking up others; 5) those who make stops are more likely to be auto-users; 6) women in dual-earner households with children are likely to have more trip chaining than others; 7) men and women in dual-earner households living in higher population density areas are likely to have more trip chaining in order to drop off or pick up someone or buy meals.

The findings of this study provide empirical evidence that gender and household structures (single-earner and dual-earner households) are important determinants of trip chaining behavior and the corresponding activities such as dropping off or picking up others, buying goods, and buying meals.

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Key Words: trip chaining, gender difference, single- and dual-earner households, a negative binomial regression model

ANALYZING TRAVEL BEHAVIOR OF OLDER ADULTS: WHAT ARE THE DETERMINANTS OF SUSTAINABLE MOBILITY?

Abstract ID: 105
Individual Paper Submission

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The world is at the edge of a great demographic shift. The number of persons aged 65 years or over is projected to double by 2050 worldwide (United Nations 2019). To support governments in making their communities more age-friendly, the World Health Organization (WHO) launched the Global Age-Friendly Cities project. Age-friendliness of a community can be evaluated under eight domains: outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information, and community support and health (World Health Organization 2007). Previous studies show that transportation is a key element for the wellbeing of older adults and the lack of mobility is associated with an increased rate of social isolation and depression among elders (Banister and Bowling 2004; Ragland et al. 2019).

In the United States, the most dominant mode of transportation amongst older adults is privately owned vehicles with a 91% share among all options (Shen et al. 2017). Aging-related limitations such as sensory changes and functional impairment may negatively affect older adults' ability to drive as they age. This may lead to the loss of mobility in the long-term for aging adults. Therefore, the promotion of sustainable travel alternatives such as public transport, walking, and bicycling is crucial for the mobility of older adults. Consequently, it is important to analyze the travel patterns and behavior of older adults to identify the factors that promote sustainable mobility.

This paper contributes to the literature by analyzing the determinants of sustainable mobility among older adults. The dataset used for this study is an age-friendly community survey conducted in Columbus, OH from September to November in 2016. The respondents of the survey answered questions about the above-mentioned age-friendly domains. We analyzed the valid responses of 695 older adult residents (50 years and older) using a multinomial logistic regression to investigate the individual and household level determinants of sustainable mobility. Our dependent variable, travel preference, has three categories, namely auto user (individual uses the auto alternative only), non-auto user (individual uses only non-auto alternatives such as walking, bicycling, and transit), and multimodal user (individual uses auto and at least one non-auto alternative). These preferences can be referred to as unsustainable, sustainable, and quasi-sustainable alternatives respectively. We include three groups of independent variables in our analysis: (1) socio-demographics, (2) lifestyle-related factors, and (3) built environment characteristics. The socio-demographics cover variables such as age, gender, race, income, and employment status. Lifestyle-related factors include health status, living alone, and having others to ask for a ride. Lastly, the built environment characteristics include access to well-maintained and safe parks, access to crosswalks with pedestrian countdown timers, retail density, mixed land-use, and frequency of transit service. We also create interaction terms between built environment characteristics and the categorical age variable to see whether there are behavioral differences across different cohorts of older adults.

The results of the multivariate analysis are mostly consistent with previous studies conducted elsewhere. We found that relatively older respondents were less likely to prefer using only non-auto modes of transport. We also found that older respondents were more likely to be multimodal users compared to being auto users only. Significant built environment characteristics namely having access to well-maintained and safe parks, having access to crosswalks with pedestrian countdown timers, mixed land-use, and higher frequency of transit service increased the likelihood of having more sustainable travel preferences. Interaction effects revealed the association between built environment characteristics and travel preferences differ by age cohorts. Our results provide a better understanding of the determinants of

sustainable mobility among seniors, which might be helpful in promoting sustainable transportation for older adults.

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Key Words: Age-Friendly communities, Older adults, Sustainable mobility, Multinomial Logistic Regression

AN ANALYSIS OF SHARED E-SCOOTER ORIGINS AND DESTINATIONS AT THE STREET-SEGMENT LEVEL
Abstract ID: 117
Individual Paper Submission

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Shared electric scooters, such as those provided by the companies Lime, Bird, and Jump, have popped up in hundreds of cities around the world at a breathtaking speed. Initially introduced in 2018 in Santa Monica by Bird, shared e-scooters have been rapidly adopted by millions of users worldwide, with an estimated 38.5 million trips in 2018 (DuPuis, Griess, & Klein, 2019; NACTO, 2019).

Dockless shared scooters present many planning challenges for cities, including the management of scooter parking, conflicts with pedestrians and vehicles, and safety, in particular preventing serious collisions with vehicles. Indeed, the regulations regarding where and how electric scooters should be used vary across states and cities (Fang, Agrawal, & Hooper, 2018; NACTO, 2019). In order to manage and plan for shared scooters, spatial analysis of patterns of scooter demand, including trip origins, trip destinations, and routes taken, is essential. Spatial analysis can inform both policy and operations in multiple ways, including allowing for the identification of major attractors as well as for determining those streets on which scooter-appropriate infrastructure would be most helpful.

This study examines spatial patterns of scooter use with a focus on origins and destinations in the Washington DC area. Our main data source is scooter availability data from June 2019 to September 2019, which was obtained from public APIs provided by the city (https://ddot.dc.gov/page/docklessapi). The raw data records the coordinates of available scooters with a specific timestamp, and each scooter has a unique ID that allows for tracking its location over time. After extensive pre-processing work such as addressing GPS location errors, we have developed an algorithm to infer passenger trips (i.e., start and end time, origin and destination). In addition, we have applied criteria within the algorithm to screen out

relocation trips and recharging trips, i.e. trips due to operations rather than travel. We augment the scooter data with other geospatial data such as building square footage, transit stops, tourist destinations, and hotels. Much of this data is available from Washington DC's open data portal (https://opendata.dc.gov/).

A preliminary analysis shows that most scooter trips[LM1] [JY2] are under 2 miles, with a duration of under 20 minutes. Trips are highly clustered in major tourist attractions such as the US capitol and Lincoln memorial, which possibly indicates the prominence of leisure and/or tourist use. A majority of trips take place during the afternoons and evenings, which suggests that scooters are mainly used for non-work related trip purposes (Mathew, Mingmin, Seeder, Li, & Bullock, 2019).

We will build trip generation and trip attraction models to understand the built environment and demographic factors that influence trip origins and destinations. We focus analysis of independent variables on building square footage, transit stops (metro and bus), and tourist destinations based on the derived theory of travel demand, i.e. that most trips are taken to reach destinations. In addition, we will examine demographic factors that are likely related to scooter use, such as age and education (Shaheen & Cohen, 2019). The unit of analysis will be the street segment, which we believe is the most relevant in planning for scooter infrastructure, including parking infrastructure and routing. To further develop the understanding of spatial patterns of scooter demand, we examine how these spatial patterns vary over time (hours of the day, days of the week).

The spatial analysis should result in the identification of areas of high trip attraction; such areas can be planned for adequate scooter parking infrastructure. In addition, we hope to ascertain areas of scooter undersupply and oversupply, which can then be used by cities or scooter operators to identify how better to rebalance the distribution of vehicles.

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Key Words: E-scooters, Micromobility, Travel demand, Spatial analysis, Trip attraction

THE ANALYSIS OF NEAR-MISS COLLISION BETWEEN PEDESTRIANS AND PERSONAL TRANSPORTATION VEHICLES: AN APPLICATION OF UNMANNED AERIAL VEHICLES (UAV)
Abstract ID: 133
Individual Paper Submission

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With the growing popularity of personal transportation vehicles such as bicycles, skateboards, and electric scooters, a conflict between pedestrians and personal transportation vehicles is an emerging safety concern. Although the intensity and damage of the conflict are much less severe than the automobile-involved collisions, the conflict between pedestrians and personal transportation vehicle users becomes not only a nuisance but also a significant safety concern for both groups. The conflict includes not only collision but also the near-miss collision between the groups. Although near-miss collision probably

contributes to discouraging walking and the use of personal transportation vehicles, this topic has been understudied. One of the primary reasons for this understudy is the lack of data that represents the near-miss collision cases between pedestrians and personal transportation vehicles since the near-miss collisions tend not to be reported to police or insurance companies, the primary collision data sources.

The purpose of this paper is to identify the contributing factors to a near-miss collision between pedestrians and personal transportation vehicle. We collected video clip data using an unmanned aerial vehicle (UAV) on the campus of California State Polytechnic University, Pomona, and geocoded locations, movements, and behaviors of pedestrians and personal transportation vehicle users including average speed, distance between two persons with different modes, and preventive actions by personal transportation vehicle users to avoid near-miss collision (if any). Employing a multilevel logit regression model, this paper attempts to identify how attributes and behaviors of cyclists, skateboarders, and electric scooter riders are associated with near-miss incidents. The outputs of the model indicate that higher speed, non-bicycle modes (e.g., skateboard and scooter), and some preventive actions like reducing speed, deviating, and weaving increase the probability of a personal transportation vehicle to get involved in a near-miss collision. Our observations and model call for more careful safety interventions for skateboards and scooters. Findings from this paper will help transportation planners set appropriate actions and regulations that ensure traffic safety for both pedestrians and personal transportation vehicle users. They provide an insight into places like university campuses where these modes of transportation have become popular as well as many cities that experience the growing popularity of electric-scooter riders.

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Key Words: Pedestrian safety, Near-miss collision, Personal transportation vehicle, Unmanned aerial vehicle (UAV)

SPATIAL AND TEMPORAL HETEROGENEITY AMONG RIDEHAILING TRIPS IN CHICAGO, THROUGH THE APPLICATION OF CLUSTERING ALGORITHMS AND LATENT-CLASS REGRESSION
Abstract ID: 144
Individual Paper Submission

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Ridehailing refers to on-demand door-to-door ride services which are requested and paid for via smartphone apps. Under the hood, Transportation Network Companies (TNCs) such as Uber and Lyft in the United States market provide real-time matching of ride requests with non-professional drivers available nearby. Since its first introduction to New York City in the U.S. in 2013, it has become widely adopted first by relatively wealthy tech-savvy young professionals in cities, and later gradually by various segments in the population including those in suburbs and in low-income brackets. Obviously, ridehailing works as an effective means of transportation for individuals in diverse situations with unique lifestyles

and travel demand, while filling mobility gaps in the existing urban transportation market. However, ridehailing is also found at the center of heated debates, in part because of its mixed impacts on various parts of travel behavior and urban life. Recent studies find that ridehailing generates traffic congestion, increases energy use and emissions by its drivers while not serving passengers (i.e., through deadheading), and contributes to the declining trends of transit ridership in the U.S. In this context, one challenge that scholars and researchers face is a lack of rich information on ridehailing users and trips. To be specific, as for user characteristics, we have a (relatively) better understanding thanks to the addition of ridehailing-related questions to recent national and regional travel-diary data, and rich transportation surveys with a focus on attitudes and lifestyles vis-à-vis ridehailing adoption. However, as for trip characteristics, we have a limited understanding in part because such trip data are proprietary by nature and linked to sensitive information about users and their whereabouts. Thus, ridehailing trip characteristics, especially in relation to land-use characteristics of origins and destinations, have been less studied in the literature, preventing planners and policymakers from developing evidenced-based strategies to tackle the aforementioned negative externalities while promoting its mobility benefits.

In this study, we examine the spatial and temporal heterogeneity among ridehailing trips across the neighborhoods in the City of Chicago. In so doing, we analyze the full set of ridehailing trips taken within the city limit since November 2018. We take a two-step approach: first with a focus on ridehailing trips, and second with a focus on neighborhoods, from or to which such trips were produced or attracted. At the first step, we employ k-means and hierarchical clustering algorithms and identify distinctive groups of "ridehailing trips" and the way they were present in the Chicago neighborhoods, spatially and temporarily. With these groups, we then explore correlation patterns between the composition of these groups and the characteristics of origin/destination neighborhoods. In so doing, we employ rich information from the 2014-2018 US Census American Community Survey, General Transit Feed Specification (GTFS), walkscore.com, and Google Places API at the tract level. At the second step, we estimate latent-class regression models, which allow us to simultaneously identify distinctive groups of "neighborhoods" and the ways that each group differs from the other groups in terms of producing and attracting ridehailing trips. In sum, the first part of analysis will advance our understanding of the composition of ridehailing trips (and its temporal and spatial variations), and how it relates to socioeconomics and the built environment. The second part of analysis will identify distinctive sets of neighborhoods, each of which may demand unique and customized policy interventions that effectively regulate the negative externalities (e.g., substitution for public transit and non-pooled trips). This study contributes to the academic literature and ongoing policy discussions by providing a thorough investigation of heterogeneity present both at the trip and neighborhood levels.

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Key Words: Big data, Machine learning, Ridehailing, Latent-class modeling, Heterogeneity

TRAVEL PATTERNS, TIME USE, AND POVERTY AMONG PEOPLE WITH DISABILITIES
Abstract ID: 157
Individual Paper Submission

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Disability and poverty go hand in hand. Disability increases the risk of poverty because people with disabilities face institutional and physical barriers to education and employment. Lack of accessible transportation serves as one of the obstacles to employment as well as participation in leisure and recreational activities for people with disabilities (Páez and Farber, 2012). Conversely, poverty itself can be a catalyst for disability. People who lack economic resources to seek health care services are more likely to develop serious impairments. This "vicious cycle" of poverty and disability often makes people with disabilities among the "poorest of the poor". The cycle of poverty and disability can persist across generations because the additional costs attributable to impairment make it hard for households with disabled members to save and accumulate assets (Mitra, 2006).

The transportation literature demonstrates that access to reliable transportation is essential for escaping poverty (Smart and Klein, 2018). This has led some to suggest that improving transportation options for low-income people is a good way to reduce poverty (Lucas, 2012). However, a transportation approach to solving poverty issues may not be as straightforward for people with disabilities for several reasons. Depending on the type of impairment, some people with disabilities have trouble using public transportation (e.g., inaccessible bus stops and train stations) while some cannot drive (e.g., visual impairment). These challenges increase the cost of using transportation. For instance, wheelchair users pay a premium for accessible vans. These relatively higher costs compound the financial burdens for people with disabilities, who tend to have lower incomes on average. Finally, the Bureau of Transportation Statistics reports that while the majority of people with disabilities travel in private vehicles, they are more likely to ride as passengers than people without disabilities (Brumbaugh, 2018). This implies that people with disabilities are more likely to rely on their family members or caregivers for a ride. To the extent that access to automobiles and time for caregiving are more limited in low-income households, the chauffeuring responsibilities associated with disability adds yet another dimension of financial burden.

This paper explores the relationship between disability, transportation, and poverty using the 2003-2018 multi-year American Time Use Survey-Current Population Survey (ATUS-CPS) and 2014-2018 American Community Survey (ACS) 5-year estimates. I use these data to examine the differences in travel behaviors and activities among working-age adults by disability and poverty status, paying special attention to the areas in which poverty compounds the challenges of disability. Specifically, I focus on the following outcomes: car ownership, travel mode, time spent on out-of-home activities, and time spent caring for family members.

Based on these analyses, I discuss the promises and limitations of current transportation programs for people with disabilities. I argue that transportation programs for people with disabilities should not focus solely on mobility constraints or inaccessible transportation infrastructure and systems. We should broaden our view to explicitly consider disproportionately high rates of poverty among those with disabilities. This will require a more diverse toolkit that will support community access and integration more broadly. I close by suggesting how transportation research and transportation planning can incorporate the systematic cycle of poverty in studying other marginalized populations (Mitra, 2006).

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Key Words: transportation equity, disability studies, poverty, travel behavior, activity pattern

PARTNERSHIPS IN VALUE CAPTURE FOR PUBLIC TRANSPORTATION PROJECTS IN SHENZHEN, CHINA

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The contemporary literature identifies a positive relationship between proximity to urban rail stations and land value, which provides an opportunity to adopt the Value Capture (VC) mechanism (Cervero and Duncan, 2002). However, VC requires multiple actors to work together and share the risks and benefits of incremental increases in land value arising from any transport investments (Suzuki et al., 2015). This paper explores the complexity of relationships between various actors in the Qianhai Metro Station Project, Shenzhen, China, VC project. In order to shed light on the underlying partnership structures, the research builds on public value management (Moore, 1995) and partnership (McQuaid, 2000; Hodge and Greve, 2007) theories. It develops a conceptual framework which links concepts of political-institutional partnership, financial partnership, and social partnership to explore a VC mechanism. The field work was conducted in 2019 and involved 25 semi-structured interviews with key stakeholders. In addition, government documents, company reports, academic articles, and media news supplemented the information to enrich the understanding of interviewees' narratives.

The research finds that Shenzhen has a stable political agenda, consistent policies and plans, along with an experimenting approach to support VC development. The partnership between the Shenzhen Municipal Government (SZMG) and the Shenzhen Metro Corporation (SZMC) mobilises land resources through policy and institutional innovation in land transactions. Institutional and policy innovation involved decentralising power in favour of SZMC for the land use development, which has created an enabling environment in the VC process. The decentralisation of power enhances the role of SZMG in negotiation with local authorities and the central government agencies. Such a political-institutional relationship provides a foundation for the success of VC projects in Shenzhen.

The research also finds that the SZMC actively establishes working relationships with developers, which help to improve financial partnership for property development. This relationship helps in sharing risks and benefits, developing a unique brand and continuously assessing the market condition. SZMC has prepared a clear mechanism for communication and sharing resources with developers to achieve mutual financial objectives.

In addition, the research finds Shenzhen has adopted a relatively better public participation and communication plan as compared to other Chinese cities. This process develops mutually respectful relationships among SZMG, SZMC, and the public, which eventually developed into a social partnership. The SZMG and the SZMC developed a clear communication channel with community groups and professional networks, as well as making efforts in developing trust between the local government and public and consequently contribute to Shenzhen's VC projects. Moreover, the local media utilise brand strategy to shape a project image to the public. Overall, such a trustworthy relationship avoids opposition to the project from the public.

The paper concludes that all three types of partnerships are crucial in making the VC project successful. This paper has significant implications for both theoretical and managerial perspectives. It contributes to the transport planning literature by integrating public value management and partnership theories and extending boundaries of three different partnership domains to examine a transportation planning issue. It also sheds light on how the unique relationships among local and central governments, local transit agency, developers and the public work to enable VC to work in China. The findings of this paper will be useful for urban planners, governmental officials, local transit agencies, and all who may see and seek VC

as an innovative funding mechanism for public transport development.

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Key Words: value capture, transportation planning, partnership, public value management, China

WALKING AND CYCLING SAFETY, 2000-2018: THE GROWING GAP BETWEEN THE USA AND WESTERN EUROPE
Abstract ID: 176
Individual Paper Submission

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Walking and cycling can provide physical activity that promotes physical, mental, and social health. They are also environmentally, socially, and economically sustainable means of urban travel. Thus, it is important to promote more walking and cycling among all portions of the population.

As shown by many studies, one of the most important obstacles to encouraging more walking and cycling is the actual and perceived risk of injury or death from walking and cycling, especially in car-dependent countries such as the USA, Canada, and Australia, which have much lower rates of walking and cycling than most European countries.

Using official national data for each country, this article calculates trends in walking and cycling fatalities per capita, per trip, and per km in the USA, the United Kingdom, Germany, the Netherlands, and Denmark from 2000 to 2018. Relative to the base year 1990, both pedestrian and cyclist fatalities per capita per year fell in the United States, United Kingdom, Germany, Denmark, and the Netherlands over the period 1990- 2010, although the declines were much smaller in the USA than in the other four countries. For example, the per-capita pedestrian fatality rate for the USA fell by 36% compared to declines of 73% in the UK, 72% in Denmark, 69% in Germany, and 61% in the Netherlands. Over the same period 1990-2010, the per-capita cyclist fatality rate fell by 24% in the USA compared to 68% in Denmark, 65% in the Netherlands, 57% in Germany, and 53% in the UK. The differences are more striking over the last period 2010-2018. The per-capita pedestrian fatality rate rose in the USA by 20% compared to a much smaller increase of 4% in the UK and continuing declines of 28% in Denmark, 13% in the Netherlands, and 10% in Germany. The per-capita cyclist fatality rate rose by 11% in the USA compared to a much smaller increase of 2% in Germany, no change in the Netherlands and Denmark, and an 11% decline in the UK. Trends in rates per trip and per km were similar for trends per capita. Next, we examine various possible reasons for the much higher walking and cycling fatality rates in the USA compared to the other four countries, and the much greater progress of the other countries in improving walking and cycling safety over the past two decades. Next, we focus on the sharp increase in walking and cycling fatalities in the USA from 2010 to 2018, examining possible explanations for worsening

traffic safety. We conclude with recommendations for improving walking and cycling safety in all five countries, but especially in the USA, which lags far behind the other four countries.

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Key Words: walking, cycling, safety, active travel, USA, Germany, Denmark, Netherlands, UK

THE ALLOCATION OF TRANSPORTATION INVESTMENTS USING A MULTI-OBJECTIVE OPTIMIZATION APPROACH: BALANCING EFFICIENCY AND EQUITY IN ACCESSIBILITY TO MULTI-USE PATHS
Abstract ID: 180
Individual Paper Submission

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Transportation policymakers and planners have been increasingly devoting their efforts in encouraging active transportation to deal with urban problem such as traffic congestion, air pollution, and obesity (City of Fresno, 2016; Ermagun & Samimi, 2015). Active transportation typically refers to walking and biking as major non-motorized transportation options. The promotion of active travel options would need well-connected and accessible streets with safe pedestrian and bicyclist paths and corresponding infrastructure. Multi-use paths, including footways, cycleways, paths, and pedestrian sidewalks in this study, are designated for recreational and utilitarian uses by bicyclists and pedestrians. In response, policymakers, planners, and other sustainability advocators are collaborating to develop and manage these paths to increase their accessibility and usage as a strategy to promote active travel.

However, limited public resources for investments challenge policymakers when multiple objectives compete in the decision-making process. For instance, policymakers often face the challenge of balancing the three objectives (environment, efficiency, and equity) in pursuing sustainability. In the case of promoting accessible multi-use paths, it becomes a challenge that how to allocate limited resources to develop and manage multi-use paths for better accessibility by considering system efficiency and spatial equity. Optimization modeling has been widely used to optimize decision-making through land-use planning and capital investments, such as for economic development, transportation infrastructure, public facilities, and environmental issues (Li & Parrott, 2016; Wang & Guldmann, 2015; Yeo & Guldmann, 2006). However, there is little research focusing on multi-objective optimization problems that maximize the total accessibility to multi-use paths over a city while minimizing the gap between low- and high-accessibility neighborhoods, and thus needed. Therefore, this study is to propose such a modeling framework, through an optimal allocation of active transportation investments, to maximize the economic efficiency of investments while minimizing the accessibility gaps among neighborhoods in the city.

The methodology is composed of (1) the calculation of accessibility to multi-use paths using the network

analysis package in ArcGIS, (2) the estimation of a Geographically Weighted Regression (GWR) model that regresses the accessibility on the existing transportation investments, and (3) the problem solving of a multi-objective optimization model to allocate future transportation investments for policies which consider both efficiency and equity. The accessibility to multi-use paths measures the total length of walkway and bikeway one could access to from the own block group (centroid) within a 30-minute cycling ride under the existing transportation network in Fresno, California. A GWR model is used to estimate the local relationships between the accessibility to multi-use paths and the former transportation investments, while controlling for the socioeconomic and other built environment effects. The modeling results would point out the most effective locations for future transportation investments. With the GWR results embedded into an optimization framework, it becomes possible to solve the allocation problem of future transportation investments to assess the effects of different active transportation policies. This multi-objective optimization modeling framework would shed lights on the problems of balancing the two competing policies that one focuses on the economic efficiency of transportation investments while the other focuses on the mitigation of active transportation inequality.

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Key Words: accessibility, multi-use path, transportation planning, geographically weighted regression, optimization

FORECASTING THE IMPACT OF METRO RAIL IMPLEMENTATION ON MOBILITY AND ACCESSIBILITY: CASE OF DHAKA, BANGLADESH
Abstract ID: 186
Individual Paper Submission

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Dhaka, the capital of Bangladesh and home of around 20 million inhabitants, has been facing difficulties in serving the demand of its citizens in terms of transportation as the traffic condition in the streets is getting worse day by day. The need for transportation infrastructure is increasing, and the existing modes and roadway spaces available for the transport operations are not capable of meeting the demand (Dhaka Transport Coordination Authority, 2004). As a result, enormous traffic congestion and the gridlocked situation on the streets prevail, which leads to under-performance of the existing system. To better address the rapidly deteriorating condition, the government had performed several research studies dating back to the early 1990's (Dhaka Transport Coordination Authority & Japan International Cooperation Agency, 2015).

One of the most frequent recommendations from these previous studies was to implement elevated expressway and high capacity mass rapid transit systems. Cities around the world are applying different mass rapid transit options such as metro rail, bus rapid transit, expressways to improve and enhance the mobility and accessibility of their citizens. Dhaka city is no exception to the trend, has emphasized mass rapid transit options as well. The metro rail project (MRT 6) proposed in the Strategic Transport Plan (STP) has chosen to implement first and is underway to be implemented in 2018 (Dhaka Transport Coordination Authority & Advanced Logistics Group (ALG), 2015). As the deteriorated traffic situation influences the travel time and availability of modes the most, the emphasis was primarily put upon to reduce the travel time and to make available various travel modes to the users of the system, which eventually helps in ensuring mobility of the travelers. While mobility is concerned with the performance of transport systems in their own right, accessibility adds the interplay of transport systems and land use patterns as a further layer of analysis (Geurs & Van Wee, 2004).

The objective of this research was to evaluate the potential changes in accessibility and mobility by the implementation of the metro rail. For that purpose, a set of mobility indicators were used, and the day to day trip making behavior of the city dwellers around the proposed metro rail route was analyzed to get a conclusive result on the existing mobility pattern. Afterward, the influence of the metro rail on mobility was explored and was used for the comparative analysis between the current situation and the anticipated future scenario. Accessibility was also assessed using traditional accessibility measurement techniques, which are used to evaluate transport accessibility in general around the world. The connectivity between the metro rail route and different land uses were given due importance in assessing the accessibility. The condition of mobility and accessibility of the existing system appeared to be far away from the optimum level where it should have been to make everyday urban life sustainable. The assessment leads to the identification of the influences of the proposed metro rail on mobility and city dwellers. Also, it stretches the opportunities to make any improvisations required to mark positive impacts in the upcoming years. This study, therefore, proposed to implement an integrated system to enhance access to and from the significant employment and other attraction points. It also suggested considering the ingress and outgress issues to the metro rail station. Also, the authors suggested that ensuring the accessibility to the metro rail station itself should be given proper importance in the planning and implementation process.

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Key Words: Dhaka, Mobility, Accessibility, Metro Rail

IMPACT OF LICENSE SWAPPING POLICIES AND VARYING DRIVING EXPERIENCE ON TRAFFIC VIOLATIONS IN A MULTI-CULTURAL SETTING OF ABU DHABI, UAE
Abstract ID: 187
Individual Paper Submission

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In the Middle East, the United Arab Emirates (UAE) census reports the expat population to be around 81% of the total population (SCAD, 2018). The expatriates are primarily from the south and eastern

nations such as India, Bangladesh, Pakistan, and the Philippine, from European nations and the Americas. Henceforth, UAE is one of the most multicultural countries in the middle-east. However, such a multi-cultural environment with different driving behaviors and experience may impinge safe driving conditions on the road leading to higher chances of traffic violations and accidents (Marzooqi et al., 2010). Further, an individual's predisposition to some trails makes him or her vulnerable to accident involvement. Personality constructs, such as aggressiveness, selflessness, and normlessness impact a person's tendency to commit driving errors or violations (Yang et al., 2013, Hassan et al., 2017)

The UAE Ministry of Foreign Affairs and International Cooperation permits individual license holders from 33 nationalities to swap their driving licenses for local UAE driving licenses. These countries are primarily from the Gulf Cooperative Council (GCC) region, the European nations, North America, New Zealand, and Australia, along with South Africa, Singapore, and Hong Kong. Other nationalities have to pass the theory and driving test before issuance of a local license.

This study aims to analyze the impact of this policy on an individual's traffic violations in Abu Dhabi. Moreover, the study aims to examine the relationship of multi-cultural drivers on violations and how individuals of different origins, ages, income, and pre-disposition to driving affect their driving behavior. Therefore, this study investigates the relationship between individual characteristics and driving behavior variables on the number of violations in Abu Dhabi.

Responses from 364 individuals surveyed at five ADNOC Vehicle Inspection Centres (VIC) in Abu Dhabi were analyzed for this study. Individuals responded to questions concerning their usual driving behavior, and the traffic fines and accidents in their home country before moving to UAE, and fines and accidents in the UAE along with their individual characteristics.

The data were analyzed using the two-way t-test, ANOVA, and regression. The results indicate that while the driver characteristics, experience, and behavior varied for individuals who switched versus had to take a test for the UAE license, the licensing policy impacted certain traffic violations such as speeding and parking. Although both the groups varied statistically with regards to a violation in their home country, they did not differ statistically in the UAE. The outcome of this study provides policy implications for improving driving conditions and safety in UAE in general and specifically for Abu Dhabi.

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Key Words: Licensing Process Policy, Multi-cultural, Violations, Abu Dhabi, United Arab Emirates

EXPOSURE TO DIVERSITY ON TRANSIT: AN INDIVIDUAL-LEVEL APPROACH USING SOCIAL INTERACTION POTENTIAL
Abstract ID: 195
Individual Paper Submission

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Social interaction potential (SIP) is a quantitative metric employed in planning, transportation, and geography research to measure opportunities for social engagement by describing the colocation in space and time of individuals in the population (Farber et al. 2013). One of the key features of the SIP metric is that it applicable to study the social environment of various land use mixes, transportation networks, and commuting patterns. This metric has previously been constructed using aggregate geographic data for a city or region and reflects the ways that spatial structures are conducive to, or inhibit interpersonal interaction between residents. More recently, scholars have begun to develop more granular definitions of SIP, where interaction levels are simulated and then empirically tested at much smaller geographies (Li and Farber 2016).

This paper builds particularly on the work of Farber et al. (2015), who use aggregate commuting data to decompose the SIP metric to measure exposure to diversity in the population. Our study uses SIP to measure individual, trip level exposure to diversity on public transit, and second, changes in this level of exposure around the addition of new services to the network. We collected survey data on the travel patterns of riders on a newly added bus route to the Southeastern Pennsylvania Transportation Authority's (SEPTA, Philadelphia metropolitan area) system. This unique dataset describes essentially the full geographic scope of a sample of riders' journeys, starting at the intersection nearest to where they begin their trip, and ending at the intersection nearest to where they conclude. Data was also collected on each transit route utilized on the journey, and the travel mode(s) taken before/after using transit.

We employ these data to measure the overall SIP of an individual rider's journey, the contribution of specific trip components (such as the segment of the trip utilizing the new bus service), and the contribution of certain modes (such as walk or cycle to the first bus). We also collected data on whether riders took this same journey before the addition of the new bus service. For these riders who historically took the same journey, we measure changes in SIP based on the rider's previous route.

By measuring SIP at the individual, trip level, we contribute to an understanding of public transit not just as a means of moving in between sites of interaction, but also a dynamic and rich space of sociality and encounter (Wilson 2011; te Brömmelstroet et al. 2017). The findings from this study can help inform the broader understanding of accessibility and diversity in the transportation planning literature, as well as pose another input, social interaction, as a benefit derived from the addition of new transit services.

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Key Words: social interaction potential, transit, exposure, diversity, commuting

HOME AWAY FROM HOME, OR WORK AWAY FROM WORK: WHAT ARE THE TRAVEL EFFECTS OF WORKING FROM HOME?

Abstract ID: 197
Individual Paper Submission

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Observers have speculated on the potential for telecommuting to reduce total driving in the United States since at least the late 1970s (Schiff 1979). As the rise of the internet made telecommuting increasingly possible for greater numbers of workers in the 1990s, some speculated that opportunities for remote work would reduce travel to such an extent that planned highway and transit capacity improvements would become unnecessary (Mokhtarian 1998), and several scholars published conceptual and empirical studies estimating the likely impacts of telecommuting on household travel (Salomon 1998; Mokhtarian 1998). However, predicted reductions in travel have generally not materialized (Mokhtarian 2009), and more recent studies have suggested that telecommuting may be a complement to rather than a substitute for personal travel (Zhu 2012). How does working partly or entirely from home influence the number of daily work-related and non-work-related trips that a worker makes?

I used data from the 2003 to 2018 waves of the American Time Use Survey to classify workers into three categories: those who work entirely away from home, those who work entirely from home, and those who do some work at home and some work away from home. I estimated two negative-binomial regression models to predict the number of work-related and non-work-related trips a worker made on the survey day, based on whether they worked exclusively from home, exclusively away from home, or both from home and away from home, controlling for sex, race/ethnicity, income, household structure, and metropolitan area. I find that working exclusively away from home continues to be the most common arrangement, representing about 80 percent of workers. The remaining workers are approximately evenly split between those who worked exclusively from home on the survey day and those who split their worktime between home and one or more other locations. Among those who worked on the survey day, those who worked exclusively from home made fewer work-related trips and fewer non-work-related trips than those who worked exclusively away from home. However, those who did some work at home and some work away from home made more trips in both categories than those who worked exclusively away from home.

These findings suggest that the net effect of telework opportunities on overall travel demand is complex, uncertain, and may even be positive for many workers. Telecommuting is likely to complicate household travel patterns, rather than to simply reduce total travel. Transportation networks that provide travelers with spatial and temporal flexibility, as well as land use patterns that bring non-work destinations in closer proximity to both homes and workplaces will be increasingly important if remote work becomes more common in the future.

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WHAT CREATES URBAN LIVABILITY IN TRANSIT STATION AREAS OF SEOUL, SOUTH KOREA
Abstract ID: 212
Individual Paper Submission

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As Dittmar and Poticha (1986) redefined the typical term of Transit-Oriented Development (TOD) based on performances in the book of The New Transit Town, TOD planning achieves five main goals including location efficiency, rich mix of choices, place making, and resolution of the tension between node and place. These are closely related with "livability" issue in urban life. Urban livability considers the overall factors that create better quality of life including built and natural environments, economic prosperity, social stability, educational opportunity, cultural, entertainment and recreational possibilities. This research will focus on the topic of urban livability around station areas in Seoul, South Korea. First, this research will investigate different neighborhood contexts including accessibility, land-use, buildings, and demographics to understand diverse urban factors that potentially influence on urban livability around TOD areas. All implementations of TOD planning are not same in every station development area across the subway networks, even though some stations have similar volumes of daily transit ridership. Therefore, it is important to investigate different types of urban mixed environments. Second, this research will reveal the complexity of urban contexts and create intuitive groupings for TODs in Seoul using a cluster analysis method. The cluster analysis enables to classify urban contexts through the evaluation of large amounts of urban data and separates them into the desirable number of categories for different scenarios. The outcome will show a specific number of typical TOD typologies across station areas in Seoul. A clustering analysis can also investigate the similarities and differences between groups in terms of their urban form, urban structure, land use, building use, density, demographics, and travel behavior. After the clustering progress, this research will assemble the similar urban characteristics of station development areas where specifically has a strong effect of urban livability. A typical TOD planning setting promotes well mixed-use environments including housing, office, retail, entertainment, industry, and community but if TODs focus on their performances it could be different aspects to develop TOD planning. This research will contribute to understand TOD performances in terms of urban livability through exploring of the actual TOD types in Seoul. This also helps to investigate an ideal model for TOD's policy implementation and practice.

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Key Words: transit-oriented development, livability in urban life, sustainable city, accessibility, urban typology

TRANSIT-BASED ACCESSIBILITY AND URBAN DEVELOPMENT: AN EXPLORATORY STUDY OF SHENZHEN BASED ON BIG AND OPEN DATA
Abstract ID: 229

Individual Paper Submission

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TOD degree, the correlation between transit-based accessibility and urban development, reflects how transit-oriented development shapes urban form. The paper examines the shifting patterns of TOD degree and its correlates by using publicly available big and open data (BOD) such as point of interest (POI) and OpenStreetMap data in Shenzhen, a fast-growing city experiencing rapid growth/changes in metro stations/lines and POIs in the past decade or so. Those BOD have finer spatiotemporal resolution than traditional/official data such as censuses and land use maps. It illustrates new ways to quantify TOD degree and its correlates in two different years (2014 and 2017). It finds two effects of bus- and metro-based accessibility: (1) Path-dependence effects: it was the number of bus stops (as a proxy for transit-based accessibility) that influenced urban development (measured by the number of POIs) around a (planned) metro station the most in 2014, when the local metro system was largely in its childhood; (2) Substitution/Enhancement effects: the impacts of the metro-based accessibility (measured by the average time to the two central business districts) on urban development became larger than those of the number of bus stops as the local metro system entered its adolescence. It recommends that decision-makers should systematically consider and harness those effects to better promote TOD degree.

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Key Words: TOD, TOD degree, point of interest, accessibility, Shenzhen

FAIR FARES: EXAMINING FARE POLICY INNOVATIONS TO IMPROVE BOTH TRANSIT PERFORMANCE AND EQUITY

Abstract ID: 244
Individual Paper Submission

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Transit fares are often unfair. "Flat" fares may seem equitable at first blush, but charge different travelers the same price for trips of different lengths, modes, and time of day, effectively cross-subsidizing longer, more expensive-to-provide trips with revenues from shorter, less-expensive-to-provide trips (Nuworsoo, et al., 2009). Given that higher-income transit users tend to take longer trips than lower-income users, flat fare schedules are thus a cross-subsidy of the better-off by the less well-off, on average. Fare schedules that charge different fares to different user groups based on ability to pay can help mitigate vertical equity concerns, while distance-based fares that vary by trip distance and/or time-of-day do a better job of matching the price charged for transit service to the cost of serving that trip (Farber, et al., 2014). However, distance is only one determinant of the unit cost of providing a transit trip. Other factors include the mode of transit used, passenger counts, vehicle load factors, and the specific characteristics of the urban area being served. The complexity of calculating marginal costs of serving specific transit trips has historically been magnified by a lack of individual transit user travel data. At the same time, equity concerns, a firmly-established history (in the United States) of flat-rate transit fares, and risk-averse

transit management (Yoh, et al., 2010) have disincentivized transit fare policy innovation. This situation is changing as real-time individual-level travel data become increasingly available and declining farebox revenues, coupled with restrictions on the use of federal transit funds for operating expenses, incentivize transit agencies to better match the cost of providing transit with revenues received.

In this project, we review innovative fare policies currently being explored or implemented by transit agencies both in the United States and internationally. We identify the characteristics of transit agencies (and the areas they serve) that are currently exploring or implementing innovative policies. We evaluate the success of these policies in generating revenues and, in particular, addressing equity concerns. We are particularly interested in the role of emerging technologies in enabling transit agencies to differentiate among types of travelers and trips, thereby enabling innovative methods of payment. We specifically examine fare schedules that vary based on time, distance, and customer type. We are also interested in examining waxing experimentation with "fare free" transit, for which travelers are not charged at all. Given that eliminating payment requirements also eliminates the need for fare policy enforcement, what does the net fiscal impact of free fare policies tend to be? What are the opportunity costs? In short, we are interested in understanding, based on current practice and research, what the future of transit fare policy should be.

We contribute to existing literature by summarizing the current landscape of innovative transit fare policy and analyzing these policies through an equity and efficiency lens. The results of our analysis will be used to shape our future work on the fiscal and performance implications of innovative fare policies for specific agencies. By better understanding how emerging technology can help to match the marginal costs of serving different traveler and trip types, our findings can help ensure that fare policies are equitable but also economical. In doing so, we endeavor to provide actionable guidance for transit agencies as they move toward fare policy reform.

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Key Words: transit, fares, equity, innovative, policy

EXAMINING FACTORS THAT AFFECT OD-LEVEL BIKE-SHARE RIDERSHIP: FOCUSING ON THE EFFECTS OF RELATIVE EFFICIENCY BETWEEN PUBLIC TRANSIT AND BIKE-SHARE
Abstract ID: 260
Individual Paper Submission

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As urban problems such as traffic congestion, air pollution and energy depletion have been accelerated over the past decades, bike-share has emerged as one of the alternative transportation modes that is environment-friendly and sustainable (Shaheen et al., 2010). A great deal of research in this field has focused on examining various factors that affect bike-share demand at the station-level (Faghih-Imani et

al., 2014). While factors vary in importance depending on the study sites and methodology they adopted, bike-share ridership has been found to be closely related to (1) the surrounding built environment, (2) weather and temporal variations, and (3) public transit accessibility (Mattson & Godavarthy, 2017). However, there have been only few attempts to understand bike-share ridership at origin-destination (OD) level. The lack of relevant studies has been mainly due to lack of available data on the travel routes between OD pairs of bike-share use (Romanillos et al., 2017).

The objective of this study is to extend previous works exploring factors that affect bike-share ridership at OD-level, taking case of Seoul's public bike-share program ("Seoul Bike"). Specifically, we take into account the effects of the relative efficiency between bike-share and public transit, which has not been fully addressed in the past literature. To this end, this study combined three types of dataset - (1) bike-share ridership data, (2) land-use and bike-transit infrastructure, and (3) bike-transit route information between OD pairs of bike stations.

This study developed zero-inflated negative binomial (ZINB) regression model to examine factors affecting bike-share ridership at OD-level. Dependent variable of the study was bike-share ridership for each OD pairs of bike stations. Independent variables were land use, bike-transit infrastructure, and bike-transit route characteristics. To analyze temporal patterns of bike-share ridership at OD-level, we divided bike-share ridership by day type and time of the day. Regarding day type, there were 22 weekdays and 9 weekends/holidays in May 2019, and recorded bike-share uses were 1,103,176 and 368,807, respectively. For time of the day, we divided weekday into five categories – dawn (3-6), morning peak time (7-9), daytime (10-16), evening peak time (17-19), nighttime (20-2).

Our results showed the physical distance between OD bike stations is one of the main factors determining zero and non-zero bike-share trips. For land-use, residential and non-residential area showed opposite associations with bike-share ridership, especially in morning and evening peak time. With regards to bike-transit infrastructure, the number of installed docks was found to be positively associated with bike-share ridership, while the number of alternative bike stations showed negative relationship with ridership. The number of public transit stations showed more diverse patterns in their influences on bike-share ridership by each model. As an indicator for relative efficiency of bike-share compared to public transit, transit duration/bike duration showed consistent impact on bike-share ridership especially for OD pairs within 10km of distance. This finding implies that people generally prefer public transit rather than bike-share for their mode choice until transit duration is doubled to bike duration.

This study propose a new optimization strategy of bike stations by taking into account the relationships between bike-share and public transit, which has not been covered in previous studies. By placing bike stations for ODs with inefficient public transit routes, practitioners of bike-share programs can maximize the utility of bike-share users. In addition, this study found that whether the relationships between bike-share and public transit is complementary or competitive depends on the surrounding spatial contexts of region that bike stations are located. Interpreting this finding from a practical view implies that installing more bike stations in residential area can increase the connectivity of bus and bike-share.

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Key Words: Bike-share, Zero-inflated negative binomial (ZINB) regression, Public transit

CAN AUTONOMOUS BUS SHUTTLE INCREASE THE LEVEL OF BUSINESS ACTIVITY? PANEL DATA ANALYSIS USING BUSINESS LICENSE DATA IN LAS VEGAS AS A CASE STUDY
Abstract ID: 292
Individual Paper Submission

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Over the past years, people began to recognize the fact that self-driving technologies and autonomous vehicles will make significant leaps in public transportation and lead to transformation in the built environment of future cities. Despite the potential shifts that autonomous technologies can bring, its actual effects on various aspects of the built environment remain unexplored because of the lack of data. In particular, the advantages of accessibility to transportation might affect the survival of small retail businesses in the initial stage, but little is known about the relationship between self-driving bus shuttle and business attraction and economic benefits to individuals, society, opportunities for new business.

This study aims at analyzing the impact of autonomous bus shuttle service on change in the number of active business licenses over time. The American Automobile Association (AAA) had been operating the self-driving bus shuttle in the old downtown Las Vegas between November 2017 and October 2018. Using the three-year business license data from the City of Las Vegas Business License Search system—one year before operation, one year during operation, and one year after operation, this study examines whether and how operation of the autonomous bus shuttle affected change in the number of active business licenses within a 0.25-mile buffer of its service areas during its operation.

To address the research question, it employs a generalized linear mixed-effects model with a negative binomial error distribution. A generalized linear mixed-effects model allows us to model the panel data while considering the correlations between the repeated measurements for correct statistical inference of the effects of covariates on the repeated response values. Findings reveal that the expected count of the number of active business licenses in a Census block group had increased for one month increase at level-1. At level-2 variables, authors also expect employment mix, education level, and residents' accessibility to jobs are significantly associated with an increase in the number of active business licenses. In addition, the similarity of the distance decay patterns between current public transit and autonomous bus services justify how autonomous bus shuttle services can contribute to access to various economic opportunities, leading to an increase in productivity and economic growth.

From these results, this study will contribute to expanding an understanding of the relationship between autonomous bus shuttle and the number of active businesses to analyze actual effects on business locational patterns over time. As this is the first attempt to explain the economic impact of autonomous transportation technologies based on real data, it will provide implications for policymakers in the sense that planning regulations on various aspects of the built environment should change in response to new transportation technologies.

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Key Words: autonomous bus shuttle, business license data, active businesses, generalized linear mixed-effect regression, panel data

IMPACT OF HEALTH ON DRIVING FOR AMERICA'S OLDER ADULTS: A NATIONWIDE, LONGITUDINAL STUDY
Abstract ID: 338
Individual Paper Submission

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Central themes: The American population is aging: by 2030, one of every five Americans will be 65 or older. Such a trend will considerably change the landscape of passenger transportation in the US. For transportation planners, a better understanding of the factors associated with older adults' driving behavior is needed.

Methodology: Using a longitudinal dataset on America's older adults, this study examines the impact of health on driving, measured by having driven in the previous month and the ability of driving beyond nearby places. To control for the potential confounding effects from confidence of driving and lifestyles, fixed effects regression models were applied.

Findings: This study finds that those older adults with "fair" or "poor" overall health were 4.5% less likely to drive in the previous month of survey; and those with "good", "fair" or "poor" health were 3.8% less likely to drive beyond nearby places. The magnitude of such effects varied by race but not by gender. This study also identifies specific physical, cognitive and vision conditions that predicted driving reduction.

Implications: This study predicts that in 2030, there will be 1.8 million older adults not able to drive beyond close vicinities solely due to health reasons. Admittedly, driving reductions may not be necessarily inferring utility reductions. Nevertheless, these indications on driving reduction deserve planners' attention even solely due to the magnitudes. Planners could use the findings to work with healthcare providers to identify at-risker older drivers that should be prioritized in mobility assistance programs.

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AN INTERNATIONAL COMPARATIVE STUDY OF THE TRANSIT PERFORMANCE OF SMALL LIGHT-RAIL SYSTEMS IN THE UNITED STATES AND SPAIN
Abstract ID: 351
Individual Paper Submission

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This paper contributes to a growing literature on comparative transit performance studies. It aims to register and understand differences in the transportation performance of five small light-rail systems in the U.S. and Spain and identify strong and weak performers. Two systems are from Spain (Granada, Santa Cruz de Tenerife) and three systems are from the United States (Norfolk's 'The Tide', Charlotte's 'Lynx', and Cleveland's Green, Blue lines). All five cases are relatively small in scale and scope, featuring 1-2 lines and a maximum of 35 stations. Also, all five cases are recent modern implementations except for Cleveland's, which started operations as light-rail service in the 1980s but originally operated as streetcar (tram) from 1913-1980 along the same alignment. Data related to monthly and annual ridership, service supply, and service consumption was collected and harmonized for the five systems. Normalized effectiveness and efficiency metrics were also developed for comparative purposes. In addition, socio-economic and land-use contextual attributes within stations' network-based service areas were collected and aggregated in a GIS platform for system-wide comparisons together with basic system characteristics. Based on transit ridership and transit performance literature a set of demographics, socio-economic, operational, service quality, and land-use factors were identified as key influential factors, and these were used in the ranking of the systems. Each factor was ranked [1-5] for each system according to their positive or negative effects on ridership and performance. Improving on previous light-rail transit comparative studies (Ramos-Santiago et al. 2015), some of these factors were normalized for a more valid comparison of cases. A final weighted total score was calculated for each system and the overall results align with the normalized transit performance indicators. That is, the two systems from Spain register the best ranking scores and highest performance indicators, with the system from Santa Cruz de Tenerife reporting the highest ranking and best performance indicators (ridership, service productivity, and cost effectiveness). Charlotte's Lynx reports the best ranking and performance indicators for the sub-set of U.S. systems, and third overall. Based on the available data and quantitative results the authors conclude that contextual attributes related to land-use characteristics, automobile availability, and service levels are key in explaining the difference in performance among the systems, although other variables related to planning, service delivery, and performance management need to be explored and documented in the future for a more comprehensive evaluation. Also, the potential influence of automobile-oriented infrastructures, such as limited-access motorways and their access ramps near and parallel to light-rail alignments and stations; and the availability and price of parking at key destinations are also worth considering in future studies as these might contribute to the lower ranking and performance of the weakest systems. The results of this study coincide and support previous international studies where European rapid-transit systems outperform systems from North America (Currie et al. 2011) and, together with results from other U.S. transit ridership studies suggests that land-use policies that aim for higher population and employments levels near light-rail stations, together with high multimodal connectivity with suburban feeder systems are necessary if U.S. light-rail aims to match performance characteristics of European counterparts.

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Key Words: light-rail, international, performance

CHANGE IN VEHICLE OWNERSHIP RATES: THE ROLES OF LIFECYCLE AND COHORT EFFECTS
Abstract ID: 399
Individual Paper Submission

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High rates of vehicle ownership have defined the relationship between mobility and private vehicle access in the U.S. Previous national analyses of vehicle ownership trends show continued increases in vehicle ownership rates across diverse population groups – by race, income, nativity, and age. Census data show that as of 2017, almost 94 percent of individuals lived in households with at least one automobile.

In this study, we examine whether the growth in vehicle ownership has slowed among young adults. There are numerous reasons to expect this is true. Some studies show an increase in young adult households living in dense central-city neighborhoods where they can easily access opportunities using alternative modes. Young adults also comprise a large percentage of ridehail users, an alternative to auto ownership. Finally, young adults are the population group most likely to experience the lingering effects of the Great Recession. Data from the Bureau of Labor Statistics show that as of 2019, adults age 16 to 24 years had unemployment rates almost three times of adults ages 25 to 54.

However, young adults always have been less likely to live in households with automobiles than older adults. Moreover, they may not be abandoning automobile ownership, but rather putting off vehicle purchases, as one of a number of delayed markers of adulthood that include postponed marriage, childbearing, and homeownership.

In this paper, we draw on national data to examine the role of lifecycle and cohort effects in changing rates of vehicle ownership among young adults over the last two decades in the U.S. We use data from the American Community Survey (ACS) Public Use Microdata Sample (PUMS) for 2000, 2005, 2010, and 2015 to analyze age groups over time. We then develop 5-year cohorts and measure and then model cohort transitions (e.g. from 20-24 to 25-29, etc.) over three time periods: 2000 to 2005, 2005 to 2010, and 2010 to 2015.

The data show substantial lifecycle effects. In all years, vehicle ownership increases with age until adults reach their mid-50s, and then ownership declines. Notably, the rate of change in vehicle ownership by age group between 2000 and 2015 was fastest among adults in their 20s. However, automobile ownership dipped from 2005 to 2010, reflecting the Great Recession. Further, the economic downturn dampened automobile ownership most strongly for individuals in their 20s. Cohort transitions have also shifted over time. In the early 2000s, age had a negative relationship with cohort transitions into vehicle ownership. In other words, younger adults were more likely to move into automobile ownership than older adults. This general pattern remains; however, the data show delayed transitions into vehicle ownership which are highest among young adults 25 to 34.

Understanding how and why cohorts have different vehicle ownership rates can inform policies to increase accessibility and mitigate the environmental impacts of automobiles. Private automobiles contribute to air pollution and increase traffic congestion; thus, transportation professionals may feel apprehensive about high rates of vehicle ownership. The data may show potential progress on this issue, via lower automobile ownership rates among almost all age groups since the 2005 peak and smaller cohort transitions into vehicle ownership relative to the early 2000s. But vehicle ownership also has important benefits; it enables access to jobs and other opportunities and results in positive economic outcomes for low-income households. Thus, researchers must analyze whether reduced or delayed ownership reflects true preferences for alternative modes, or instead financial constraints among emerging generations. While this research does not directly address questions of choice, it provides a starting point by analyzing generational trends.

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Key Words: vehicle ownership, transportation access, demographic change, cohort effects

TRANSIT TO LARGE PARKS: EXPLORING SPATIAL DISTRIBUTION OF TRANSIT ACCESSIBILITY TO LARGE PARKS
Abstract ID: 400
Individual Paper Submission

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Background/problem: Low-income people, children, and the elderly are particularly dependent on having easy access to parks, as they might not have the means to afford private recreation settings and might have limited mobility options. Thus, creating the conditions for equal access to parks is an essential objective for healthy, just, and resilient cities. Yet, low-income people tend to live farther from larger and higher-quality parks than more advantaged groups. Those larger parks – including regional parks, state parks, and national forests and parks – have particular health, social, and environmental benefits. These additional benefits show that inequitable walking access to large parks is an environmental justice issue.

Transit access to large parks is a viable option for the low-mobility population who don't have access to personal vehicles. Some studies have examined accessibility to any park via transit, but empirical evidence on transit access to large nature parks is missing. Specifically, we do not know whether, in addition to experiencing inequities in walking access to those parks, disadvantaged groups also have inequitable access to such parks via transit.

Objective: This study evaluates how accessibility to large nature parks via transit (transit-to-parks index; T2P) varies by neighborhood socio-demographic characteristics, addressing the subject of "green justice."

Methods: Using network analysis with public transit feed data, we calculate transit-to-parks index

(T2P)—how much large parks (regional parks, state parks, and national forests and parks) can be reached via public transit within a specific time limit—for every census block group in 15 regions in the U.S. West. A gravity model is used to measure the T2P index. Then a spatial regression model explains the T2P index in terms of transit service and neighborhood socioeconomic factors.

Results: Our study demonstrates environmental injustice in transit access to large parks. T2P access decreases when a neighborhood is more socio-economically disadvantaged (i.e., lower-income and fewer non-White population). Also, a low T2P index is related to low levels of transit system coverage and frequency.

Significance: Findings from this study help academics better understand environmental injustice issues in multi-modal accessibility to large parks. Our methods of network analysis in GIS could help planners, transit agencies, and decision-makers identify priority areas of transit investment to improve access to outdoor recreation opportunities for the disadvantaged population.

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Key Words: park accessibility, green justice, transit equity, captive riders, spatial regression

CAR AND HAPPINESS: CAR PRIDE OR CAR-DEPENDENT?
Abstract ID: 412
Individual Paper Submission

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China is experiencing rapid motorization, especially in large cities. Cities like Beijing and Shanghai adopted driving restrictions and license management policies in the last decade, making owning and using cars increasingly expensive for households. However, the car ownership in large cities are still high. For example, according to a research of Chinese Academy of Social Sciences, 6 out of 10 households have automobiles in Beijing own at least one car. Why people own cars in large cities even under strict driving restrictions?

This study understands the above question from the hedonic wellbeing perspective. Hedonic wellbeing, which is usually referred as "happiness", explains people's decisions from their utility. Though some emerging studies found that car ownership and use contributes to happiness in developed settings (for example, Deka, 2017), limited studies in Chinese large cities show conflicting evidence of the relationship between car ownership and use and happiness.

On the one hand, the positive relationship of car ownership and happiness could stem from "car pride". Many car owners have a more positive attitude towards car and the role of car in their life. Thus, they

have higher "car pride" (Zhao and Zhao, 2018), which implies that car ownership contributes to happiness. Another explanation is "car-dependent". In a transit-dependent setting, car use in Chinese large cities are expensive and restricted, thus the happiness of car commuters may be lower (Zhu and Fan, 2018). However, car dependents may have more utilities in car use than others and thus generate happiness by enjoying the car-dependent lifestyle.

Which hypothesis is more convincing in explaining the relationship between car and happiness? If the "car price" hypothesis is true, residents in households with more cars have higher happiness, controlling for other factors. If the "car-dependent" hypothesis is true, households with higher car use may have higher happiness.

The data of our study comes from a survey conducted in Beijing on 800 households in September 2016. The survey includes information on household car ownership, household Vehicle Miles Travelled (VMT) for different purposes, and life satisfaction. To test the first hypothesis, we examine the differences in life satisfaction among households without private cars, with one car and more than one car. To test the second hypothesis, we examine the differences in life satisfaction among households with different levels of work and non-work VMT.

we use the prognostic Propensity Score Matching (PSM) approach and conduct the causal inference after matching to examine the causal relationship between car ownership/car use and happiness. Prognostic PSM approach is good at balancing important influencing variables in car ownership (income, hukou status, preference for cars, the household size), and car use (income, preference for cars, household car ownership and household size) in different treated and control groups. After matching, we predict the treatment effect of car ownership and car use on happiness using M-statistics.

This study provides evidence on how car is related to happiness in a transit-friendly large city. It helps to understand why people are still eager to have cars under strict car ownership and driving restriction policies from the happiness perspective. It helps the policy makers to make restriction policies in large Chinese cities like Beijing from the psychological perspective.

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Key Words: car ownership, car use, wellbeing, China

HUB AIRPORTS AS EMPLOYMENT CENTERS: SPATIAL INFERENCES FROM COMMUTING AND HOUSING DATASETS
Abstract ID: 413
Individual Paper Submission

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Hub airports are invested not only as transportation nodes to manage traffic growth but also as employment centers to drive economic growth (Appold, 2015). Critically, amid the momentum in open skies agreements and low-cost carriers, the flows of both airline users and airport employees rapidly grow and geospatially concentrate at hub airports as both transportation nodes and employment centers. While the advancement of aviation systems, including 24-hour operation, runway expansion, terminal

modernization, and service automation, is likely to mitigate traffic congestion at hub airports, the lack of landside capacity, including ground transportation accessibility and land use compatibility, becomes an important consideration of airport managers and city authorities for efficient system operation and sustainable economic development beyond hub airport districts (International Transport Forum, 2014; US Government Accountability Office, 2013).

Whereas many ground transportation programs worldwide focus on the mobility of airline users, only a few international studies pay special attention to the accessibility of airport employees. Indeed, airport employees account for a large share of the trips on ground transportation systems to and from hub airport districts, as the number of both aviation and non-aviation workers at a world-class hub airport can exceed 40,000 for handling a larger volume of transfer traffic which is neither originated from nor destinated to the groundside (Coogan et al., 2008; de Neufville, 2006). The strategic ground transportation programs for airport employees need to be differentiated from those for airline users because the growth of commute trips to and from hub airports as employment centers happens to be on a daily basis and more automobile dependent in suburban and exurban locations. A body of research on the growth of suburban employment centers further infers that the patterns of growing commute trips made by a range of airport employees depend on the availability of accessible and affordable housing options stratified by occupational class in both developed societies and emerging markets. Nevertheless, the degree and pattern of such airport-centric development are still uncertain in cities with hub airports worldwide, due in large part to the paucity of evidence on airport employees' commuting and housing characteristics.

This study quantitatively describes the growth of hub airports as employment centers using household-level commuting and housing datasets based on urban location theories and economic development strategies in selected international case cities. According to the literature (Appold, 2015), the analysis geospatially identifies three types of employment relevant to airport operation: aviation-providing employment, including flying, aircraft maintenance, and terminal operation at hub airports; aviation-supporting employment, including hotels and retails for air travelers and wholesaling for air shippers in hub airport districts; and aviation-using employment, including advanced producer services for passenger transportation and high-tech manufacturing for freight transportation near hub airport districts. From the identification of employment clusters, the concentration and distribution of commute trips made by airport employees are geospatially visualized and statistically compared at two time points to grasp growth or shrinkage in the influential areas of hub airports as employment centers. Spatial inferences drawn from airport employees' revealed preferences (e.g., trip length, mode choice, unit rent, and location choice) in different development patterns are summarized for the dialogs between, airport managers, planning authorities, local communities, and other stakeholders, with special attention to the competitiveness and sustainability of cities with hub airports.

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Key Words: Airport Planning, Economic Development, Urban Spatial Structure, Transportation and Land Use, Housing

THE ROAD LESS TRAVELED: DOES RAIL TRANSIT MATTER?
Abstract ID: 433

Individual Paper Submission

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Both planning scholars and practitioners have advocated rail transit as an effective way to mitigate the growth of vehicular travel demand (Cervero et al. 2004). Because rail transit requires substantial subsidies, quantifying its effectiveness is critical for policymakers to garner public support for rail transit investments. Accordingly, many studies examined the influence of rail transit on road traffic (Ewing et al. 1997; Giuliano, Chakrabarti, and Rhoads 2016; Bhattacharjee and Goetz 2012). For example, Bhattacharjee and Goetz compared vehicle miles traveled (VMT) of the highways before and after the opening of three light rail segments in Denvor. Their results suggested that the operation of light rail transit has slowed down the increase of highway traffic. However, they did not account for the effects of confounding factors (such as transit supply and land use along the roads) on road traffic. Omitting important confounders may lead to biased estimates of rail transit effects. In addition, rail transit may bring about changes in both traffic and development over time. However, few studies examined how the effects of rail transit evolve temporally.

In this study, we examined the impact of the Green Line light rail transit on road traffic in the Twin Cities metro area in Minnesota, U.S. Using traffic data before and after its opening, we applied a quasi-experimental design to compare annual average daily traffic (AADT) on the roads within and outside transit-influence areas. We employed multivariate analyses to control for confounding factors such as transit service, land use variables, and road function classes. We found that compared with the roads outside its influence area, the Green Line reduced AADT on the roads within its influence area by 20% in the first two years of operation. In the next two years, the AADT bounced back by around six percentage points. These findings suggest that rail transit can reduce traffic on adjacent roads, but there is a rebound effect.

This study contributes twofold to the literature. Using a quasi-experimental design controlling for transit supply and land use variables (which have important influences on road traffic), it proposes a conceptual framework to study the causal relationship between rail transit and travel demand. Accordingly, it produces more accurate estimates of rail transit effects than previous studies. Additionally, our results suggest that both induced demand and induced development may be at work. In particular, while rail transit reduces road traffic at the beginning of its operation, the trips diverted from other modes and other routes may gradually fill the roads up later (Downs 1992). With that said, the transportation system as a whole benefits from the deployment of rail transit. Furthermore, the new development induced by rail transit may attract additional trips to the LRT corridor.

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https://doi.org/10.1177/0739456X15604444.

ELABORATING THRESHOLD AND SYNERGISTIC EFFECTS OF SUBWAY ACCESS AND LAND USES ON URBAN VITALITY IN SHENZHEN
Abstract ID: 454
Individual Paper Submission

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Transit-oriented development (TOD) could be an effective approach to nurturing vibrant urban places. TOD densifies station areas, offers a mix of residential, commercial, and office uses around transit stations, and shortens walking distance between destinations through small blocks. These built environment characteristics are considered necessary conditions for achieving a vibrant street life (Jacobs, 1961). Previous studies test the significance of built environment characteristics and assess their relative importance in contributing to urban vitality (Sung and Lee, 2015, Ye et al., 2018), offering important insights on planning for urbanity.

However, scholars often assume that the built environment follows a pre-defined (mostly linear) relationship with urban vitality, which is likely not the case. Ignoring the non-linearity tends to understate the impacts of built environment variables and thence offer erroneous implications for planning practice. Therefore, this restrictive assumption hinders planners' understanding of their real relationship. In addition, transit features and the built environment around stations contribute to human activities and economic opportunities around station areas. The co-existence of high-quality transit and the surrounding development oriented toward transit use in a TOD is believed to be mutually beneficial (Singh et al., 2017). Without the interaction, development becomes transit-adjacent, rather than transit-oriented (Cervero et al., 2004). Therefore, their synergy to cultivating quality places of urban vitality requires better articulation.

This study employed gradient boosting decision trees to examine the relationships between the built environment and Baidu Heat Index (BHI), a proxy for urban vitality, in Shenzhen, China. It answers the following questions: (1) How important are different dimensions of the built environment in forming urban vitality? (2) Do built environment attributes have non-linear associations with urban vitality? (3) How does subway access interact with land use variables in enhancing urban vitality? We developed two models for daytime and nighttime to demonstrate the differing relationships between the built environment and BHI. This study contributes twofold to the literature. It relaxed the linearity assumption commonly adopted in the literature and illustrated the threshold effects of built environment attributes on urban vitality. Moreover, it showed how subway access interacts with land use characteristics in affecting urban vitality.

We found that among all the variables tested, total floor area is the most important, accounting for about 45% of the predictive power for both daytime and nighttime BHI. Transportation infrastructure is also important during both periods. These findings suggest that access to destinations is key to urban vitality. Furthermore, the share of office areas is more important to BHI during the daytime than at nighttime, whereas restaurant and entertainment businesses are more critical to nighttime BHI than daytime BHI, showing the differing roles of land use characteristics in promoting urban vitality.

More importantly, built environment attributes have pervasive threshold effects on BHI: almost all of them have non-linear associations with BHI. The non-linear associations vary by variable. Without considering non-linearity, we may misestimate the effects of built environment variables and infer inaccurately the future for planning practice.

The impact of proximity to subway stations on BHI is amplified when subway stations are located in employment centers with a large floor area and/or next to office- and dining-related land uses. The synergistic effects between subway access and land uses are considerable. Knowing these effects will help planners to make better decisions on station location choice and station-area land use planning.

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Key Words: Transit-oriented development, urbanity, threshold effects, synergy, rail transit

WHAT'S YOUR ANGLE? ANGLED PARKING, BIKE LANES, AND TRANSPORTATION PLANNING IN SAN FRANCISCO, CA
Abstract ID: 455
Individual Paper Submission

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U.S. cities prioritize the storage of automobiles over the movement of bicycles. While this generally occurs by allocating street curbs for car parking (instead of bike lanes), the privileging of the automobile is most evident in the case of angled parking, in which cars sit roughly perpendicular to the flow of traffic. Such a layout takes up nearly double the street space of parallel parking, which leaves even less room for bike lanes. San Francisco, CA, a city with ambitious air-quality, climate-mitigation, and active-transportation goals, maintains a large but unquantified amount of angled parking, an attribute left out of the city's parking census. Using satellite imagery, this study calculates that San Francisco dedicates 49 miles of street curbs to angled parking, across residential (45.5%), commercial (20.3%), and industrial areas (20.7%), as well as next to parks, schools, hospitals, and civic and religious centers (13.5%). Angled parking is present both in low-density neighborhoods, and the city's dense downtown core. While some assume angled parking is a planning response to San Francisco's famed hills, the majority of it (55%) occurs on streets with no incline at all. Although angled parking is touted for its traffic-calming effect, this benefit appears to be non-existent in San Francisco; average vehicle speeds differed by less than half-mile per hour between angled-parking streets and adjacent non-angled streets (for 100 matched pairs). Overall, the angled parking identified here – particularly 4.4 miles which lie adjacent to the city's growing bike-lane network – represent ideal opportunities for conversion to more balanced road layouts (e.g. 'complete streets'), such as separated bike lanes. Going forward, this initial, manually-constructed dataset can be used as a training set to automate the identification of angled parking in other cities.

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Key Words: Parking, Bicycle, Satellite, GIS, Curb

THE ROLE OF TRANSPORT IN HOW WE CHOOSE WHERE TO LIVE: A QUALITATIVE INVESTIGATION OF RESIDENTIAL LOCATION CHOICE IN THE PHOENIX, AZ REGION
Abstract ID: 457
Individual Paper Submission

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Many urban planners are concerned about urban and suburban "sprawl", in part because sprawling development patterns practically require residents to use cars to conduct their daily lives. The negative impact of widespread car use on our cities and environment is well-known, and yet many households choose to live in "sprawling" neighborhoods.

In the large literature on the relationship between transportation choices and the built environment, one of the key questions is that of residential self selection (e.g. Ettema & Nieuwenhuis, 2017; Gehrke, Currans, & Clifton, 2018; Salon, 2009; Schwanen & Mokhtarian, 2005). How much does the transportation environment affect households' choices about where to live? Do those who live in sprawling areas actually prefer to drive? Do those who choose transit-accessible, walkable neighborhoods prefer to walk and ride transit?

We contribute to this literature with an interview-based study of the residential choices made by 46 recent homebuyers in the Phoenix, AZ metropolitan region. The study's main goals were (1) to understand how households make home buying decisions, and (2) to investigate the role of transportation-related factors in these decisions. Specifically, we use in-depth interview data as evidence to discuss why households move, which home and neighborhood factors are most important in the home buying choice, constraints on the choice process that lead to particular outcomes, and take a deeper dive into the role of transport-related factors in the home choice.

Overall, we found remarkable diversity in the home buying decision processes and outcomes among households in our sample, even when those households were demographically similar. Focusing on the role of transport, we find that many homebuyers consider proximity to key destinations when choosing their home, but only a small minority prioritize access to modes of transport other than the private car. It may be that the prevailing culture of car dependence in the Phoenix region limits both homebuyers' actual options as well as their capacity to even imagine multimodal living.

Perhaps most surprising was the sizable fraction of households in our sample that did not have a strong geographic preference for their new home. The prototypical real estate advertisement is "location, location, location", but a large fraction of our sample would be unmoved. This implies that not only did these households not prioritize transportation alternatives in their home choice, but they also were not particularly concerned about how much time they would need to spend in their cars if they lived in a particular location. Most of them would prefer to spend less time driving, but they were clearly willing to

compromise on this preference to get another home or neighborhood feature that they wanted.

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Key Words: residential location choice, qualitative methods, homebuyer decision process, residential self selection

UNDERSTANDING AND INFLUENCING THE UPTAKE OF MICROMOBILITY MODES
Abstract ID: 478
Individual Paper Submission

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E-scooter sharing has been an emerging transportation landscape in cities around the world. The National Association of City Transportation Officials (NACTO) reported that 84 million shared micromobility trips (including both bikesharing and e-scooter sharing systems) were taken in 2018 in the United States. Shared e-scooter rides accounted for 45.8% of these trips (NACTO, 2018). Micromobility (defined as any mode of transportation via very light vehicles —including, but not limited to, electric scooters, electric skateboards and bicycles) is changing transportation in various ways (Gössling, 2020). For example, it increases mobility options, can reduce commuting times and carbon emissions, while it also promotes the use of active transportation modes and creates opportunities for people who live in the city to exercise. Depending on the way micromobility options are deployed, they can serve as a way to enhance accessibility and quality of life in cities (Shaheen et al., 2019).

Against this background, there is a need to improve our understanding of the various population segments that currently engage with shared micromobility modes (particularly shared e-scooter), or have a propensity to do so in future, as well as of the different impacts that the adoption of these modes may exert on cities. This research is intended to make a first step towards delineating (and as a second step, influencing) the uptake of micromobility as a mode choice within the broader sustainability paradigm for the transportation sector. In this study, we analyze a variety of data collected via two different channels: 1) Survey data collected via a smartphone link, including demographic and psychographic data, self-reported travel behavior and preferences relating to the use of shared micromobility, and 2) data provided by shared micromobility companies, pertaining to users that have authorized access to their trip records. The analyses address a number of research questions, including (a) understanding the socio-economic,

psychographic, and other characteristics of current micromobility users; (b) identifying the changes in the characteristics of user groups over time (e.g., innovators, early adopters, later adopters, laggards, emergence of "super-users"); (c) exploring the impact of micromobility adoption on the level of use of other travel modes in cities. Based on the results of this study, we provide suggestions to transportation planners that may enhance the adoption of micromobility across different population segments and promote behavioral changes that are desirable from an environmental and sustainability standpoint (e.g., switching from car trips to e-scooters). We also offer insights to policy makers on how to more effectively facilitate these changes through the use of tailored communication strategies and positive incentives.

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Key Words: Shared Micromobility, Behavioral Changes, Population Segments

FROM POLICY-MAKING TO PILOT PROGRAMS: HOW LOCAL GOVERNMENTS PREPARE FOR AUTONOMOUS VEHICLES
Abstract ID: 503
Individual Paper Submission

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The technology of Autonomous Vehicles (AV) has arrived, but the policy makers, and urban planners are not completely ready to adopt this technology at a large scale, due to a variety of uncertainties and risk factors. On January 2020, the U.S. Department of Transportation (DOT) and the White House's National Science and Technology Council (NSTC) issued version 4.0 of their guidance on the deployment of autonomous vehicles (AV 4.0). AV 4.0 provides 10 guiding principles. The intent is to drive consistent AV policy across the U.S. government, but will it be a guiding approach for local governments in achieving consistent AV policy? To answer this question, this exploratory research identifies common goals, policies, and pilot project strategies of major cities and regions in the USA, by analyzing 6 policy documents, 30 pilot projects, and interviewing multiple experts in the local government and AV industry.

The purpose of the research is to conceptualize a framework that can be used in the policy making process, and prioritizing pilot projects at the local government level. 7 major goals are identified after reviewing the policy documents of 6 cities of Seattle, Portland, Austin, Chandler, San Jose, and San Francisco: 1) Make urban environment AV-ready with appropriate digital and physical infrastructure. 2) Modernize regulations to maximize the benefit of autonomous vehicles. 3) Design and implement safety strategies for protecting commuters and urban data. 4) maximize the benefits of AVs to the public and expand mobility for underserved population. 5) Make sure AVs reduce all possible forms of pollution, waste, and congestion. 6) Link AVs with active, public, and shared mobility options. 7) Engage communities to better understand the opportunities and challenges that come with integrating AVs in transportation development.

All related policies are extracted from the 6 policy documents and their presence or absence has been tested in the 30 pilot projects across the United States. The co-occurrence analysis of policies identifies different types of pilot programs and their planning outcomes.

The second phase of the project further explore the research question of what short-and long-term planning outcomes can cities formulate in response to the proliferation of autonomous vehicle pilot programs? Multiple stakeholders from the public and private sector, along with individuals with relevant knowledge from the technology sector are interviewed, using the established criteria in the first phase of study. Exploring implementation models for their effect on local government can help planners produce strategies to address AV technology in both the short-and long-term.

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Key Words: Autonomous Vehicle, connected and automated driving, pilot programs, transportation planning

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NEIGHBORHOOD CONTAINMENT AND PEAK TRAVEL IN SAN FRANCISCO BAY AREA: NEW EVIDENCE FROM CELL-PHONE LOCATION-BASED DATA
Abstract ID: 508
Individual Paper Submission

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Job-housing balance is a planning strategy that aims to reduce peak-period commuting traffic and air pollution. It is hoped with neighborhood employment containments, residents can reduce their commute footprint by shortening travel distance, and choose to walk or bike. However scholars debate about the effectiveness of this strategy since nonwork trips account for the majority of peak trips in the US. Other mixed-use measures describe more than the job-based measures in terms of neighborhood containment. Empirical studies on job-housing balance and neighborhood containment often rely on Census and traditional household travel survey (Cervero, 1996; Merlin, 2014), subject to small sample and measurement errors. Moreover, few has tied to demographic and socio-economic distribution. With increasingly smart phone penetration in recent years, planners and researchers use cell phone big data to infer human mobility patterns (González et al., 2008; Zhou et al., 2018). This paper uses a 1-million sample of cell phone location-based data in addition to Census, to examine the spatial pattern of neighborhood peak travel containment and its association with demographic, socio-economics land use segregation in the San Francisco Bay Area (Monkkonen & Zhang, 2014). Finally, the paper discusses several limitations using cell-phone big data to infer people's daily commute patterns compared to traditional survey, and provides insight into the current development pattern in the Bay Area as well as equity implication, given its drastic urban growth.

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Key Words: Travel Pattern, Containment, Job-Housing Balance, Spatial Segregation, Big Data

ESTIMATING TRAFFIC CRASH REDUCTION CAUSED BY ADOPTING FULL AUTONOMOUS VEHICLES USING TRAFFIC CRASH REPORT
Abstract ID: 517
Individual Paper Submission

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Traffic crashes impose a heavy burden on society. According to WHO (World Health Organization), nearly 1.25 million people die in traffic crashes every year. About 94% of these crashes are caused by human driver error. By replacing human drivers and hence avoiding human errors involved in vehicle operation, autonomous vehicles (AVs) have the potential to significantly reduce traffic crashes. However, it may take decades for AVs to replace every conventional human-driven vehicle, the human driver error will remain a safety concern during the adoption of the AVs.

Understanding of the expected crash reduction can facilitate government agencies confidently setting transportation safety improvement goals and strategically make AV implementation plans. However, we know little about how effectively AVs can reduce the number of crashes when they interact with conventional vehicles. We are also not sure about how the trend of crash reduction looks like in the future from the first fully AV (Level 5 AV) hitting the road to the complete adoption of fully AVs since fully AV is not yet deployed on the road, and there are limited real-world data about the interaction between AVs and conventional vehicles during crashes.

The goal of this research is to estimate the crash reduction brought by fully AVs and to understand the trajectory of crash reductions as AVs penetrate the consumer market and gradually replace conventional vehicles. Although lacking immediate AV crash data, the large amount of historical police crash narratives assist research in this regard as they record the details of historical vehicle crashes. This research will mine textual data contained in the crash reports to study if each historical crash is avoidable when fully AVs interacting with conventional vehicles by assuming AVs have participated in the crash.

This research will focus on three research questions: 1. How to determine if a crash is avoided by fully AVs using the police crash report? 2. How to automate the process of identifying avoidable crashes using text mining and machine learning? 3. What is the expected trend of crash reduction as the market penetration rate of AVs increases? What factors may shape the trend?

We will review individual police crash reports and determine if a particular crash is avoidable or not by studying the unstructured textual narrative to determine if a crash is avoidable or not by assuming one or more vehicles in the crash were a pre-defined, fully AV. Our analysis will mainly rely on studying the unstructured textual narrative contained in the crash reports. To improve the efficiency of this procedure, we will train a set of text mining and machine learning models to automate the process of identifying avoidable crashes in Florida using all crash records from 2018 to 2019. This research will replace conventional vehicles in the historical using fully AVs at various market penetration rates at random chance, and then delineate an estimated crash reduction trend line.

The expected findings are 1. a decision-support framework that helps determine to determine if a crash is avoidable by fully AV, 2. a machine-learning model that can be used to automate the process of text

mining to determine if a crash is avoidable, and 3. a trend line of crash reduction made by fully AVs by various market penetration rates.

This research will make three contributions: 1. understanding the crash reduction of fully autonomous vehicles during the process of adopting them, 2. developing machine learning models that can identify avoidable crashes by fully autonomous vehicles, 3. a summary of rare crash events that are difficult for fully autonomous vehicles to deal with, which is potentially useful for autonomous vehicle developers.

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Key Words: Autonomous vehicles, traffic safety, traffic crash, text mining, machine learning

RISK FACTORS FOR PERSONAL MOBILITY DEVICES CRASH
Abstract ID: 537
Individual Paper Submission

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Personal mobility devices (PMDs), including electric scooters and Segway, are becoming more popular because of their easier and convenient availability, and lower cost in urban environment. PMDs are also considered as an effective solution for first- and last-mile travel which could connect with public transportation (Dowling et al., 2015). According to the Korea Transport Institute, the PMD market grew up to 25% from 60,000 to 75,000 units between 2016 and 2017 and is expected to expand to 200,000 units in 2022 in South Korea (Shin et al., 2017). Despite its popularity, regulations on PMD safety vary depending on countries and there is still controversy over which standards are appropriate.

In this situation, as the demand for PMDs increases, accidents related to PMDs are quickly growing, requiring more systematic research and standards on their traffic safety. According to the Korea Consumer Agency, the number of personal accidents related to PMDs increased significantly from 3 in 2013 to 174 in 2016, and the number of related traffic accidents registered with the Korean National Police Agency doubled from 117 in 2017 to 225 in 2018. However, previous studies have focused on legal issues, such as the legal definition of PMDs, road traffic regulations and driving safety standards (Sikka et al., 2019), while little is known about spatial attributes of PMD crashes. Few studies have tried to examine the pedestrian's risk perception to PMD (Hasegawa et al., 2018), still, the essential risk factors to determine the actual risk of PMD in terms of planning perspective have not yet been examined. Thus, this study aims to investigate risk factors for PMD crashes with an emphasis on the built environments based on the crash reports of South Korea.

In order to analyze the physical and locational attributes of PMD crashes, we develop databases for each PMD related accident between 2017 and 2018 from the Traffic Accident Analysis System (TAAS). The database includes x, y coordination of each accident, physical characteristics of roadways and intersections where the accident occurs, and other land use and built environments variables. Based on the correlation analysis and factors analysis, we find the main risk factors for PMD crashes. The count regression model for PMD crashes is also developed to show that which physical and locational factors

are related to PMD accidents after controlling the PMD traffic volume with a floating population. Preliminary results show that PMDs have a relatively lower ratio of being killed or seriously injured in crash accidents (16.2%) than the other vehicles (25.0%). Compared to other vehicles, the PMD crash more frequently occurred in off-road areas such as inside of apartment complex and parking lots. The results and findings of this study could provide a better understanding of PMD safety and suggest policy and planning implications to reduce PMD crashes.

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Key Words: personal mobility, PMD, crash, pedestrian safety, built environment

EVALUATING ACCESSIBILITY-BASED APPROACHES TO DEVELOPMENT IMPACT ANALYSIS
Abstract ID: 539
Individual Paper Submission

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Traditionally, development projects in most of the states in the U.S. have been assessed and prioritized based on the effects they pose on the traffic flows in the areas near where they are proposed. The premise behind this vehicle-mobility-centered approach is if vehicular speeds degrade below a certain threshold, the project traffic impacts are too great and the project is either not approved, or extensive traffic mitigations are required of it. We argue that this is a flawed approach because developments that promote dense environments bring destinations closer and may shorten trip distances even as they reduce vehicular speeds. Scholars increasingly argue that an accessibility-based measure, that nets out the benefits of agglomeration with the congestion it engenders, would be a more meaningful and complete way to evaluate development projects (Levine et al., 2019; Levinson & King, 2019).

In recent years a variety of new approaches to evaluate the access impacts of new developments have been proposed by scholars and planning practitioners. These tools typically focus on place-based measures and only take into account the generalized cost of travel. The measures are usually based on cumulative opportunity approach or gravity-based measure that counts the number of potential destinations within a certain distance (Levine et al., 2019; Miller, 2005). Accessibility elasticity, place-rank measure, urban macroscopic network accessibility indicator, access score are some examples of tools for place-based accessibility measures.

We suspect that these measures may not offer a complete picture of accessibility, in part because accessibility is such an enormous challenge to operationalize. Measures solely focusing on spatial separation of origin and destinations do not address the ease of interaction that advancement of information and communication technology has facilitated in the last few decades via telecommuting, online shopping, banking, etc. (Miller, 2005). Besides, individuals and households have different preferences for destinations even after having the same set of destinations within a certain distance from

their origin. Utility-based approaches can address this issue, but they are hard to operationalize because of the extensive data required. Space-time constraints affect the accessibility experience of individuals. Households and individuals sort their flexible activities, like grocery shopping, during the day based on the time available to them after performing the fixed activities, like employment or school (Weber & Kwan, 2003). Further, variety and quality of destination choices are as important to determine travel behavior as distance and quantity. Moreover, place-based approaches typically fail to take into account multipurpose trips, trip chaining behavior and non-home-based trips. Geographers have developed measures considering the temporal availability of potential opportunities using the concept of space-time geography (Handy & Niemeier, 1997; Weber & Kwan, 2003), but to date, these have had little traction in planning scholarship.

In this research, we develop a robust conceptual framework for accessibility analysis through a careful review and critique of the burgeoning literature on this topic. Then, we evaluate the various tools, many of them very recent, developed to improve on traditional traffic impact analysis, in light of our conceptual model. In particular, we examine the various tools' fit in a holistic conceptual framework of access integrating place and person-based approaches and evaluate their practical applicability in development impact analysis. The relevance of this work to planning scholarship and practice lies in the specific guidance it provides in developing a comprehensive tool for analyzing and comparing development projects.

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Key Words: accessibility, gravity-based measure, space-time constraint, Traffic-impact analysis, cumulative opportunity approach

IMPACT OF NEW TOWN DEVELOPMENT ON COMMUTING PATTERNS
Abstract ID: 540
Individual Paper Submission

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Since the 1960s, Seoul was rapidly urbanized and population concentration has accelerated. This led to a variety of urban problems and a surge in real estate prices, and the government announced "new town development" as a countermeasure. The new town development so far can be divided into three stages; the first new towns are five cities designated for the construction of 2 million homes in 1989, the second is 12 new towns designated with strong real estate demand deterrence measures in 2003, and the third new towns are four cities announced to stabilize house prices in 2018.

Now, 17 years after the second-phase new towns were announced, the evaluation of the new towns varies.

From the point of view of commuting patterns, there are some studies that showed that commuting distances have been reduced due to the enhanced economic functions of the new towns, on the contrary, some research show that the development of new town caused excess commuting. Therefore, this study analyzes the influence of new town development on commuting patterns in Seoul metropolitan area. To do so, we utilized the 'Household Travel Diary Survey Data' conducted since 1996 and the 'Smart Card Data' accumulated since 2010.

The analysis shows that the development of new towns in Seoul metropolitan region is more likely to cause excess commuting than reducing commute distance. Over time, the dependence of new towns on Seoul tends to decrease, but after a certain period of time, this study confirmed that commuting traffic of new town residents to Seoul no longer decreases. This finding indicated that new towns are still lack of self-sufficiency and depend on the mother city of Seoul. New town development is closely related to urban politics, and local government heads are keen to maximize access to new towns from Seoul. However, in order to grow into a healthy and sustainable city without excessive commuting, it is necessary to increase the self-sufficiency of new towns and maintain access to Seoul at an appropriate level.

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Key Words: New town, Commuting, Excess commuting, Urban Spatial Structure, Self-Sufficiency

EVALUATION OF DYNAMIC PUBLIC TRANSIT ACCESSIBILITY DEPENDING ON WEATHER CONDTION: USING GTFS AND TRANSIT OPERATION DATA
Abstract ID: 543
Individual Paper Submission

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Transportation accessibility has major impact on lifestyle of citizens by creating spatial variability of economic and social hierarchy (Martens, 2016). Public transit accessibility varies dynamically depending on transfer and temporal transportation environment. To reflect dynamic variation of transit accessibility, for the last decade, travel time-based accessibility is widely used as an index of public transit networks service rather than traditional Euclidean distance-based accessibility. And several studies have used GTFS data format and GIS Networks analyst toolkit to measure travel time that reflect public transit feed(information), such as headway of transit vehicle, arrival time, transfer information (Salonen, 2013; Farber 2014, 2017). However, most GTFS data is consist of not actual operation data of public transit service but planned schedule of transit operator. For this reason, it does not account for variations of accessibility depending on abrupt change of transportation environment. In particular, public transit accessibility under extreme weather conditions, such as heavy rain, snow or disaster, may show substantially different spatial and temporal patterns from that of normal transit condition.

The main purpose of this study is measuring dynamic public transit accessibility that account for abrupt traffic congestion, and analyzing accessibility change depending on extreme weather condition. Heavy rain may reduce the average vehicle speed on the road (Chung, 2006), and it may cause severe traffic congestion during peak hours. Various transportation factors, such as traffic volume, locational characteristics of road, and potential travel demand on a specific time, may affect public transit accessibility. This study focuses on evaluating discrepancy of public transit accessibility between normal transit condition and heavy rainfall situation.

The study used public transit information of Busan, South Korea. South Korea has high instantaneous precipitation due to the localized heavy rain in summer season. We assumed that geographical characteristics of Busan (hilly and curved roads network) may clearly demonstrate the effect of weather conditions on public transit accessibility. During 2018-2019, we chose the 4 days of heavy rain and 4 days of sunny days. To account for day of a week factor, each sunny day was selected as the same day after 7 days from heavy rain day.

We generated GTFS data based on the actual public transit operation data to create transit environment. After creating 1km grid in study area, the center point of each grid was used as OD points, and then the travel time of each OD route was calculated using ArcGIS' GTFS network analysis tool. Travel time of 578,630 OD routes were calculated with 5 minutes interval from 06 to 24 hour. We defined the level of public transit accessibility using the average of the speed from specific OD point to others OD point (exit speed) and the average of the speed from others OD point to specific OD point (entry speed).

The findings showed that change of entry speed on heavy rain days had different spatial patterns from the change of exit speed. These patterns seem highly dependent on time (peak or non-peak time), geographical conditions and amount of rainfall. More exploratory and explanatory results will be presented at the conference. We hope that dynamic evaluation of public transit service may provide useful analytical framework to understand the relationship between abrupt traffic condition change and its influence on public transit service.

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Key Words: Public Transit, Dynamic public transit accessibility, GTFS, Transit operation data, Travel time-based accessibility

LONG-LASTING IMPACT OF PAST MOBILITY CULTURES ON TRAVEL BEHAVIOR AFTER RESIDENTIAL RELOCATION: THE CASE OF SEOUL, SOUTH KOREA
Abstract ID: 546
Individual Paper Submission

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High levels of automobile dependence is understood as an undesirable consequence of urban sprawl in discourse on transit-oriented sustainable development, and smart growth. At the same time, extensive literatures have long studied to empirically scrutinize the association between built environment, individual socio-demographics, and transportation (Ewing & Cervero, 2010; Sung & Oh, 2011). Based on the empirical findings, many have prompted planners and localities to increase development densities, encourage mixed pattern of land-uses, and invest in public transit. However, one of the essential questions is whether current influence of the planning interventions for sustainable development will persist or perhaps stagnate in the future in consideration of cost-effectiveness. To our best knowledge, few studies tackled the questions of long-term effect of transit policy interventions.

The purpose of the present study is to examine whether living experience in transit oriented neighborhood may exhibit their influences on travel behavior even after residential relocation occur. Our study particularly addressed the question of whether living experience in the neighborhood where a certain travel mode is dominant (past mobility cultures) influences the mode choice after moving in current neighborhood. For the purpose, this study is based on two theoretical framework:1) residential self-selection (Cao, Mokhtarian, & Handy, 2009), and 2) habitual behavior theory (Aarts, Verplanken, & Van Knippenberg, 1997) to support our hypothesis.

This paper uses the National Household Travel Survey (NHTS) for Seoul Metropolitan Area (SMA) collected in 2006 and 2016 and Internal Migration Statistics for years 2006-2015 (10 years) to assess the impacts of past mobility cultures on travel behavior after residential relocation in a sample of adults aged 30-59 years in South Korea. Analysis in this study consisted of three parts. For a first insight into the effects of a residential relocation between cities of variant mobility cultures on travel mode share in the target year, we investigated spatial distribution of internal migration by age-group within the city of Seoul. Secondly, we developed Ordinary Least squares (OLS) regression models to examine associations between the mode shares at aggregated neighborhood-level and past mobility culture. The linear regression models were developed in which mode share of each neighborhood in 2016 is a function of share of migrants, the socioeconomic, and built environment. We defined migrants share variable as proportion of those who moving from the past neighborhood in each neighborhood in 2016, and thereby we assumed that it represents past mobility cultures. Lastly, we scrutinized the impact of past mobility cultures on travel behavior by age-group aiming to better capture the policy implications taking into account demographic variances.

The findings suggest that living experience in the neighborhood where transit mode share is dominant might have a noticeable effect on travel share of current neighborhood. Therefore, the present study could shed light on role of residents' pre-established habitual behavior on current mode choice even after residential relocation occurs. The long-lasting impact of the past mobility culture seem more evident for younger age groups. We discussed implications of this study focused particularly on target, approaches, and timing of planning interventions for transit oriented development.

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Key Words: Travel behavior, Past mobility cultures, Residential relocation

STREET CHARACTERISTICS CORRELATED WITH OLDER PEDESTRIANS' PERCEIVED SAFETY IN SHANGHAI, CHINA

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Pedestrians' safety issues of elderly are crucial because older pedestrians are more likely involved and injured in traffic accidents, due to their age-related decreases of physical, sensory, and cognitive functions(Oxley, Fildes, & Dewar, 2004;Burton & Mitchell, 2006). However, rapid urban sprawl has changed urban built environment patterns and as a result, has made walking, formerly a practical means of transportation or recreation, more difficult. Making older adults' walking activities easy and safe should be a key public policy concern for planners, policymakers, and government officials.

While much attention has been paid to issues associated with aging population, research on elder's walking safety issues from street built environment perspective is limited. Meanwhile, the impacts of age-related body functional limitations on older pedestrians' safety were overlooked. Besides, conventional survey method on street characteristics either employed real-world streetscape which inevitably contained interferential factors like weather condition and temporal factors(Ewing & Handy, 2009;Van Cauwenberg et al., 2014), or employed skeletal streetscape maps from bird's-eye view(Harvey, Aultman-Hall, Hurley, & Troy, 2015) which ignored emic pedestrians' perceptions. The current research, employing a novel survey protocol, aims to investigate which street characteristics influence perceived safety among older pedestrians in Shanghai, China, controlling for the demographical and body functional confounders.

A mix of research methods containing both quantitative and qualitative analyses were employed. The researchers recruited 68 elderly urban dwellers who each agreed to take a survey on perceived safety. The survey protocol consisted of 39 simulated streetscape images which contained 12 variables of street characteristics from street interface, sidewalk, isolation facility, and traffic aspects. Individual demographical and body functional information was acquired through a self-administrated questionnaire. 2652 observations (39 images×68 individuals) were acquired and an ordinal logistic regression was performed to investigate the impact of street characteristics on older pedestrians' perceived safety. Then a semi-structured in-depth interview was conducted with 8 out of the 68 participants.

Regression model results showed that age-related functional decline, such as the presence of arthritis disease, had significant impact on older pedestrians' perceived safety. Street built environment characteristics such as the street interface type, elevation differences, footpath width, paver textures, isolation facility type, and pedestrian and vehicle traffic had impacts on perceived safety after adjusting for individual demographical and body functional limitation variables. The qualitative interview also revealed older pedestrians' concerns on sidewalk maintenance and presence of non-motor vehicle on sidewalk.

A better understanding of the relationship between street characteristics and older pedestrians' perceived safety will contribute to making cities more inclusive and improve the quality of life (QoL) of the elderly. The results of the research can help guide inclusive urban street design and transportation management and planning both in China and other highly-populated areas.

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Key Words: Older pedestrians, perceived safety, built environment, simulated streetscape, functional decline

ACCEPTABLE LOSSES? QUALITATIVE ANALYSIS OF FATAL CAR-ON-VULNERABLE-ROAD-USER CRASHES IN THE RURAL US
Abstract ID: 576
Individual Paper Submission

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Fatal car-on-vulnerable-road-user (VRU) crashes in the United States are too frequently treated as accidental events; that is, as random, unavoidable features of the transportation system. Media coverage of crashes involving VRUs shows a societal bias against such users as unwelcome (at least) and at fault (at most) (Scheffels et al., 2019). Moreover, transportation professionals accept that our transportation system is inherently dangerous, and even in the best circumstances, some crashes are inevitable (Dumbaugh, 2005).

Rural areas and non-urban small towns are some of the most dangerous places for VRUs. Because of the long distances between destinations, poor driver behavior, insufficient VRU infrastructure, and high vehicle speeds, when car-on-VRU crashes occur they tend to be deadlier than in urban areas (Rakauskas et al., 2009). It is in this context that we explore the distinction between a "crash" in which the driver is considered at fault and an "accident" in which no party is to blame. Despite laws in place to punish drivers in fatal VRU crashes, such laws are applied inconsistently. The context in which punitive measures are sought can be used to identify societal tolerance for VRU fatalities. We seek to establish am operational baseline for the distinction between a crash and accident by focusing on the most severe crashes (i.e., fatal) in some of the most dangerous built environments (i.e., rural) for VRUs. Understanding this distinction establishes the type of VRU fatalities that are considered acceptable in the transportation system.

The data comes from fatal car-on-bicycle and car-on-pedestrian crashes in rural counties in the State of Nebraska, United States, between 2008 and 2019. Each crash record is supplemented with Google Street View imagery, contemporaneous news sources, and legal records. Qualitative content analysis is used to identify crash typologies, develop a conceptual model leading from context-to-consequences in fatal car-on-VRU crashes in rural areas, and establish a threshold for driver consequences in fatal car-on-VRU crashes. This is an exploratory approach to first understanding the context (i.e., who is involved and where do crashes occur), then articulating distinctions between "crashes" and "accidents."

Findings suggest that VRU fatalities may be disproportionately caused by aging drivers, and victims may be some of the most vulnerable members of society (e.g., aging, children, and those with disabilities). Results also indicate that our legal system is incapable of addressing car-on-VRU fatalities lacking obvious driver negligence. This raises troubling questions around VRU safety and driver responsibility. For example, should a driver be held accountable for hitting and killing a child who was "playing in the street"? (i.e., unaware of the potential risks). Or should an aging driver, who may not even be aware of any age-related driving impairments, go to prison for accidentally hitting and killing a bicyclist?

These questions transcend the decision of whether or not to bring consequences a driver. Attempting to determine appropriate punishment in tragic situations largely misses the point. Punishing drivers cannot

act as a deterrent to negligent actions in situations lacking clear negligence. This work is not meant to address the role of consequences in punishing or deterring negligence in our transportation, but rather to spur a conversation about what the standard for consequences means for American society.

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Key Words: Vulnerable Road Users, Bike/Ped Safety, Rural Safety, Driver Behavior

ASSESSING THE IMPLEMENTATION OF THE ADA PARATRANSIT ALTERNATIVE SERVICE
Abstract ID: 577
Individual Paper Submission

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Despite a vital role that transportation plays in many aspects of daily life including access to employment, education, health care, shopping, social occasions, and multiple recreational activities, many people in the United States do not have access to adequate transportation (NCD, 2015). Transportation barriers are exponentially worse for people with disabilities, which result in dependence on ADA paratransit service (Bezyak et al., 2017). ADA paratransit service provides a demand-responsive transportation service for people who are unable to use the fixed-route bus or do not have an accessible path to a transit stop. This most expensive form of accessible transportation has increased the cost burden for the transit agency (GAO, 2012).

Innovative solutions have been introduced to address the limitations of current ADA paratransit service models. Recently, the partnership between transit agencies and technology-enabled third-party companies (i.e., transportation network companies [TNCs], taxis, and wheelchair transport companies) has become a popular alternative option of providing reliable and cost-efficient on-demand services for paratransit customers (Koffman, 2016; Curtis et al., 2019). These alternative services use comprehensive technology platform which makes them convenient to engage and use (e.g., request and pay for a ride through a smartphone and track the location of the vehicle). Although some studies have focused on a cost-benefit analysis of the alternative service, there is still a limited understanding of how well people with disabilities are being served with this emerging service.

The purpose of this study is to explore the implementation and evaluation of the ADA paratransit alternative service. The research questions are (1) What approaches do transit agencies use to provide accessible services to people with disabilities in terms of vehicle and technology accessibility and training? (2) What benefits and challenges do transit agencies experience implementing the service? (3) What impacts does this service have on service delivery and operation costs? And, (4) how do transit agencies measure the performance of the alternative services?

This study will examine 15-20 transit agencies in the U.S. that have adopted innovative alternative paratransit service models to provide on-demand accessible transportation for people with disabilities. Representatives from each transit agency will be recruited to participate in a web-based survey and follow-up semi-structured phone interviews in spring 2020. The survey will ask about the accessibility features of the alternative service, the benefits and challenges operating the service, key performance measures to evaluate success, and the impact of the alternative service on ridership and operation cost. The interview will further explore service evaluation and ways to improve current service operation. Data analysis will be conducted using open coding and thematic coding methods for open-ended responses. The service outcomes (i.e., service delivery and costs) and ranked performance measures will be summarized and compared based on jurisdictional size.

Findings will identify the benefits and challenges of implementing the ADA paratransit alternative service. Providing reliable access to wheelchair accessible vehicles and ensuring access to the service for non-smartphone users have been identified as continuing challenges of implementing the alternative service in the partnership between transit agencies and TNCs. The approaches taken by transit agencies to overcome those challenges will be further examined. Some transit agencies have tried to assess the service performance but obtaining the relevant dataset remains to be a challenge. The results will call attention to the need to develop a plan for service evaluation as part of the initiation of partnerships and to provide tools to measure the impact of the service that resource-constrained transit agencies can efficiently deploy. The study on implementation and evaluation of innovative alternative services will facilitate informed decisions on implementing more accessible services for people with disabilities.

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Key Words: Accessible public transportation, Alternative service, TNC partnership, Service evaluation, People with disabilities

DO MICRO-MOBILITY MODES WORK IN BAD WEATHER?
Abstract ID: 578
Individual Paper Submission

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Micro-mobility options, such as shared bicycles and shared e-scooters offer the opportunity to substitute vehicle trips with environmentally friendlier options within a city. However, these modes expose users to environmental effects, namely weather conditions. If they are not used in colder, rainier, or hot and humid conditions, their ability to fully substitute for motorized vehicles may be limited. The sensitivity of weather impacts on e-scooters and shared bicycles are analyzed in this study.

I use data available from three cities with on-line portals. Austin, TX with a large number of e-scooters, but also both dockless bicycles and docked bicycles; Louisville, KY with shared e-scooters; and, Minneapolis, MN, with both shared e-scooters and shared bicycles. This provides variation in climatic conditions. Hourly weather data is available from NOAA. Other factors are also important to control for,

especially large events, such as SXSW in Austin.

Analysis of the correlations between weather conditions and usage is complicated by various statistical issues. The data tends to not be normally distributed and is often modeled as count data with a Negative Binomial Model. However the data is also serially correlated, especially when examining hourly counts and hourly changes in weather conditions. While techniques are available for controlling for serial correlation (e.g. Prais-Winsten models based on a logarithmic transformation), there may still be problems with multi-collinearity of weather variables. One approach that gets around these complexities in the data is a Random Forest model, which is based on data partitioning methods. These can provide a level of variable "importance", that is which factors have the most impact on the dependent variable. These models also can be used to forecast future effects, providing a way to determine marginal effects. These issues will be explored in this research.

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Key Words: transportation, micro-mobility, weather

UNDERSTANDING THE EFFECT OF SHARED MOBILITY ON THE VEHICLE OWNERSHIP DECISION-MAKING PROCESS
Abstract ID: 596
Individual Paper Submission

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Over-dependence on automobiles in the past and present has led to several negative societal outcomes, such as climate-degrading emissions, lost time through congestion, and disparities in accessibility to opportunities. Individuals are still heavily reliant on personal cars, despite recognition of the contribution of car use to climate change. Over the last decade, information and communication technologies (ICTs) have fueled the rise of the shared/access/gig economy, which has cast doubts over the paradigm of private car ownership. In the urban mobility sector, access-based mobility services like mobility-on-demand (e.g., ride-hailing and car-sharing) and micro-mobility (e.g., bike-sharing and scooters) may provide an incentive for households not to purchase private vehicles, or reduce the frequency of private vehicle usage. Understanding transformations in urban mobility is imperative for making adaptive and resilient plans for the future, especially in the wake of climate change-related uncertainties. Therefore, it is both worthy and timely to investigate whether the benefits of the shared economy will extend to the issue of car ownership, and contribute to a more sustainable future.

We argue that most empirical literature related to vehicle ownership considers a flawed static approach, which can be improved through a deeper understanding of the dynamic processes that lead up to the decision to purchase a vehicle, while integrating the effects of other urban long-term decisions (such as residential and job location choices) and life-cycle events (such as marriage or childbirth). Consequently,

we designed a retrospective mobility biography instrument using mixed methods, which focuses on households that changed private vehicle holdings (i.e., bought/sold/traded personal cars) in the last three years (to minimize recall bias). While data collection has been completed for Singapore, we are actively engaged in implementing the instrument in Boston, hoping to conduct a comparative analysis of our findings.

The first stage uses an online recruitment platform to collect information on demographics, car ownership history, and usage patterns of shared mobility. About 20-30 individuals are purposefully sampled from the respondents using a statistically non-representative stratified sampling procedure that aims to maximize the diversity of the sample (i.e., sampling for range). Semi-structured in-depth interviews with these individuals are expected to provide a deeper conceptual understanding of (a) the role of shared mobility in the lives of individuals at different life-stages, and (b) the potential of shared mobility to impact their car ownership decisions. The second stage uses the same online recruitment platform to collect quantitative data from about 1,000 households on the timing, reasons, and costs of changes in their private vehicle holdings. Data on socio-demographics, life-cycle events, attitudinal perceptions, and stated preferences towards improved public transport and shared mobility services are also collected.

We use qualitative research methods such as grounded theory to build up a conceptual framework of the influence of shared mobility services on the vehicle ownership decision-making process. For analyzing the quantitative data, we use econometric hybrid choice models (HCMs), such as the Latent Class Choice Model (LCCM) and the Integrated Choice Latent Variable (ICLV) model, which have the capability to (a) infer latent behaviorally diverse classes based on class membership functions, (b) integrate individual attitudes and perceptions through latent variables, and (c) incorporate taste heterogeneity among decision-makers through the consideration of random parameters.

We hope that this study can provide suggestions towards the types of population cohorts that might be most receptive to sustainable and shared mobility services, along with the timing of personalized interventions with respect to their life-stages (i.e., "windows of opportunity" for policy-makers when households are most susceptible to sustainable nudges).

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Key Words: Shared mobility, Vehicle ownership, Mobility biography, Life events, Long-term choices

SIDEWALKS MATTER: THE CASE FOR INCORPORATING DETAILED SIDEWALK DATA INTO ACCESSIBILITY ANALYSIS
Abstract ID: 601
Individual Paper Submission

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First- and last-mile accessibility along the pedestrian network is critical to ensuring individuals can reach public transit service from their origins and destinations. The quality of the built environment is especially relevant for people with disabilities when using transit, and the existing barriers in the pedestrian network unfairly burden this group. Barriers to reaching and using public transit systems have been identified in previous research, including the built environment near transit stops, physical stop and station design, community connectivity through the pedestrian grid, and operator attitudes (Bezyak et al., 2017; Lubitow et al., 2017). The impact of physically inaccessible transit stops and stations also has been identified as disproportionately burdening access to jobs for people with disabilities (Grise et al., 2018). However, accessibility along the first and last mile for people with disabilities has been largely overlooked for people with disabilities in planning literature. Similarly, accessibility measures widely used by planners and practitioners in equity analyses often assume potential transit users can traverse their local built environments to reach transit.

In this paper, we address this gap in academic literature using a pedestrian network accessibility analysis for people with disabilities that employs detailed sidewalk data. We prepare a pedestrian network analysis for Seattle, WA and use it to quantify the disproportionate challenges faced by people with disabilities when accessing the nearest transit stop. Sidewalk observations that affect the quality of the pedestrian network were included as network restrictions, portraying actual challenges that must be overcome in the existing built environment. We compare the resultant travel times and impacted populations between three analyses: 1) a baseline network analysis with no sidewalk observation data, 2) a network analysis with sidewalk observation data that impacts ADA compliance, and 3) a network analysis with all sidewalk observations as restrictions. Including sidewalk data in the accessibility analysis from census block origins to public transit stop destinations shows a substantial decrease in the share of census blocks and people with disabilities able to reach transit service. The disadvantages experienced by people with disabilities caused by their local built environment are highlighted.

Limited ability to traverse the local environment to access desired destinations leads to social and physical exclusion, impacting quality of life (Delbosc & Currie, 2011; Lucas et al., 2001). Collecting and using detailed sidewalk data for accessibility analysis is crucial to improving transportation equity and planning for vulnerable communities. Our methods can be used to help agencies prioritize pedestrian network improvements based on locations with high concentrations of people with disabilities and the magnitude of challenges that they face.

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Key Words: accessibility, disability, pedestrian planning, transportation equity

BUILT ENVIRONMENT, AIR POLLUTION EXPOSURE, AND PUBLIC ACCEPTANCE OF ANTI-CONGESTION POLICIES: A MULTILEVEL STRUCTURE EQUATION MODELING ANALYSIS

Abstract ID: 609
Individual Paper Submission

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Abstract: Facing severe traffic congestion, many large cities have proposed or carried out anti-congestion policies such as road pricing schemes and traffic restriction strategies like the license plate control. While public acceptance is a major obstacle to policy implementation, the factors affecting the acceptance of anti-congestion policies remain unclear, particularly on the context of developing countries like china. Few studies have investigated whether public acceptance is associated with the built environment which people live in as well as the nature environment which people are exposed to. This study thus develops a novel multilevel structural equation model (MSEM) with ordered Logit responses to investigate direct effects, mediation effects and moderation effects among built environment, air pollution exposure and public acceptance towards variant anti-congestion strategies. This study relies on a questionnaire survey of 1262 residents in 26 communities in 2017 Beijing, which had been suffering from notorious congestion and air pollution issues, with both restriction and pricing policies under implementation or consideration.

Several interesting findings are detected. First, after controlling for individual-level socioeconomic characteristics, both built environment and perceived air pollution at the neighborhood scale have significant, direct effects on the acceptance of plate-control and pricing policies. People living in neighborhoods with less land use diversity and closer to bus stops look less satisfied with the plate control policy, but look forward to the pricing scheme. Also, those living in highly-polluted neighborhoods more support pricing while devaluing the plate control. Second, people's perception on the air pollution exposure plays crucial mediation and moderation roles in the effects of built environment on the acceptability of anti-congestion policies. For example, a significant mediation effect suggests that residents in the neighborhoods with larger population and intersection densities and farther away from the city center often perceive more severe air pollution, thus tending to be more willing to accept the pricing scheme. In addition, a better public transit access is associated with a higher acceptance level of congestion pricing, while this positive effect is reinforced by the perceived level of air pollution. This moderation effect suggests that those living in a highly-polluted neighborhoods of accessible public transit appear most support the pricing scheme. Third, residents with higher levels of household income, education, and car ownership have a lower acceptance of anti-congestion policies, especially the pricing scheme, because they are more car-dependent and less exposed to air pollution.

This study has two major contributions. First, we develop a novel method for evaluating the comprehensive relationships, particularly the mediated and moderated effects, among built environment, air pollution exposure, and the acceptance of anti-congestion policies. Second, the findings provide an enlightenment for land use planning to facilitate the implementation of anti-congestion policies in Beijing from the perspective of environmental justice.

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TRAVEL ACTIVITY AND AIR POLLUTION EXPOSURES: ESTIMATING RACIAL, ETHNIC, AND INCOME DISPARITIES USING FINE-SCALED NO$_2$ AND GPS DATA

Abstract ID: 614
Individual Paper Submission

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More than 100 million people in the U.S. live in areas where air pollutant concentrations exceed standards designated to protect human health. While air quality in U.S cities has improved over the last few decades, there is evidence of substantial intra-urban variability in pollutant distributions, which affects different social and economic communities disproportionately. Estimating travel activity and air pollution exposure disparities across diverse urban populations remains a challenge linking public health, environmental justice, and urban planning. Travel patterns introduce variability in the timing, location, and degree of exposure, but research on exposures to individuals as they travel throughout the day remains limited.

In this study, we combine fine-scaled airborne observations of nitrogen dioxide, a major urban air pollutant, with a larges GPS-tracked travel survey over the Los Angeles Air Basin in California. We compare residence and travel-based air pollution exposure estimates as a function of household income and race-ethnicity. Specifically, we use airborne remote-sensing data collected by the NASA GeoTASO (Geostationary Trace gas and Aerosol Sensor Optimization) sensor to estimate air pollutant NO$_2$ for Los Angeles region. We use GPS-tracking survey data of thousands of individuals collected in Los Angeles to conduct exposure analysis by aggregating activity-based spatial footprints. We then estimate exposure as the integrated NO$_2$ concentration over the spatial footprints as a function of the time spent in each location. We quantify air pollution exposure inequities for different demographic groups.

The results show disparate travel route, distance, and destination clustering patterns by race, ethnicity, and income with significant effects on exposures. White travelers are more likely to travel through and to less dense areas, while Latinx travelers are more likely to move through dense, concentrated places. We find that the travel-based NO$_2$ exposure estimations vary across different racial groups and poverty status, with disproportionate NO$_2$ burdens are more likely experienced by high poverty and non-white demographics. Communities that take shorter trips in urban areas may still be exposed to greater air pollution, and racial/ethnic disparities exist in pollution exposure. Although focused on the Los Angeles metropolitan area, findings can inform planning practice in cities around the world experiencing significant air pollution burdens. In particular, the results highlight that shorter trips may not result in reduced exposures during travel, and the concentration of activities in central areas also results in increased exposure. Critically, we do not argue that dense urban development is inherently problematic, but the consequences of varying land use and travel patterns are still borne primarily by low income and minority populations. Therefore, short-term approaches to reducing total emissions exposures for burdened populations, whether during travel or not, should be considered as long-term policies to reduce overall emissions slowly take effect.

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Key Words: Travel behavior, Air pollution, Environmental inequality, Spatial analysis

WHY DON'T SOME PEOPLE CARE TO SHARE? EXPLORING BARRIERS TO THE USE OF SHARED RIDEHAIL SERVICES.
Abstract ID: 619
Individual Paper Submission

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Transportation Network Companies such as Uber and Lyft are generating considerable excitement. They offer many benefits to travelers. However, there is concern about whether TNCs might induce more vehicle miles traveled by prompting new trips or diverting trips that might otherwise have been made by transit or walking. In part because of this, Uber and Lyft have created shared services, entitled UberPool and Lyft Shared, which match riders who are traveling along similar paths so they can share rides for a discounted price. This may potentially reduce VMT, with all the benefits this would entail.

Yet sharing may not be for everyone. This research focuses on the attitudes of Uber and Lyft travelers who have access to shared service but have never tried it ("non-sharers"). It makes use of a survey of riders, former riders, non-sharers, and drivers. We have a sample of 413 quality responses from non-sharers.

First, we used multinomial probit regression to determine which characteristics help predict who falls into our three rider groups. Owning more private vehicles is significantly associated with being a "non-sharer." The predicted probabilities for gender suggest that women are as likely as men to try Pool/Shared, but are more likely to stop using the services after a few trips.

We asked non-sharers to rank the reasons they have not tried sharing. The biggest disincentives were the extra travel time, the unreliability of travel time, and not wanting to travel in an overcrowded vehicle. There were medium-level scores for safety concerns, not being familiar with the services, the monetary savings not being high enough, and the fact that non-sharers they often travel in a group (such as their family) so that sharing is not really an option. Relatively unimportant reasons were that non-sharers do not care about the environmental benefits, that the services are not available where they travel, that they often travel for work which pays their fare, and that they are often carrying bulky things like luggage or purchases. An open-ended question showed that a desire to not share a space with strangers is another impediment. One particular concern is that women ranked worries about safety as more of a deterrent than men did.

We found evidence that non-sharers would demand hefty discounts for the extra delay Pool/Shared entail. These ranged from requiring a $13 discount for a trip that might have a delay up to 30 minutes to a discount of over $21 for a trip that might take up to an extra hour.

Finally, we asked non-sharers for suggested improvements that might make them more likely to share. Substantial numbers suggested reducing the cost, making travel time shorter and more reliable, reducing the potential number of stops and streamlining the routing, and improving safety, perhaps by sharing more details about co-riders. However, 245 of the 413 respondents said there were no improvements that could ever make them share.

Our recommendations include better-publicizing the shared services, reducing the cost of shared trips and potentially increasing it for solo trips, reducing the amount of stops and route deviations, discouraging bad passenger behavior (perhaps by allowing riders to rate other riders or promulgating a sharing "code of conduct"), improving the social experience by using social media to inform riders when they have things in common, and focusing on safety issues that are particularly important to women, perhaps even giving women the option to only share with other women. Still, our survey suggests that while it may be possible to lure new riders, for many people sharing will never be a viable option.

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Key Words: Ridesharing, Ridehailing, Uber, Lyft, TNC

AIRPORT-DEPENDENT ECONOMIC ACTIVITY: DO AIRPORT-CENTRIC SPATIAL THEORIES EXPLAIN AIRPORT-DEPENDENT ECONOMIC DEVELOPMENT?
Abstract ID: 622
Individual Paper Submission

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The Aerotropolis, Airea, and Airport Corridor are among multiple examples of airport-centric spatial theories designed to explain prescriptive and hypothetical land use patterns of airport-dependent economic activity. In 2010, urban planner Maurits Schaafsma introduced the 'Airport Corridor' as a model that describes development extending from an airport to the center of the host city along a spine of transportation infrastructure, such as a train or highway. Alternatively, architect Johanna Schlaak proposed the 'Airea' in 2010 to describe small, fragmented islands of development with economic activity correlated to the airport, but not necessarily adjacent to the airport. John Kasarda, an aviation logistics academic and consultant, developed the idea of the Aerotropolis in the 1990s, which culminated in a book released in 2011. The Aerotropolis is presented as the intentional concentration of industrial and commercial development surrounding an airport, primarily in service to the economics of just-in-time logistics and globalization. Despite the existence of these and other theories, there is not yet supporting

empirical work to map and interpret actual patterns of airport-driven economic development in the United States.

To fill this gap, this study characterizes the spatial patterns of business clusters that emerged near US airports since the 1990s. The research inquires into the extent that actual patterns of airport-dependent economic activity matched prevailing theory. The overall research approach consists of establishing the airport study sample, performing spatial analysis to evaluate hot spots of business establishments categorized as 'transportation and warehousing' or 'accommodation and food services', and then interpreting the spatial patterns of those clusters over time and in the context of airport-centric spatial theories.

The airport sample selection process relies on the 'T-100 Market Airline Traffic Data' dataset from the Bureau of Transportation Statistics to obtain annual airfreight and enplanement data at nearly 400 nationally significant airports from 1990 to 2016. From an initial sample of nearly 400 nationally significant airports, this study identifies a subset of 57 US airports that exhibited significant and consistent airfreight growth.

The spatial analysis utilizes panel datasets describing business establishments, sourced from County Business Patterns (CBP) from 1994 to 2017 and Infogroup from 1997 to 2017. The CBP data is aggregated for each zip code tabulation area and provides counts of industry-specific business establishments and ranges for employee counts. Infogroup offers higher granularity data on the scope of an individual business operation, including sales volume. The Getis-Ord G_i^*, a spatial measurement tool, is used to detect hot spots of transportation and accommodations businesses and measures the intensity of the clusters with respect to the broader metro area. The change in count, location, and intensity of the business hot spots is measured across the study period, from 1994 to 2017.

The final portion of the study includes the comparative spatial analysis, where the economic development patterns revealed in the hot spot analysis are compared to the key characteristics of existing airport-centric land use theories: the aerotropolis, the aeria, and the airport corridor. Preliminary results show that the aeria model is the most descriptive of observed development. The final discussion of results will discuss relationships between the growth of airport operations and changes in business activity over time, lend insight into the extent that airport-adjacent communities serve as hosts to airport-dependent businesses, and present implications for the future of airport development and associated land use planning.

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Key Words: Transportation, Airport planning, Land use, Economic development, Freight

TRENDS IN COMMUTING EFFICIENCY: THEORIES, EXPLANATIONS, AND PLANNING IMPLICATIONS
Abstract ID: 629

Individual Paper Submission

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Average American workers now spend almost eleven percent of their work day commuting. At $28 an hour this represents a cost of almost twenty five dollars of actual wages and at 50%, a cost of over twelve dollars per work day. In an MSA of 100,000 workers, this is a cost of 1.2 million per work day in just the value of time. With the addition of vehicular costs, environmental impacts, and cost of infrastructure to support the commute, it represents a significant disamenity. The choice of commuting represents the optimal balance in maximizing the benefits of employment (income maximization and personal satisfaction/psychic benefits), and housing amenities (housing characteristics, neighborhood attributes, and quality of schools). Even if workers were sticky in their choice to move locations of employments and/or residence, controlling for changes in the labor market characteristics, over time one would expect the average commuting time to decline up to some MSA specific threshold.

In literature, there are three main approaches to modelling commute. Literature on excess commuting (Hamilton, 1982) and on Commuting Paradox (Sturzer and Frey, 2008; Frey and Stutzer, 2014) challenge the standard economic theories - labor market analyses focus on supply of labor assuming a fixed housing market, urban economists focus on housing decisions and assume the labor market in equilibrium. A more recent development (Monte, Redding, and Hansberg, 2018) has been to explain the heterogeneity of commute with local employment elasticities. The second approach looks for ways to decrease the negative impact of commuting on health and well-being (Hamer and Chida, 2008) and examines commuting as a function of the built environment (Ewing and Cervero, 2010). The third approach examines commuting issues through the lens of equity planning (Boarnet et.al, 2017, Kawabata and Shen, 2007).

Using data from National Household Travel Survey, Census Transportation Planning Products Program, and Urban Mobility Report for 2009-2018, we test for significance of several attributes of the MSA labor market (growth, housing characteristics, regional locations, demographic profiles, income profiles, and sprawl) on shifts in average commute time. Our initial findings suggest that holding growth rates of population and income constant, average commute time is invariant to built form. We further investigate the upward trends in commuting costs and discuss the roles that residuals composed of land use policies, household sorting, distribution of school district quality, municipal infrastructure provisions, and political sorting of urban regimes play in impeding commuting efficiency in urban spatial structure. The parameter estimates allow us to refine and point to the causes of inefficiency of the urban spatial structure over the last nine years.

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Key Words: commuting Patterns, urban spatial structure, equity planning, built form

"DESPERATELY IN NEED OF CAR": ANALYZING CROWDFUNDING CAMPAIGNS FOR CAR PURCHASES AND REPAIRS ON GOFUNDME.COM
Abstract ID: 639

Individual Paper Submission

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Our study explores the phenomenon of using the crowdfunding website GoFundMe.com to raise money to purchase and or repair a personal vehicle. We gathered 325 personal narratives and related metadata from GoFundMe campaigns posted from January 2018 through July 2019 to examine three research questions. First, how do campaigners on GoFundMe describe their need for personal vehicles? Second, what precipitating events led them to seek crowdfunding for a car purchase or repair? Third, what are broader contexts for these requests for financial assistance?

We find that many campaigns describe several interrelated crises, complications, or challenges that the campaigners faced, such as medical conditions, loss of employment, and housing crises. Most campaigners are without a functioning car because of an unexpected event—a car crash, a breakdown, or repairs piling up—combined with their inability to pay for the repairs or replacement. Finally, campaigners wanted cars to travel to work and school, to chauffeur children, and to access medical care. By illuminating some common reasons that households lose access to a car, our findings add to our understanding of households' precarious grasp on car ownership.

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Key Words: car ownership, crowdfunding, text mining

HOW DO PEOPLE ACTUALLY MAKE TRANSPORTATION DECISIONS? EVIDENCE FROM 7,000 REDDIT POSTS
Abstract ID: 642
Individual Paper Submission

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Individual behavior change presents a significant opportunity for reducing carbon emissions and other negatives associated with car use. While long-term solutions like programs of land-use change show promise, targeting individual behaviors in the short term could curb emissions now.

Many efforts have investigated both why people travel the way they do and how these behaviors change. Notable approaches include the use of disaggregate data (Klein & Smart, 2019), surveys (Anable, 2005), and experiments (Spears et al., 2017). This project adds to these efforts, using Reddit data to examine people's thought processes as they make transportation decisions.

This study aims to understand nuance and variation in travel decisions, asking three primary research questions:

1) How do people determine their travel patterns? (e.g. travel mode and trip frequency)

2) What factors appear to precipitate changes in transportation behavior?

3) What factors appear to make behavior patterns stay the same?

These questions require access to people's thought processes as they consider transportation decisions. I collected discussions of people's thinking posted on Reddit, an online social content-sharing site where people post in subject-specific forums (n = 147 threads, > 7,000 comments). These threads represent seven US cities, ranging from sprawling and auto-dependent (Houston) to compact, walkable, and transit-oriented (Boston). This spectrum reveals which patterns are widely shared and which are idiosyncratic. Reddit allows me to directly observe people conversing about their transportation decisions, current behaviors, and histories.

I use content analysis to analyze the data, employing a primarily inductive coding process to assign a summative, essence-capturing attribute to each comment (Hsieh & Shannon, 2005). The codes are largely derived from the dataset, with some coding inspired by existing transportation scholarship. For example, we know that life events like moving, changing jobs, or coupling can precipitate changes in transportation patterns (Scheiner, 2018), so I sought these themes specifically. I identify, parse, and analyze themes and patterns in the data, while identifying relationships between them. Finally, these components are contextualized within the research objectives and existing scholarship.

I find that while travel decisions sometimes reflect the assumptions of microeconomics or branches of social psychology (e.g. Theory of Planned Behavior), they do not always conform to those assumptions. Sometimes people engage in thorough cost-benefit analysis, weighing e.g. the cost of a monthly transit pass and Uber/Lyft rides versus car payments, insurance, and gas. But there are many other ways people arrive at their decisions, ranging from quite rational to seemingly thoughtless. Understanding of this variation can help to tailor potential behavioral interventions.

This project adds to current understanding of transportation behavior by asking questions about granular, nuanced transportation decision-making processes and using a novel data source to answer these questions. Its results inform what interventions are likely to be effective at what times and in which contexts to reduce car use. They also highlight the potential for smaller behavioral shifts. For example, even if someone owns a car for grocery shopping and errands, but begins commuting to work by bus, the reduction in car trips compared to driving everywhere still makes such interventions worthwhile.

This research contributes to the understanding of individual transportation behavior and the varying ways in which it manifests. This understanding informs a policy goal of promoting sustainable travel behavior. Additionally, it serves as a foundation for future research that connects individual transportation decision-making processes with location and land use, as well as investigating the relationship between these influences and the role that habit plays in transportation behavior.

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Key Words: travel behavior, Reddit, behavioral change, transportation, content analysis

MAKING TOLLING TRANSPARENT: ANALYZING PROCESSES USED TO ALLOCATE & DISTRIBUTE TOLL HIGHWAY REVENUE IN MULTIPLE STATES
Abstract ID: 656
Individual Paper Submission

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Transportation finance has become increasingly unreliable in recent years, due to the declining revenue available from the motor fuel tax, increasing auto efficiency, and political reluctance to raise taxes. Some states have relied on toll revenue and other user fees to overcome these revenue challenges. Despite growing interest in toll finance, there is little understanding of how independent local tolling agencies decide to raise and spend money, and how the governance institutions intersect with decisions over equitable spending—e.g. use of the money for public transit, or toll discounts. This study hypothesizes that different toll road governance models provide varying incentives to raise tolls and spend them on various purposes. This study catalogues 60 toll roads from 20 states, using state enabling legislation to classify toll roads by governance type (e.g. private, public-private-partnership, public corporation, independent regional/local special agency, independent state agency, state-managed, though there may be others). Roads are chosen based on their governance type, centerline miles, and rate of toll increase since 2007. This study examines meeting minutes, comprehensive annual financial reports and other primary sources to identify whether/how much tolls were increased/decreased, and for what purpose, identifying incentives for toll roads to spend money differently based on motivations like public or private status, geographic scope and level of government, among other motivating factors. This study also interviews staff members and elected officials from five toll road agencies, providing further details on why they made decisions to raise or lower tolls, how they intended to use the money, and their relationship to other state and local governments. In the end, this study makes findings related to how the governance structure of the toll road affected decisions over the social equity of revenue raising/spending, particularly on the use of revenue to support public transit and reduced tolls to disadvantaged populations.

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Key Words: Toll, Equity, Governance, Public/private partnerships

THE EFFECT OF DECREASING ACCESS TO A CAR: AN INTERNATIONAL COMPARISON OF THE US AND UK
Abstract ID: 658
Individual Paper Submission

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What happens to households when they lose access to an automobile or experience a decline in auto access? Our previous work focused on the economic impacts of losing a car, such as losing a job or working fewer hours. In this study, we extend the research to examine the effects of declining automobile access—either a total loss of automobile access or transitions from full auto access for each driver in the household to a situation in which one or more vehicles is shared among drivers.

Using original cross-sectional data collected from an online survey panel of 1,000 respondents each from the United States and the United Kingdom in 2020, our analysis focuses on planning-relevant effects of declining car access, including access to food, healthcare, recreational opportunities, childcare and child-serving travel, visits with friends and family, as well as the search for housing and employment. We examine how these differences play out by gender, by geography (suburban and urban areas), and by country (US and UK). We also examine the incidence of voluntary and involuntary decreases in car access, and examine how the effects of decreased car access differ across these two groups.

Our initial findings in the US context suggest that households who lose access to a car report substantial decreases in recreational activities, shopping trips, and visits with family and friends, and to a somewhat lesser extent, decreases in attending educational opportunities, visiting the doctor, chauffeuring children to events and activities, and searching for work. Losing access to a car negatively impacted the overall quality of life for a majority of respondents.

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Key Words: car access, quality of life, access to opportunities, well-being

EFFECT OF STREET NETWORK CONNECTIVITY ON TRAFFIC CONGESTION AND TRAFFIC SAFETY
Abstract ID: 669
Individual Paper Submission

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Over the last two decades, street network connectivity has gained substantial attention in urban planning circles as a critical environmental aspect to better achieve many community goals. Compared to suburban curvilinear street patterns, urban grid-like networks are thought to decrease trip distances and vehicle speeds, disperse traffic across the networks, and encourage walk, bike, and transit trips.

Despite advocacy for interconnected street networks, the literature on the effect of street connectivity on transportation outcomes is still intuitive and anecdotal. This study aims to empirically relate congestion levels and crash rates to measures of street connectivity in the Wasatch Front neighborhoods of Utah and suggest appropriate land development code provisions to foster street connectivity.

Our unit of analysis is a one-mile grid cell, for which all tested variables have been estimated. We employed propensity score matching to select 10 pairwise grid cell samples, in which the matched two grid cells have similar social and environmental characteristics but differ greatly in street connectivity. Following a literature review, this study chose four widely-used measures of street connectivity—*intersection density, percentage of 4-way intersections, link-node ratio*, and *block area*—to develop one composite street connectivity index, by applying principal component analysis. This was used to categorize grid cell networks as highly connected and highly disconnected.

This approach enabled proper comparisons of outcome variables in a non-randomized observational study by controlling for potential confounding influences. US Census Bureau data were used to compute confounding variables thought to affect the degree of traffic and road safety, including activity density, percentage commercial uses, percentage nonwhite population, and median household income. Propensity scores were estimated for each grid cell using these variables, and then a one-to-one match was accomplished in R statistical software.

As a result of a multiple traffic data sources review, a commercial travel data company, called Streetlight Data, was selected to provide average daily traffic volumes for all streets in each grid cell and peak- and non-peak-hours speed data for arterials and collectors in the examined grid cells. We acquired a five-year statewide crash dataset and calculated VMT weighted crash rates at three different severity levels—*total, injury,* and *fatal.* Using travel speed data, the congestion variable was estimated as the Travel Time Index (TTI) on arterials and collectors, referring to the ratio of the peak-period travel time compared to the free-flow travel time.

Finally, paired t-tests were conducted to identify whether there are measurable differences in traffic congestion and crash rates between the systematically matched neighborhoods (grid cells). Extensive research has established that cities and states cannot pave their way out of congestion by building more freeways and arterials or dispersing development in sprawl patterns. However, there is some evidence that interconnected street networks can reduce vehicle miles traveled and increase walking, biking, and transit use. These benefits should not be achieved at the expense of traffic safety or efficient traffic flow. This study will provide empirical evidence quantifying the benefits of interconnective streets, and better guide data-driven decision making for the increasing number of municipalities adopting street connectivity standards.

Parenthetically, the paper also reports on a survey of Utah localities to determine what connectivity requirements are currently in place. The number of localities with such requirements is growing, and they are taking various forms. Recommendations will be made regarding the form street connectivity standards should take.

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Key Words: street network, street connectivity, traffic congestion, traffic safety

DISPLACEMENTS AND TRANSIT EQUITY: LINKAGE BETWEEN GENTRIFICATION AND TRANSIT DESERTS

Abstract ID: 670
Individual Paper Submission

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Planners and policymakers are promoting public transit in metropolitan areas to ease issues, like traffic-related air pollution and the high cost of commuting for the poor, which improves the system-wide level of transit service, however, there is a rising concern about displacement and transit equity. Some research argued that there could be impacts between transit-related development on gentrification. In terms of this, they also provide possible solutions to these potential negative effects.

Although agencies have noticed this concern and proposed a variety of interventions designed, there lacks research involving whether there could be a spatial relationship between gentrification and the level of transit service. This study aims to fill in this research gap, building a spatial linkage between these, choosing the transit-accessible area of Washington Metropolitan as the study areas.

We first measure gentrification based on vulnerability, changes in demographics, and real estate factors. Employing the cluster analysis, we categorize gentrification process into three clusters (early-stage, mid-stage, and late-stage) and six sub-clusters (susceptible, early type1, early type2, dynamics, late, and continued loss) based on census tract data of our study area in 2000, 2010, and 2017 from American Community Survey (ACS).

Then, we calculate differences between transit supply and demand, as the index of transit deserts based on census tract data of 2010 and 2017 ACS and data from transportation agencies in related periods. If the differences are smaller than -1, it will be regarded as "transit deserts"; while if differences are larger than -1 and smaller than 0, it will be marked as "weak transit deserts". Similarly, if the index is ranging from 0 to 1, it will be marked as "weak transit oasis", and if it is greater than 1, it will be seen as "transit oasis". Additionally, we choose transit-depended population as a measure of transit demand and calculate transit supply based on seven criteria (bus and metro stops, frequency of bus and metro service, bus and metro routes, pedestrians, bike lanes, low-speed roads, and intersections).

Results include two stages: First, we compare the gentrification distribution and changes in transit-depended population distribution. Results indicate that where the gentrification happens and processed, there could be more likely with transit-depended population loss generally. Specifically, we find that there could be a significant loss of transit-dependent population in areas surrounding Capitol Hill and Arlington National Cemetery, where the cluster of gentrifications is dynamic. It means there are gentrifications in these areas while the vulnerable population is still in these areas.

Next, we compare the gentrification distribution and changes in the index of transit deserts distribution. Results indicate that there are overlaps between gentrification and transit deserts in our study area overall. Detailly, the early stage of gentrification mostly happens in Arlington and Alexandria, where the transit-depended population is well served, and westside of Fairfax County where the transit-depended population is relatively unserved. The middle stage gentrification occurs in the center and east side of D.C., where the transit-depended population is served. The late stage of gentrification occurs in the westside of D.C., where the demand for transit is met.

Overall, this study, as a pioneer study, explores the linkages between gentrification and transit deserts. It compares the distributions between gentrification status and changes in transit demand, and index of transit deserts separately. Given the considerable expense of transport infrastructure, it is of great interest for cities to define the linkages between gentrification and public transit. Our research may contribute for decision-makers and transport planners to wisely allocate budgets, achieving the maximum benefits of public transit.

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Key Words: gentrification, transit deserts, spatial analysis

HEALTHY FOR WHOM? EQUITY IN THE SPATIAL DISTRIBUTION OF CYCLING RISKS
Abstract ID: 680
Individual Paper Submission

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Central Planning Issue

Cities are increasingly investing in cycling infrastructure as a way to promote physical activity and associated health benefits. While these benefits are widely recognized, cycling is also associated with health risks, including exposure to traffic-related air pollutants and the potential for injury (de Nazelle et al., 2011). Previous research has analyzed the tradeoffs between these competing health outcomes, generally suggesting that the benefits of cycling outweigh its risks (Gu et al., 2017; Mueller et al., 2018; Tainio et al., 2016). This research, however, has been limited in its treatment of social equity, estimating health impacts at the population level (e.g., for an entire city) rather than accounting for socio-spatial variations in risk that may arise from differential bike lane access, traffic volumes, and other environmental characteristics. Given that low-income and minority populations in the U.S. tend to be exposed to conditions that make them particularly vulnerable to the risks of cycling near motor vehicle traffic—such as poor bike lane access and close proximity to major roadways—these spatial variations are highly salient for social equity.

Research Questions

In this analysis, we examine the health risks of cycling through the lens of social equity by asking the following research questions:

1. How does exposure to air pollution and injury risk vary across sociodemographic groups?
2. How does this socio-spatial distribution of risk affect the health tradeoffs of cycling?

Methods

We address these questions using data from Los Angeles County, CA, which has a relatively high bicycle fatality rate and is consistently in non-attainment status for traffic-related pollutants such as particulate matter ($PM_{2.5}$). For the first question, we use fine-grained spatial data on $PM_{2.5}$ levels, bicycle crashes, and bicycle volumes to create disaggregate measures of pollution exposure and injury risk at the block

group level. We then use descriptive statistics and adjusted regression models to assess how these measures vary across neighborhoods and are associated with area- and individual-level sociodemographic characteristics derived from the 2014-2018 American Community Survey (ACS) and the 2017 National Household Travel Survey (NHTS) (including California's add-on sample).

For the second question, we incorporate travel behavior data from the ACS and NHTS to estimate the number, length, and location of cycling trips for geographies and households of varying sociodemographic composition, then use these estimates to assess the potential physical activity benefits derived from cycling in locations throughout the county. To compare these benefits to the risks developed under the previous objective, we place all three health outcomes in a common metric (disability adjusted life years) and calculate a net value indicating the direction/magnitude of health impacts for block groups across Los Angeles County. By correlating this value with underlying sociodemographic characteristics using spatial regression models, we assess whether the health tradeoffs of cycling differ across population groups and neighborhoods.

Findings

Through these approaches, we critically examine universal statements about the net health benefits of cycling and determine whether these statements are valid for marginalized groups. Although the analysis is in progress, we expect to find that (1) low-income and minority populations and neighborhoods are disproportionately exposed to traffic-related air pollution and injury risk, and (2) these disproportionate exposures result in a reduced net health benefit (or a net health risk) of cycling for these populations.

Planning Implications

This analysis leverages emerging data to characterize spatial variations in the health risks of cycling and to examine the implications of these variations for social equity. The results will address a key limitation of population-level assessments, assess whether the benefits of cycling outweigh its risks for diverse populations, and contribute to more equitable planning and public health practices.

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Key Words: cycling, health, equity, air pollution, injury

THE ROLE OF RIDE-HAILING SERVICES IN YOUNG ADULTS' TRAVEL BEHAVIOR: THE MODERATING EFFECT OF URBAN FORM AND THE MEDIATING EFFECT OF CAR OWNERSHIP
Abstract ID: 684
Individual Paper Submission

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Emerging transportation services are rapidly changing the ways that people travel, through expanding the range of transportation alternatives. Ride-hailing (RH) services, such as those offered by Uber and Lyft in the U.S., are among the most controversial and fastest-growing shared transportation services. Studies show that this mode of transportation is used predominately by young people (Alemi et al., 2019). Researchers also found that Millennials and Generation Z are moving into the central city and are more likely to ride public transit to reduce transportation costs (Lee et al., 2019; McDonald, 2015). With the introduction of ride-hailing services, young people now have greater freedom to forgo car ownership (Delbosc and Currie, 2013). Further, RH has the potential to complement transit use by offering a great first and last mile option and by providing transit riders with the "confidence in getting a ride back" (Sadowsky and Nelson, 2017). However, there also is evidence that RH is replacing many transit trips, especially by bus, during off-peak hours, and by high-income groups.

Therefore, RH services have the potential for both complement and substitute effects on public transit, and empirical evidence presented to date is mixed. The current study notes that the neighborhood context and urban form would moderate these impacts of RH services on transit use. We hypothesize that the potential of RH services to replace car ownership can be realized more easily in a dense, compact area where public amenities, employment, and public transit services are concentrated. However, RH's role in lowering car ownership would be relatively small in low-density suburban areas, while RH might provide a good first mile option for long rail transit commutes.

We investigate the complex relationships between car ownership, transit ridership, and the use of RH services by young people and the impact of ride-hailing services on the car ownership rates of young people and their public transit ridership. This paper also examines the effects of urban form on the relationship between young people's car ownership, ride-hailing, and transit ridership.

We, using path analysis and the 2017 National Household Travel Survey (NHTS) data, investigate the complex relationships between car ownership, frequency of RH use, and transit ridership. Noting that the role of RH services varies across different types of neighborhoods, the moderating effect of urban form is also tested in the path model. Path analysis is carried out as a hierarchical (sequential) multiple regression analysis, in which equations are simultaneously solved to determine estimates of parameters. It is an extension of multiple regression analysis in the sense that it allows the testing of hypotheses that decompose the total effect of a variable into direct effects (i.e., non-mediated effects) and indirect effects (i.e., mediated effects) on the measure of interest. We examine the impacts of RH on transit use that are mediated through car ownership. Path analysis can also test the moderating effect of a variable on a relationship between two variables. Using path analysis, we test how urban form moderates the substitute or complement effect of RH on transit use. We mainly used the 2017 NHTS data to prepare several endogenous, explanatory, moderator, and latent variables.

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Key Words: Ride-hailing services, Travel behavior, Transit ridership, Young adults, Urban form

DO RENTERS SAVE MONEY BY LIVING IN TRANSIT-ORIENTED DEVELOPMENTS (TODS)? AN ANALYSIS OF THE IMPACTS OF RAIL TRANSIT ON RENT AND TRANSPORTATION EXPENDITURES IN EIGHT CALIFORNIA METROPOLITAN AREAS

Abstract ID: 710
Individual Paper Submission

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Prior studies show that transit-oriented developments (TODs) increase property values and raise property tax revenue for local governments (Duncan, 2011). Property owners reap economic benefit from TODs and public officials use it as evidence to justify the high cost of rail transit (Mathur, 2020). However, renters, who rely on transit more than homeowners, may have to pay rent premium to live in TODs. The location affordability index at the neighborhood level suggests that renters could benefit from TOD by saving money on transportation costs (Renne, Tolford, Hmidi, & Ewing, 2016). Recent studies at the individual household level, however, found little evidence that living in TODs reduces transportation expenditure (Smart & Klein, 2018).

This study compares the rent premium and transportation cost savings that are associated with rail transit in eight Californian metropolitan areas. The study relies on two major data sources: rent data that were scraped from Craigslist.com (at the individual unit level) and the 2010-12 California Household Travel Survey (at the individual household level). I also use Census data to construct a TOD index and use the index to categorize the 700 rail-transit station areas into three groups: urban TOD, suburban TOD, and non-TOD. I differentiate the three levels of TOD when I compare the potential impacts of TOD on rent and transportation expenditures.

I estimate propensity score to construct treatment and control groups to address the potential self-selection bias. To evaluate potential rent premium in TODs, I compare rental units in TODs (treatment group) with similar rental units outside of TODs (control group). To estimate the potential transportation cost savings in TODs, I compare the travel behavior of renters living in TODs (treatment group) and those of the renters living outside of TODs (control group). I calculate transportation cost savings by comparing vehicle ownership, vehicle miles traveled, transit use, and travel time between tenant households in the treatment and control groups.

This study contributes to the literature in several ways. First, previous studies of the property value impact of rail transit focus on the housing sales prices because housing transaction data are readily available and easy to obtain. Rental data, however, are not publically available for researchers. This study uses non-traditional rental data that are scraped from Craigslist. Second, most existing studies of location efficiency/affordability rely on the indexes that are estimated at aggregated neighborhood levels and the accuracy of these indexes are open to question (Ganning, 2017). This study evaluates the impact of rail transit on location affordability at the individual tenant household level, which allows us to understand the heterogeneous impacts of TOD on tenant households of different demographic groups. In addition, this study recognizes that the built environment of rail-transit stations varies widely and not all of them were designed based on TOD principles. The study estimates whether and how different station areas have varied effects on rent and transportation cost saving. The findings from this study will inform transportation planning and practice that aim to promote more equitable TODs.

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Key Words: transit oriented development (TOD), rent, local affordability, travel behavior, equitable TOD

PERCEPTIONS OF NEIGHBORHOOD CHANGE IN A LATINX TRANSIT CORRIDOR
Abstract ID: 716
Individual Paper Submission

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Sustainable development plans increasingly call for compact, accessible, and walkable neighborhood design along transit corridors in order to reduce vehicle travel and associated greenhouse gas emissions. The Southern California Association of Governments' long-range plan, for instance, directs nearly 50% of housing and employment growth between 2010 and 2040 into walkable and compact neighborhoods within a one-half mile walking distance from a well-serviced transit stop. Although transit investments and surrounding development could spark positive neighborhood transformation of near-station areas, "green" investments such as light rail transit could increase housing and property costs in transit-oriented development (TOD) areas and spur residential and commercial displacement and gentrification raising equity concerns for disadvantaged residents (Rigolon & Németh, 2018).

Gentrification can be understood as one type of neighborhood change that involves the socioeconomic upgrading of previously low-income neighborhoods. Transit-induced gentrification generally refers to the physical displacement of low-income residents near new transit investments (who are most likely to benefit from increased transit access) (Dawkins & Moeckel, 2016). Methodological shortcomings, however, limit the ability of existing studies to provide conclusive evidence that transit investments induce gentrification and displacement; in fact, factors such as existing local dynamics and policies could play a larger role in spurring gentrification than TOD (Padeiro, Louro, & Marques da Costa, 2019). In addition, existing quantitative gentrification studies tend to rely on census tract or parcel indicators to identify neighborhood change, narrowly focus on physical displacement (when residents are forced to relocate out of their neighborhood), and have largely neglected social and psychological dimensions of place disruption and gentrification displacement (Rayle, 2015). Regardless of its cause, gentrification and physical displacement can introduce community and social stressors and associated health inequalities in emergency department visits, mental health, and birth outcomes (Cole, Lamarca, Connolly, & Anguelovski, 2017).

The UCI Neighborhood Change Survey (UCI-NCS) addressed these existing research limitations by surveying over 300 adult residents of a largely Latinx, low-income transit corridor in Santa Ana, California in August-October 2019 to better understand resident perceptions (negative and positive) of neighborhood change and associated investments and development. This study focused on residential and mixed-use areas along the transit corridor in central Santa Ana extending from the Santa Ana Regional Transportation Center (SARTC) regional train station westward following the planned OC Streetcar route to its planned multi-modal transit hub terminus. The OC Streetcar, which broke ground in November 2018, will connect with 18 bus lines along its 4.15-mile length when operations begin in 2022. Substantial transportation and land use planning and transit-supportive zoning along the study corridor have resulted in visible changes, infrastructure improvements, new businesses, and several major development projects and raised concerns about housing affordability, displacement, and gentrification.

Results detail how resident perceptions of the meaning of investments and development were related to resident sense of place attachment and neighborhood satisfaction and varied by socioeconomic

characteristics and neighborhood location along the corridor. Residents were most concerned that development would result in parking problems, crowding, and increased housing costs. In fact, over 80% of respondents indicated housing costs were a major concern and 86% reported a rent increase in the last five years. Residents had the highest level of satisfaction regarding the availability and quality of grocery stores and highway and public transportation access. Interestingly, residents of the Lacy neighborhood, which has experienced substantial investments and affordable housing development, shared these concerns but also expressed the highest sense of place attachment. Full results will provide scholars and planning agencies with TOD-specific insights into neighborhood change and gentrification processes that can help enhance inclusionary planning practices and understand and respond to community concerns of disadvantaged communities along transit corridors.

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Key Words: transit-oriented development (TOD), neighborhood change, gentrification, resident perceptions, Latinx

USING STATE POLICY TO INFLUENCE HOUSING AND TRANSPORTATION LINKAGES: THE CASE OF CALIFORNIA
Abstract ID: 725
Individual Paper Submission

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A number of US states have begun to confront the relationship between housing supply and transportation sustainability. In the state of California, the largest metropolitan areas are marked by an undersupply of housing, decreasing housing affordability, and a growing reliance on the automobile to connect disparate activity locations. The California state legislature has responded with a number of bills to attempt to influence local and regional planning for housing and transportation.

We carried out an analytical study of California state efforts including legislation to influence parking standards at the local level; to require up-zoning near transit stations; to influence regional housing and transportation planning goals; and to change environmental review to focus on vehicle miles traveled instead of road traffic. Given the need to produce more housing, at affordable cost and in locations with access to jobs and services, how can state efforts lead to housing development, including affordable housing, that is located where it minimizes private VMT without stripping households of accessibility and opportunities?

We mined empirical studies that address the impacts of land use and housing policies and plans, and transport infrastructure and services, on housing development, land use patterns and urban form in ways

that are thought to affect housing supply and location along with travel patterns. We organized our analysis in three themes: the effects of state level housing policies; the effects of state level transport policies and plans; and barriers and issues in the local and regional implementation of state policies on housing and transport.

Our first theme is the relationship of state housing policies to housing supply and affordability, and consequent travel patterns. While there is a well-established relationship between higher levels of land use regulation and reduced housing supply, more recent questions have emerged about the impact of upzoning and other regulatory shifts on local supply and affordability. We looked at this emerging literature in detail to provide a better understanding of the benefits and costs of land use interventions including transit-oriented development programs and local zoning ordinances such as parking requirements, height limitations, and setback rules.

Our second theme is understanding how transport policies and plans are likely to influence both housing development and travel patterns. This theme requires a specific focus on low-income households and gentrification processes. We discuss road investments, transit investments and services, and pedestrian/cycle infrastructure, with a brief review of some of the new and prospective technological developments in transport including ride-hailing, scooter and bike sharing.

Our third and final theme is the implementation of state level policies at the regional and local scale. State-level policies face significant barriers and constraints when the intent of the policy meets the reality of local politics, market dynamics, and conflicting regulatory guidance. Understanding the local barriers and issues that influence the implementation of state or regional housing and transportation plans can point to ways to improve those interventions to ensure intended outcomes. For example, state requirements for housing provision within priority development areas (PDAs) has in some cases not resulted in any housing supply increase, due primarily to market conditions rather than NIMBY concerns.

We end by drawing analytical conclusions about the likely efficacy of existing and prospective state policies and interventions. In so doing we evaluate the dual policy goals of (a) reducing auto use and GHGs and (b) increasing housing supply and affordability in the state's largest metropolitan areas. We provide and discuss a list of state policies that hold promise, along with policies and practices that are less likely to be helpful depending on spatial, market and institutional context.

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Key Words: housing policy, transportation policy, equity, housing affordability, California

ELASTICITIES FOR SHARING A RIDE IN TNC TRIPS IN CHICAGO
Abstract ID: 731
Individual Paper Submission

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App-based ridesourcing services provided by Transportation Network Companies (TNCs) such as Uber and Lyft are flooding urban roadways. TNC apps allow customers to choose whether they would like to share a ride with others when placing an order, usually resulting in a reduction in the fare. If a rider authorizes the app to share, the system will automatedly match him/her with other riders depending on the route, although it does not guarantee a shared ride due to the variation in demand. From a social equity perspective, sharing plays a vital role in improving mobility for households of lower socioeconomic status where price might be an issue; from an environmental perspective, sharing can reduce emissions associated with air pollution and greenhouse gases. Nevertheless, shared rides comprised only a small proportion of total ridesourcing trips. Therefore, increasing sharing could be one of the objectives of ridesourcing policies.

Despite the importance of sharing TNC trips, little is known about the patterns and mechanisms of the sharing behavior of ridesourcing users. The primary research question addressed in this paper is how the price and travel times of ridesourcing determines people's choice to share a ride with strangers. We frame our study into a cost elasticity analysis. Money and travel times are the two primary costs of transportation, and travelers have varying price elasticities and time elasticities of demand. Our study, based on TNC trip data in Chicago, comprises two steps. First, we use logistic regression and Heckman's selection model to explore the determinant of riders' choices. Fares and travel times by trip are key variables in predicting the odds of sharing authorization. The coefficients of these two variables are the price elasticity and time elasticity, respectively. Indicators of demographic characteristics, socioeconomic status, the built environment of the trip origins and destinations are included as control variables. Time of day, day of week, and types of trips are also taken into account. Second, we investigate the determinants that lead to an actual shared trip, as customers may select this option but end up without a shared ride. This outcome is determined by external factors, mostly the amount of travel demand that can be matched through the routing algorithm used by the system.

The findings of this analysis specify the elasticities for price and travel times for the ride-sharing decision in TNC trips across Chicago for different circumstances and types of trips. This study contributes to a better understanding of sharing behavior when using TNC services. The results shed light on the planning strategies and regulatory policies that promote sharing behaviors to address concerns raised by the oversupply of TNC vehicles, such as traffic congestion, disruption of public transit, and environmental pollution.

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Key Words: Ridesourcing, rideshare, elasticity

THE EFFECT OF PROVO-OREM BRT (BUS RAPID TRANSIT) ON RIDERSHIP, TRAFFIC VOLUME, TRIP GENERATION, AND LAND-USE CHANGE: BEFORE AND AFTER STUDY

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Today, the US population was growing continuously, and vehicle miles traveled (VMT) were also rapidly growing. Therefore, the importance of public transportation was emerging than before (NHTSA, 2017). Among many types of public transportation, Bus Rapid Transit (BRT) is receiving attention in terms of efficiency. Because it is available to carry many people at the same time and it has more reliability than the conventional bus system.

In Utah County, because of these positive factors of BRT, they operated Utah Valley Express (UVX) line in Central Utah County in 2018. This line operated by Utah Transit Authority (UTA) and runs between southwest Orem to south-central Provo by way of Utah Valley University (UVU) and Brigham Young University (BYU).

In previous research about the impact of BRT, Nelson et al. (2013) found that Eugene-Springfield's BRT effected on job growth within 0.25 miles of BRT station while the metropolitan area lost jobs between 2004 and 2010. Also, Cervero and Kang (2011) found that BRT in Seoul affected a 10% increase in land price premiums and a 25% increase in retail in 300m buffered area of BRT stops. Lee and Miller (2018) also found that BRT in Columbus increased residents' accessibility to jobs and healthcare and decreased delay. Additionally, Ewing et al. (2014) researched the light-rail's impact on traffic in the travel corridor. From this research, he found light rail was strongly correlated with saving energy consumption, air pollution, and parking costs through increasing ridership and decreasing vehicle volume.

However, in previous papers, there was a limited comprehensive understanding of the quantitative impact of BRT on traffic and land-use change. Especially, there was a lack of understanding of how BRT impacts on public transit ridership, traffic volume, land-use, and trip generation. Regarding the efficiency and importance of BRT, this synthetical approach is important to grasp an understanding of energy consumption and to make sustainable urban planning.

Therefore, in this study, to an understanding of the quantitative effects of BRT, we studied public transit ridership, traffic volume, land-use change and trip generation change in the 0.5miles buffered area of UVX from 2013 to 2019 through time series analysis. In particular, we used the quasi-experimental research design approach to estimate the causal impact of an intervention on the target population without random assignment.

As a result, total bus ridership increased by 182% compared to before the opening of BRT. And the other buses' ridership except for BRT also increased by 21%. In the traffic volume, it had a sharply rising pattern before the opening BRT. However, the traffic volume after the opening of the BRT was decreased. In the Land use change, vacant areas decreased and commercial, residential and public areas increased since the opening of the BRT. Especially, in the change of trip generation based on land-use change, the total number of trips increased by 22% from 2016 to 2019. In detail, total trips of the commercial area increased by 24% and residential areas increased by 10%. This study shows that while the metropolitan area's travel demand was increased because of the increase of commercial and residential areas, but the traffic volume was decreased because of the increasing of the BRT and other buses' ridership.

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Key Words: Bus Rapid Transit, Trip Generation, Land Use, Public Transit, Accessibility

ELIMINATING BARRIERS TO NIGHTTIME ACTIVITY PARTICIPATION: THE CASE OF ON-DEMAND TRANSIT IN BELLEVILLE, CANADA
Abstract ID: 752
Individual Paper Submission

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Many towns and cities are struggling to keep public transit running in low demand areas or periods of the day, due to the high costs of operation in relation to fare revenues. As a result, recent evidence suggests that poor transportation provision may be responsible for reduced satisfaction and participation in essential daily activities such as employment, medical appointments, and leisure (Farber et al., 2018).

Emerging mobility technologies, such as online request systems and ride-hailing mobile applications, may present themselves as a solution as they give public transit agencies new opportunities to improve the transit management system and deliver on-demand transit services (National Academies of Sciences, Engineering, and Medicine, 2016). Riders can book a trip by calling or using mobile apps only when they need, so that the cost of the transit operators can be lower and the efficiency of the transit network can be maximized.

Several studies have shown that on-demand transit can stimulate public transit ridership and improve transit users' satisfaction levels (Chebbi and Chaouachi, 2015; Zhao et al., 2018). For example, one report showed that after introducing on-demand transit service, the nighttime bus ridership had increased 300% in Belleville, Ontario, albeit starting with a small base ridership (Sanaullah et al., 2019). However, most existing studies of on-demand transit have focussed on the operational and service-level characteristics of these systems, we know very little about the user profile and whether or not the on-demand transit has eliminated mobility barriers resulting in net gains in activity participation.

This study intends to bridge the research gap by investigating the nighttime activity participation of on-demand transit service in Belleville, Canada. In September 2018, the transit agency of City of Belleville, Ontario started offering an on-demand transit service for users. This service enables passengers to hail and schedule transit trips on the city's nighttime bus using a mobile application or website.

This study examines how the travel experience of on-demand transit relates to changes in activity participation at night. The data comes from a survey that collected information of 263 on-demand transit users, including their travel behaviour, perceptions in service quality, perceived impacts on activity participation, and a detailed assessment of satisfaction and broader impacts on wellbeing. From the survey, we find that most of the respondents reported increased activity participation after the launch of on-demand transit service. We then use an ordered logistic model to see how wait time, in-vehicle time, and other assessment of on-demand transit service (such as users' satisfaction of reliability, flexibility) influence the level of users' activity participation. A latent class model is subsequently applied to divide the respondents into 3 groups according to their socio-economic status, such as income, educational level, and employment. This model will show which group is most influenced by the on-demand service in terms of activity participation. The results will show how does on-demand transit service eliminate the travel barrier by increasing nighttime activity participation, and if the service can also provide additional travel choices for special/disadvantaged groups.

The findings of the study will reveal the social value of on-demand transit services, and give recommendations to transport decision-makers in Belleville and other municipalities across North America. The finding will also provide a better understanding of the impacts of emerging transportation technologies on residents' activity participation and quality of life. It will also demonstrate how public transit can provide affordable and efficient services for marginalized groups living in the fringe of the city.

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Key Words: On-demand transit, Ride-hailing, Emerging mobility, Activity participation , ODT

ACTIVITY SPACE, ENVIRONMENTAL EXPOSURE, AND SUBJECTIVE WELL-BEING: A MULTICITY MOBILE HEALTH STUDY
Abstract ID: 756
Individual Paper Submission

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The study of subjective well-being in urban planning and geography offers new evidence of how urban design can promote mental health. Previous studies have shown potential impacts of environmental exposure on subjective well-being, however, the relationship between subjective well-being and activity space is understudied, especially in the North American context (Hankey & Marshall, 2017; Glasgow et al., 2019). Additionally, these studies often heavily rely on small sample sizes and short tracking periods (Perchoux et al., 2019; Smith et al. 2019). They also provide very little evidence on how these relationships vary across jurisdictions that have different built environments and urban forms.

The purpose of this study is to quantify the impacts of activity space and exposure to nature on monetary mood and overall subjective well-being. Our study addresses gaps in the existing literature by using data from three U.S. metropolitan areas with a long tracking period and large sample size. We conducted two smartphone-app surveys in three metropolitan areas in Virginia, District of Columbia, and Minnesota from Fall 2016 to Spring 2018 (n = 16,863 trips and 601 people). We used the Experience Sampling Method and GPS tracking to track travelers' movement and subjective well-being over the course of one to two weeks. We tabulated route-based activity space, green space, and blue space and quantify their impacts on momentary and long-term subjective well-being. Our multilevel models show that the size of activity space and exposure to green and blue space are positively correlated with positive short-term

subjective well-being but not long-term subjective well-being. Active travelers (e.g., cyclists and pedestrians) were more likely to experience positive affect after travel.

Our study adds further evidence to the relationship between activity space, environmental exposure, and momentary subjective well-being. The findings inform practitioners on planning for healthy cities by providing public open space to induce well-being, especially for sustainable mode users such as pedestrians and cyclists. Future studies should focus on route-based exposure in addition to place-based exposure and explore the relationship between environmental factors and long-term subjective well-being.

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Key Words: travel behavior, activity space, subjective well-being, real-time mobility, mHealth

HOW TO CAPTURE MORE DAILY TRIPS INSIDE *N*-MINUTE NEIGHBORHOODS? A MACHINE-LEARNING ASSESSMENT ON THE THRESHOLD EFFECTS OF BUILT ENVIRONMENT ON TRAVEL IN BEIJING
Abstract ID: 767
Individual Paper Submission

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Abstract: Planning n-minute neighborhoods have received heat debates internationally, like in the cities of Portland, Shanghai, Melbourne, Ottawa and Paris, for the sake of building accessible, healthy, vibrant, and resilient neighborhoods. Here n could be 10,15 or 20 minutes, representing a desired walking or biking distance from home to surrounding daily amenities. While an increasing number of built environment guidelines for facilitating the n-minute neighborhoods has been issued, few studies have offered a quantitative assessment on such guidelines. This study thus first reviewed the measurable, normative goals of building n-minute neighborhoods across the world, including the intensification and mixed-use development in the Western countries, the concept of "life circle" raised in Japan, and the danwei community root in Chinese cities. A successful n-minute neighborhood should capture a certain high level of residents' daily trips within a pedestrian- or cycling- scale circle, as well as encourage more walking and cycling when traveling outside the circle. This raises two research questions in this study: 1) which levels of land use features can facilitate more internal capture of daily nonwork trips? 2) which levels of land use contexts are associated with more external trips by non-motorized modes?

Using data from a household activity diary survey with 588 individuals in 26 communities of Beijing, China, we adopted a machine-learning approach by applying a gradient boosting decision trees (GBDT) algorithm to investigate the nonlinear and threshold effects of built environment on the internal capture rate of commuting and nonwork trips, as well as on the mode choice of external trips. We compared the results in both 15-minute pedestrian and cycling circles of neighborhoods. Modeling findings suggest that

built environment plays a more important role in predicting the internal capture rate of nonwork trips in the 15-minute pedestrian circle than the cycling circle. At both scales, the density of business-service facilities and the public transit access are the most important factors affecting the internal capture rate, while the measures of street connectivity, transit access and land use diversity rank top in predicting the mode choice of external trips. Furthermore, the partial dependent plots present apparent threshold effects of most built environment variables. For increasing the internal capture rate, the effective ranges of the densities of business-service facilities and intersections are within certain threshold levels. These thresholds suggest the appropriate levels of land use mixture and design for capturing more daily trips inside the n-minute neighborhoods. In summary, this study offers a novel quantitative assessment on how to adjust the built environment for planning a n-minute neighborhood, in order to encourage more internal capture of daily trips and nonmotor external trips. It also provides meaningful policy implications for life-circle planning recently advocated in Chinese cities.

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Key Words: 15-minute neighborhoods, Built environment, Internal capture rate, Walking and cycling, Nonlinear effect

RIDE HAILING IN DEVELOPING COUNTRIES: USE AND EFFECTS
Abstract ID: 782
Individual Paper Submission

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Since the introduction of the ride hailing services in the 2010s, the adoption and popularity of these services have grown rapidly in both developed and developing countries (Alemi et al., 2018; Rayle et al., 2016). As a result, empirical research on ride hailing services has also grown (Tirachini, 2019). Most of this research focuses on developed countries and there lies a significant gap in the literature regarding even basic insights on adoption, user travel patterns, and behavioral impacts of ride hailing in the developing world. This paper aims to address that gap.

While Uber has the highest global reach among the ride hailing companies, and China's Didi is the largest, locally based ride hailing companies have emerged in many other countries. These local competitors to international giants, like Uber, incorporate innovation and local flavor in serving context-specific markets. The on-demand app-based motorbike sharing in crowded and congested cities of Indonesia, Malaysia, and Bangladesh are some examples of such locally based ride hailing services (Vacano, 2017). The effects of these often nascent and culturally-specific rail hail services may well prove greater in the developing world than in the developed one. These services have the potential to offer people who cannot afford cars faster and more reliable transportation services than conventional travel modes by allowing them to purchase their auto (or motorcycle) mobility one trip at a time.

To begin to examine this issue, this paper will explore trip and user characteristics of motorbike sharing by analyzing user and ridership data from Pathao, an on-demand app-based motorbike sharing company

based in Bangladesh. By analyzing three months of data regarding traveler identification number (unique to each user), user characteristics (age, gender, etc.), user billing zip code/ area, trip origin and destination, time of day (peak/ off-peak hour) and day of week (weekday/weekend) when trip is undertaken, trip price, and distance, we will investigate how this particular type of ride hailing service is used in Dhaka, Bangladesh. Our analysis will reveal who is using these services, how often, and where, and will shed light on whether these ride hail services are benefitting certain segments of the population more than the others. In addition, by relating origin-destination data with the area-wide income data, the analysis will provide a baseline understanding about the trend of use of the services across higher and lower income areas of the city.

The findings of this research will offer valuable insight into the adoption of culturally-specific ride hailing services in a major city of the global south. We expect the research would be helpful to both planning scholars and practitioners concerned with the equity of new mobility services.

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Key Words: ridehailing, developing country, global south, ridesharing, shared mobility

TRANSPORTATION MISMATCH: PUBLIC PERCEPTION, DESIRES, AND REALITY
Abstract ID: 783
Individual Paper Submission

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Transportation professionals make myriad decisions about transportation policies, plans, and investments every day. These decisions are shaped by many factors including education, experience, public opinion, and politics. Previous research has documented transportation planners' understanding of basic realities, demonstrating how they systematically over-estimate the use of car-alternative modes and under-estimate driving (Ralph & Delbosc, 2017). In this research, we extend this approach to examine the mismatch between perceptions, desires, and realities the public holds across a range of transportation issues. This work draws on research from psychology that demonstrates Americans' desire for more equal distribution of wealth by comparing how the public perceives the US wealth gap to what they think it ought to be and to what it actually is (Norton & Ariely, 2011).

We examine mismatches and alignments between public perception, current reality, and desired futures across six primary dimensions of transportation planning: the transportation planning process, travel behavior, safety, transportation finance, road and sidewalk space allocations, and the environment. Specifically, we ask: How do people's perceptions of transportation issues compare to reality? How do these compare to what individuals want out of the transportation system? And how do perceptions vary based on an individual's own characteristics?

We assess these questions through an online survey of American adults. Survey respondents will be recruited through Prolific, an online survey panel with a large pool of American adults. Prolific allows for rapid data collection of a large sample; stratification ensures that the research sample will be representative of the US population by age, race, and gender. To compare public perceptions to reality, we draw on data from a variety of sources including the General Social Survey, the Consumer Expenditure Survey, the American Time Use Survey, the National Household Travel Survey, and a nationwide survey on transportation taxes (Nixon & Agrawal, 2019).

Our findings offer a new perspective on a range of important transportation issues. By identifying domains in which perceptions about the state of the world diverge most sharply from reality, our work helps identify opportunities for informational campaigns. By identifying topics where perceptions match reality, but where there is widespread agreement that the future ought to look different, our work identifies areas ripe for advocacy and change.

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Key Words: Transportation policy, environment, travel behavior, transportation finance, safety

FROM SPATIAL MISMATCH TO A TRANSPORTATION MISMATCH? ANALYZING INTERRACIAL PATTERNS OF TRAVEL MODES USING THE NATIONAL TRAVEL HOUSEHOLD SURVEYS (NHTS)
Abstract ID: 831
Individual Paper Submission

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The spatial mismatch is usually discussed from an economic and geographic perspective, but its implications for transportation have not been the focus of debates. While spatial mismatch is not a recent concept, it still carries validity in a US context. The purpose of this paper is to combine spatial mismatch theory and transportation mode choice analysis among different racial groups. While travel behavior of racial groups in the United States has been usually discussed under the immigration framework, this study will employ a horizontal approach in discussing interracial differences in travel behavior. The central research question this paper attempts to tackle is: What is the relationship between spatial mismatch and transportation mode choice? What this research question entails is a debate if a spatial mismatch creates a transportation mismatch for all racial groups or if an uneven development is present. For this study, the National Travel Household Survey 2017 (NHTS) was used due to its provision of certain socio-demographic variables and detailed accounts of their travel mode choice and trip times.

Three different methods will be used in this paper to conduct this study. First, an OLS regression with the distance to work in miles as the dependent variable and the different racial groups, socio-demographic characteristics, and geographic variables as independent variables will be performed. The purpose of this regression will be to identify factors influencing the distance to the workplace. The distance to the workplace can be a vital factor in identifying spatial mismatches. T However, distance to work has to be analyzed in conjunction with travel times and mode to work, as different modes have varying travel times. The second method used in this article will be a binary logit regression. In this binary logit regression, the

dependent variable is the use of public transportation (for any trip), while the independent variables consist of several socio-demographic and trip-related variables. The main goal of this binary logit model is to identify the effect of being born in the United States on the choice of public transportation. Interracial differences regarding these effects will be conducted and analyzed. This binary logit regression model will improve the analysis of the probabilities of different racial groups to use specific modes of travel. The third method used in this analysis will be a multinomial logistic regression. The dependent variable in this model will be the mode of travel to work, and the independent variables will consist of different socio-demographic, geographic, and trip-related data. The goal of the multinomial logit analysis is to analyze travel patterns of different racial groups.

This paper shows that spatial mismatches still exist, but additionally, trip travel time is at least an important barrier for different racial groups to reach their workplace. Further, slow public busses and not walkable neighborhoods are only a few of several obstacles.

This paper also shows that travel patterns vary among different racial groups. The spatial mismatch can be seen clearly with African American/Black people, and to a lesser extent, with American Indians and Asians. However, transportation mismatch cannot be ignored and should be tackled from a policy perspective. The long travel time for African American/Black/American Indian/Asians can be an indicator that these groups live in areas with insufficient and slow public transportation networks. As these groups are mostly using public transportation, it should be a necessity to provide quicker bus routes and less waiting times.

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Key Words: Spatial Mismatch, Transportation Assimilation, Travel Behavior, Race and Transportation, Transportation Equity

THE EFFECTS OF ACTIVE TRAVEL AND PERCEIVED BUILT ENVIRONMENT ON SELF-ASSESSED HEALTH STATUS
Abstract ID: 838
Individual Paper Submission

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Active travel such as walking and bicycling positively influences public health. This positive influence is becoming more prominent because active travel affordable and sustainable (Buehler, Pucher, & Bauman, 2020). Many studies have shown that active travel decisions are associated with socioeconomic factors and built environment characteristics (Reid Ewing & Cervero, 2010). In the transportation literature, the built environment has been often operationalized by density, diversity, and design (Cervero & Kockelman, 1997). In general, the definition and operation of density and diversity variables rely on objective data such as population density and land-use mix, while design related ones are based on human

perceptions (R. Ewing & Handy, 2009). Thus, residents in the same neighborhood can perceive their environment in different ways, and make diverse decisions on active travel. Indeed, perceived and objective measures of built environment have divergent effects on physical activities (Hoehner, Ramirez, Elliott, Handy, & Brownson, 2005). Consequently, individuals' perceptions regarding their neighborhood built environments may significantly affect relationships between health and active travel outcomes. Within this consideration, we explore the effect of perceived built environment factors on active travel and health, controlling for one's socio-demographic factors and physical activity levels.

This paper relies on the National Household Travel Survey (NHTS) data of 2017. This national travel survey datasets provides extensive data on socioeconomic and built environment characteristics in addition to individuals' travel patterns. The analysis sample of this study consists of 210,000 adults aged over 18. The survey questions involve respondent's self-assessment of own health (poor, fair, good, very good, and excellent), socioeconomic characteristics, participation in physical activities, travel patterns, and perceptions of the built environment. These broad data enable us to estimate the relationship between active travel, built environment, and health outcomes while controlling for individuals' lifestyles. We use ordered logit models to estimate associations between our variables of interest and self-reported health status. We include two groups of independent variables: 1) socioeconomic characteristics, mobility and perceived built environment, and 2) interaction terms between active travel and perceived built environment. The socioeconomic variables include a diverse set of characteristics such as age, gender, and education. The mobility variables cover the self-reported frequency of walking, bicycling, transit, and auto trips in a week. The perceived built environment variables include the self-reported perceptions on street crossings, heavy traffic, lighting at night, and infrastructure (i.e., trails, parks, sidewalks). Lastly, we examine the interaction effects of active travel and perceived built environment.

The sample statistics show that respondents who have negative perceptions about their neighborhood built environments are the ones with higher numbers of walking and bicycling trips. Probably, the negative perceptions come from more experience with active travel. The multivariate analyses (ordered logit models) results are generally consistent with existing literature. Health outcomes are statistically associated with socioeconomic factors such as age, gender, race, education, household income and work status. In addition, the number of trips is positively associated with health outcomes because more trips entail more activities and social relationships. Importantly, we find that the true effect of active travel on health depends on the self-reported perceptions of built environment. The findings provide a better understanding of the complex relationships between active travel, health and perceived built environment.

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Key Words: Active travel, Perceived built environment, Health status, Household Travel Survey, Interaction effects

THE EFFECTS OF TRANSIT INFRASTRUCTURE ON NEIGHBOURHOODS IN SWEDEN AND CANADA

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Transit-oriented development (TOD) has become increasingly popular in cites around the world as local governments seek to concentrate urban development in nodes such as station areas and along corridors such as new BRT and LRT lines. However, one challenge to TOD implementation is that the potential benefits (e.g. increased transit ridership, increased property values and local land development, increased densities) are offset by the loss of affordable housing and changes to the social fabric of neighbourhoods (Kramer 2018).

We compared the effects of rapid transit infrastructure projects in two neighbourhoods: Rosengård, Malmö (Sweden) and downtown Kitchener, Waterloo Region (Canada). In particular, we focused on changes in perceptions of these two neighbourhoods among residents and business owners within these areas, and developers and lenders outside the neighbourhoods who inevitably play a role in their redevelopment and rebranding as mixed-use neighbourhoods ready for new investment (e.g. Noland et al. 2017). Malmö (population 230,000) and Kitchener (population 320,000) are similar in size, both have high percentages of renter households and lower than average incomes, and rapid transit infrastructure is new to both. Rosengård and downtown Kitchener will likely change significantly as a result of the new rapid transit stations: the City of Malmö is encouraging better regional connections through an LRT line and land use changes to foster commercial development (Malmö Stad 2018), and in Kitchener the stations are part of larger LRT network connecting three mid-sized cities, which have already seen significant changes in residential and commercial demand (Thompson 2019).

This paper focuses on the findings from 32 interviews with planners, developers, residents, and business owners in the two neighbourhoods. Conflicts between state agendas for redevelopment, neighbourhood residents' desires for stability and neighbourhood identity are evident. Developers' and lenders' rebranding of the neighbourhoods to catalyze redevelopment have been more of a struggle in Rosengård than in Kitchener. The use of equitable TOD (eTOD) strategies (e.g. Thomas and Bertolini, in press) has not been considered essential in offsetting potentially negative effects on the neighbourhoods, since the main goals have been economic growth, redevelopment, and better connections to regional markets.

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Key Words: neighbourhood, housing, LRT, BRT, gentrification

A PROPOSAL FOR A CINCINNATI - DAYTON MASS TRANSIT SYSTEM FOR 2040: BRIDGING THE GAP BETWEEN TRANSPORTATION DESIGN AND TRANSPORTATION PLANNING

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Transportation design and transportation planning have been working independently from each other in the past century. Designers have been focusing on developing vehicles, and planners have been focusing transportation infrastructure development and maintenance. By 2040, connected and autonomous vehicles (CAVs), hyper-connectivity and a shared economy will drastically change the current transportation paradigm (Corwin et al., 2016). This trend will increase the complexities of urban planning and infrastructure development by introducing new types of vehicles, requiring designers to incorporate methodologies from the planning field to meet the needs of the population, and planners to consider new types of vehicles in their planning process. For instance, the regional corridor between Cincinnati and Dayton in Ohio is projected to grow in population and employment by over 20% in 2040 (2040 OKI Regional Transportation Plan, 2012), and the current transportation infrastructure plan for 2040 by the OKI (Ohio, Kentucky and Indiana Regional Council) will face the challenge of accommodating the projected needs of this regional corridor.

This study proposes the conceptual configuration of an elevated mass transit rail system between Cincinnati and Dayton in 2040 by integrating transportation design and transportation planning methodologies. It focuses its premise on providing a sustainable transportation solution for the transportation disadvantaged demographics of the region, and identifies potential paths to address their needs in the future.

Preliminary results from this study show that the coordination of design and planning methodologies for future mobility system proposals are very effective. Specifically, the introduction of design methodologies such as user journey simulations, where the specific commuting activity of a user demographic is analyzed, and their experience evaluated under quantifiable satisfaction criteria. The pain points of this simulation are used as design criteria to consider during the traditional planning process. After a compelling proposal is made, a second user simulation is carried out to evaluate if these original pain points are solved.

Additionally, using new immersive design workflows such as Virtual Reality (VR) sketching and VR validation in the planning process can offer specific insights on the needs of the population, and provide a more accurate understanding of not only the scale and visual impact of the proposal, but can validate the user experience in the system. This also allows an immersive iterative process, in which specific observations and insights from the planning process can be applied and validated in the design simulation.

Bridging the gap between design's focus at the human scale and planning's at the population scale, can be the key to addressing the growing complexities of the transportation systems of the future because ultimately, transportation is not the end; it's the means to a purpose (Chen, 2019).

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WHO DRIVES, WHERE, AND WHEN? AN EVALUATION OF MEXICO CITY'S LICENSE-PLATED BASED DRIVING RESTRICTIONS
Abstract ID: 847
Individual Paper Submission

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In an effort to manage increasing pollution and congestion in urban areas around the world, governments have implemented various types of driving restriction programs. License-plate-based restriction programs that ban car travel for specific vehicles on certain days of the week based on license-plate numbers are increasingly popular. While there are different policy variations in terms of where, when, and what types of vehicles are banned or exempted, these programs share the goal of restricting the number of cars on the road, modernizing vehicle fleets, and reducing pollution. The literature on whether and how much these programs reduce pollution or congestion is mixed.

Mexico City's program, Hoy No Circula, has been particularly well-studied. Early findings suggest that the program has not worked as intended and may have even increased pollution by encouraging households to purchase older, second cars (Davis, 2008; Eskeland & Feyzioglu, 1997). The empirical evidence supporting this second-car hypothesis, however, is quite weak and there is a myriad of other ways that a household can adjust driving behavior to avoid or ignore the ban (Guerra & Millard-Ball, 2017). Despite the substantial literature on license-plate-based restrictions and regular reference to the second car hypothesis in the literature, very few studies of driving restrictions examine household-level behavior. Understanding behavioral responses to driving restrictions is essential to minimizing social harm, ensuring that the policies work to reduce pollution, and adjusting policies to support low-income households.

This paper helps to fill this behavioral gap by using Mexico City's 2017 household travel survey to examine who drives what types of cars, where, and at what time of day. Survey respondents report government-issued hologram numbers that indicate whether a car on the road is exempt from the policy due to a newer low-polluting vehicle, potentially restricted on weekdays and Saturdays, or definitely restricted on Saturdays. Contrary to popular beliefs, very few potentially restricted drivers on the road have second cars in their household. Instead, these generally poorer residents use their cars infrequently for short trips in parts of the city that are less regulated. Preliminary models reveal that potentially restricted drivers are statistically significantly more likely to be poorer, live in suburban areas, own one or fewer cars, and drive shorter trips in less restricted parts of the metropolitan area.

We also build on this analysis through household surveys and focus groups in three inner suburban areas of Mexico City. Residents of these areas have close to the median metropolitan household income and average car-ownership rates. Those that have a car generally have just one and it is restricted one day per week and one or more Saturdays per month. Most report driving their cars because it is less expensive and safer than using transit, particularly for shorter shopping and recreational trips with other family members within the suburbs. Avoiding the once-per-week ban is therefore relatively easy. No survey respondents or focus group participants match the literature's profile of someone who needs a second restricted car for a daily work commute. Focus group participants, although aware of the implications of air pollution for human health and generally supportive of the policy's intentions, report frustration that the bans do not affect wealthier residents, who own multiple exempt cars and drive the most.

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Key Words: car restrictions, license-plate bans, Hoy no circula

DRIVERS' ATTITUDES TOWARDS BIKESHARE USERS IN MEXICO CITY
Abstract ID: 867
Individual Paper Submission

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Central Theme

Recent research indicates that bikesharing systems have a better safety record than private cycling. This raises questions about why this would be the case. It has been hypothesized that this relates to the quality and size of bikes being used, the location of bikesharing stations, differing attitudes/riding styles of cyclists that use shared bikes, and/or the attitudes of drivers toward different types of cyclists. This study focuses of the last of these reasons. The specific research question we will test is whether drivers have a more positive attitude towards cyclists using bikes provided by a local bikesharing system.

Methodology

An internet survey of drivers in Mexico City presented respondents with a set of images of cyclists that varied systematically by gender, attire, use of a helmet, and whether the bike being used has the typical color and markings of those provided by the local bikeshare (Ecobici). Respondents were asked to indicate how comfortable they would be driving next to the cyclist in the image using Likert scale ratings (1-4). A regression analysis will be conducted where the stated level of comfort with the cyclist in the image is the dependent variable and the independent variables will be the characteristics of the cyclist in the image (including whether they are using an Ecobici bike) and the individual characteristics of the survey respondent. We hypothesize that Ecobici bikes will increase drivers' level of comfort, all other thing equal.

Relevance

Cycling is a sustainable mode of travel (it is healthy, low cost, and generates no emissions) that is often poorly utilized. Urban planners are frequently concerned with increasing the rates of cycling. The danger of a vehicle collision (real or perceived) and/or acts of aggression from drivers can be a significant barrier to increased cycling. Determining the underlying factors that make bikesharing safer than private cycling is an important line of inquiry that can help planners understand how they can make cycling safer and more attractive.

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Key Words: cycling, bikeshare, safety

MICROMOBILITY SHARING USAGE PATTERNS IN AUSTIN, TEXAS
Abstract ID: 869
Individual Paper Submission

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Innovative technologies have recently transformed transportation. Technological progress in the manufacturing of light electric motors and batteries, the invention of dockless micromobility sharing vehicles, and the wide adoption of smartphones allowed a breakthrough in the field of micromobility. Micromobility is a new term that describes small, lightweight, low-speed vehicles, including bicycles, electric bicycles (e-bikes), electric kick-scooters (e-scooters), and others. Dockless sharing is a form of bikesharing that does not require docking stations, as the vehicles lock their wheels or engines to prevent illegal usage. Dockless e-scooter sharing, the most common micromobility sharing, was introduced in September 2017 and is now the most used shared vehicle in the USA (NACTO, 2019).

Dockless micromobility sharing operators and supporters claim that this service can substitute for car trips (Irfan, 2018). Studies that have examined docked bikesharing and e-bikes found that users mainly replace transit, walking, and regular bicycles (Cherry and Cervero, 2007; Fishman, 2016). Moreover, bikesharing serves a limited public and is less used among disadvantaged populations (Caspi and Noland, 2019). Dockless micromobility sharing are different in their coverage and ease of use and may have different usage patterns. In this study, I examine whether dockless micromobility sharing increases micromobility usage in Austin? Does dockless micromobility sharing increase micromobility usage in areas underserved by transit and docked bikesharing? What are the usage patterns of dockless micromobility sharing in comparison to bikesharing? How do people use dockless micromobility sharing compared to docked bikesharing in the same region? And does dockless micromobility sharing increase micromobility participation in low sociodemographic regions?

To answer these questions, I conducted an aggregated spatial analysis. I examined docked and dockless sharing trips conducted in Austin between August 16th, 2018, and February 28th, 2019, and compared it to bikesharing usage in the previous year. Austin is one of the first cities to adopt e-scooters and one of the three U.S. cities with the most e-scooter usage (NACTO, 2019) with seven operators and about 3,400 vehicles in 2019 (AustinTexas.gov, 2019). I analyzed data from a few sources, including the City of Austin, the State of Texas, the U.S. Census Bureau. Using GIS, R, and Stata, I performed spatial and temporal analysis and examined the differences between bicycle, e-bike, and e-scooter sharing usage. This analysis includes descriptive statistics and Spatial Lag Negative Binomial regression models.

My preliminary findings show that the entrance of e-scooter and e-bike sharing did not decrease bikesharing usage. Moreover, e-scooters are being used about 25 times more than bicycles. People use e-scooters and e-bikes more over the weekends, and it seems that e-scooters and bicycles are not being used for commuting, but e-bikes do. The dockless vehicles can be used across the city; however, people use it mainly in central Austin, around the same areas covered by bikesharing stations. Hence, they do not substantially extend the coverage of micromobility sharing. People use dockless micromobility more in areas covered by public transportations, suggesting that dockless sharing do not extend public transportation coverage, but may be used for chain trips.

This study adds knowledge on the travel behavior associated with the new dockless sharing systems. It provides scholars and policymakers an understanding of how these new transportation modes are being used and how they compare and influence docked bikesharing. It also suggests a method to investigate spatially scattered trip data that characterized many shared mobility modes and other GPS-derived data. It will lay the foundation for further micromobility travel behavior research.

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Key Words: Micromobility, Bikesharing, Bicycle Transportation, Spatial Analysis, Spatial Econometrics

DRIVER EDUCATION AND VEHICLE CRASHES INVOLVING DISTRACTION: IS THERE A LINKAGE
Abstract ID: 905
Individual Paper Submission

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Distracted driving, which refers to the circumstance when a drivers' attention is dispersed by non-driving activities, is a major factor contributing to traffic crashes, especially with the wide adoption of electronic devices, such as smartphones. The 2015 National Survey on Distracted Driving Attitudes and Behaviors reveals that 12% of respondents were found to be involved in crashes or near-crashes, 14% of which were caused by distracted driving (Schroeder et al., 2018). According to the National Highway Traffic Safety Administration (NHTSA), there were 34,247 fatal crashes involving 52,274 drivers in the United States in 2017, 9% of which were caused by distracted driving. It is clear that the risk of distracted driving is nonnegligible, as it may cause severe property damage, injuries, and fatalities.

Due to the high risk of distracted driving, various efforts were made to reduce distraction-affected crashes, from the perspectives of infrastructure planning, technology, legislation, and driver education (Vegega et al., 2013). Since young drivers are often overrepresented in distraction-affected crashes due to their driving inexperience and risk (Hayashi et al., 2018), driver education becomes particularly important for young drivers. However, it remains unclear whether existing driver education programs are effective or not in reducing crashes.

The objective of this study is to evaluate the effectiveness of driving education on distraction-affected fatal crashes in the United States. Based on a thorough investigation of driver educational curriculums of the 50 states and the District of Columbia, the following research questions are addressed: 1) to what extent the driver education curriculums, particularly those educational contents related to distracted driving vary in each state? 2) Is there any statistical association between fatal vehicle crashes caused by distracted driving and driver educational content?

To address these questions, driver education and crash data are collected for 50 states and the District of Columbia. The study is implemented in three steps. First, the driver education requirements are summarized based on the official information from the Department of Motor vehicle of each state. Second, if and how distracted driving is addressed in driver education curriculums are analyzed by content analysis. Third, the statistical association between vehicle crashes (especially distraction-related fatal crashes) and driver educational contents is investigated by comparative analysis and using mean-difference tests.

The study provides the following research findings. First, the requirements of driver education are quite different among different states. Second, while distracted driving-related contents are included in most states' driver education curriculums, not all the states provide a clear definition of distraction. For instance, although the use of an electronic device while driving is generally considered distracted driving behavior, other types of distraction, such as inside vehicle distractions (e.g., eating, smoking, and personal grooming) and outside the vehicle distractions (e.g., billboards and road construction) are often ignored in quite a few states. Third, the statistical analysis further confirms that there is a significant statistical association between driver education and the reduction of distraction-related fatal crashes. Specifically, states with mandatory requirements of driver education are found to be associated with 12% lower fatal crashes caused by distracted driving than those without such requirements. States with specific driver education curriculums tend to be associated with a 14% lower fatal crash rate related to distracted driving than those without such a curriculum.

The research findings provide important implications for transportation planning. First, the results will help transportation planners understand the real effects of driving education in mitigating total crashes and distraction-affected crashes. Furthermore, it will help transportation planners develop more effective strategies to reduce vehicle crashes and distracted driving.

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Key Words: Driver Education, Distracted Driving, Vehicle Crashes, Comparative analysis

STREET NETWORK MODELS, INDICATORS, AND RELATIONSHIPS WITH VEHICULAR EMISSIONS FOR EVERY METROPOLITAN AREA IN THE WORLD
Abstract ID: 910
Individual Paper Submission

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In recent years, urban transportation and morphology scholars have explored international relationships between buildings, open spaces, and street networks to better understand the built environment (Wheeler 2015), sprawl and sustainability (Barrington-Leigh and Millard-Ball 2019), and effects on mass transit provision, physical activity, pedestrian safety, and environmental sustainability. However, due to data gathering challenges and cross-national comparability issues, much of this research focuses on small-sample studies, individual regions, or relatively few indicators.

This study builds on recent related work (Boeing 2019a, b) to increase our knowledge of international urban street network patterns by 1) modeling the street network of every metropolitan area in the world, 2) calculating a basket of indicators for each, 3) identifying similarities and differences between places, and 4) estimating relationships between street network form and vehicular pollution and greenhouse gas emissions, while controlling for confounds.

To do so, it utlizes the European Commission's new Global Human Settlement Urban Center Database (Airaghi et al. 2019). This provides a spatial raster of each metropolitan area's built-up surface, along

with social, economic, and environmental variables for each. We use these boundaries to build street network models of each metropolitan area using OSMnx and OpenStreetMap data, then calculate several indicators of the street networks' geometries and topologies. Next we deposit these street network models and measures online in a public repository available for other scholars and practitioners to reuse in their own studies. Then we conduct a cluster analysis in a high-dimension feature space to identify similarities and differences between metropolitan areas. Finally we model metropolitan 1) transport-sector particulate matter emissions and 2) short-cycle transport sector CO_2 emissions as a function of these street network indicators, while controlling for population demographics, UN income class and development group, GDP, local climate and terrain, and land use efficiency.

Our findings identify a clear positive relationship between metropolitan pollution/emissions and street network circuity, grain, and (dis)connectivity, even when controlling for those related characteristics. While income and economy strongly influence vehicular emissions, the physical outcomes of urban transportation planning and design do as well. This study provides new evidence around the world for the kinds of street network and urban form patterns planners can aim for to achieve climate action plans and reduce exposure to vehicular pollution.

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Key Words: big data, street networks, sustainability, transportation, urban form

MOBILITY CAPABILITIES MATTER: MOBILITY CAPABILITIES, TRAVEL BEHAVIOR AND TRAVEL MOOD
Abstract ID: 914
Individual Paper Submission

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A good understanding of subjectively experienced well-being in daily travel is critical for the design and evaluation of policies and programs to enhance transport service. Numerous studies have examined the relationship between how we travel and how we feel (e.g., Zhu & Fan, 2018; Morris & Guerra 2014). However, our travel mood is derived not only from what we actually do or are, but also from our mobility capabilities (i.e., feasible functioning forms that they could have achieved or could have been). Using the Amartya Sen's Capability Approach as a guiding conceptual framework (Sen, 1980), the study examines how the mobility capabilities, i.e., potential mobility, affect travel mood and moderate the relationship between daily travel and travel mood. We hypothesize that there is a positive correlation between potential mobility and the experienced well-being and persons with higher potential mobility are more likely to have positive experience during travel.

To test these two hypotheses, we use the data collected via a smartphone application in Minneapolis-St. Paul area and construct different models, including ordinary least square, order logit models, and structural equation models. Contrary to previous findings that bicyclists are happier and transit users, specifically bus riders, are less happy, the research results show that individuals who have a larger set of mobility capabilities tend to be happier when traveling, regardless of the chosen travel mode choice. The results justify the theoretical link between having a large choice set and great experienced well-being and highlight the importance of improving mobility capabilities as an approach to promote transport equity.

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Key Words: The Capability Approach, Potential Mobility, Travel Mood, Travel Mode

HAILING UBER WHILE IN WHEELCHAIR: UNDERSTANDING TRAVEL BEHAVIORS OF WHEELCHAIR USERS
Abstract ID: 915
Individual Paper Submission

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This study explores travel behaviors of wheelchair users in the US, with a focus on their travel in relation to transport-network companies such as Uber and Lyft. Grise, Boisjoly, Maguire, & El-Geneidy, (2019) pointed out, "public transport network that is available for a person in a wheelchair can be significantly different from the network available to the rest of the population, due to physical barriers…" (p. 281). Wheelchair users experience physical barriers in new mobility options as well. In Uber and Lyft, wheelchair accessibility is a challenge (Taft, 2019; San Francisco Municipal Transportation Agency, Taxis and Accessible Services Division, 2019). Those using motorized wheelchairs are the most disadvantaged due to shortage of wheelchair-accessible vehicles in Uber and Lyft fleets (Tang, 2019). This study used data from the 2017 National Household Travel Survey to gain insight into the travel behaviors of wheelchair users, primarily in relation to transport-network companies. Descriptive statistics and logistic regression were used to analyze the data. The main findings indicate that a) the most frequent mode of travel for wheelchair users is the private car, similarly to non-wheelchair users; b) the percentage of wheelchair users who utilized transport-network companies was lesser compared to non-wheelchair users; and c) there is no significant difference observed in transport-network company utilization among users of different wheelchair types (manual, motorized, and scooters). The objective of this study is to understand the travel behaviors of wheelchair users to inform specific policy interventions that can improve their transport prospects in traditional and new mobility options. This is a relevant and timely issue. In 2017, there were five million wheelchair users - age five and older - in the U.S. (Brumbaugh, 2018). And as the US population ages, the prevalence of disabilities (including those that require wheelchair use) are expected to increase necessitating understanding of the travel behaviors of those with mobility impairments and creating transport policies that support their needs.

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Key Words: Wheelchair-accessibility, Disability, Transport-network companies

NEW MOBILITY FIRMS AND CITY REVENUE
Abstract ID: 926
Individual Paper Submission

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Transportation network companies (TNC), like Lyft and Uber, and shared e-scooter providers have grown exponentially in US cities, drawing on a corporate organization structure and a direct-to-consumer, platform-based service model. These new mobility firms often promote themselves as providing innovative solutions to pressing transportation needs; at the same time, they also share a reliance on public infrastructure, contributing to wear and tear on roadways, driving up maintenance costs, and in the case of TNCs, exacerbating transportation problems like congestion, crashes, and vehicle emissions

To understand the regulatory framework for these emergent modes, we examine whether cities levied taxes or fees on ride-hail and scooter firms across the 50 largest U.S. cities. We find a fragmented and diverse regulatory landscape, but one with significant state-level pre-emption that limits the ability of cities to comprehensively address the role of new mobility firms in urban transportation systems. With rare exceptions, where cities do attempt to capture roadway costs or generate revenue, cities are missing the opportunity to structure pricing in ways that would address the regressive aspects of pricing or serve collective goals, like enhanced sustainability. Without a clear model of best practice pricing, cities are adopting pilots and negotiating proposed regulations with private mobility firms, deepening a shift toward technology firms as lead stakeholders in the regulatory landscape in which they seek to profit. While these new mobility firms utilize physical collective infrastructure, they create venture-capital fueled privatized "premium networked spaces" that represent a nascent iteration of what Graham and Marvin (2001) termed the splintering metropolis.

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Key Words: transportation, pricing, transportation network companies, e-scooters

PROVIDING MOBILITY AS A MERIT GOOD IN A SMALL TOWN: EVIDENCE FROM THE TOWN OF INNISFIL, ONTARIO'S PARTNERSHIP WITH UBER
Abstract ID: 928
Individual Paper Submission

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Small towns and rural communities have long struggled with how to provide mobility as a merit good (Griffin, 2014). But the costs of providing public transit for a given level of service can be prohibitively high in small towns and rural contexts, frequently leaving low-income and/or carless residents with few mobility options. However, on-demand ride-hailing through transportation network companies (TNCs), such as Uber and Lyft, may help fill this gap. Peer-to-peer service delivery through mobile technologies may help overcome rural service cost disadvantages and could help meet a significant need (Porter, 2014). The stakes are high, as the employment and social implications of spatial and automobile mismatch are already significant for low-income households in urban areas (Blumenberg & Manville, 2004) - implying even greater implications for low-income, carless households in rural contexts. However, it is unclear whether and under what conditions on-demand ride-hailing – as a form of publicly-subsidized mobility – may advance merit-based rationales for policy intervention. This study proposes to contribute to filling this gap.

This study focuses on a case study of the Town of Innisfil's partnership with Uber to identify the potential for publicly-subsidized on-demand ride-hailing services as a tool to provide mobility based on merit-based policy objectives. On May 15, 2017, the Town of Innisfil, Ontario, began "Innisfil Transit," a public subsidy, through which Uber on-demand ride-hailing services are available to select destinations at a fixed cost of $3 to $5 or for a $5 rebate off of Uber trips to all other destinations. "Innisfil Transit," was proposed as an alternative to a limited fixed-route bus service (which had been considered in 2015) as a means of serving residents with lower incomes and without automobile access in this small Ontario town of approximately 36,000 residents spread over 260 square kilometers. Despite maximum limits on the number of trips available for each resident to use, more than 86,000 trips were served in 2018 – rather than 16,000 trips forecasted for a fixed-route bus service – at a similar cost to the Town of Innisfil (Pentikainen & Cane, 2019). But despite the ridership success of this ride-hailing-as-transit concept, it is unclear how well the most vulnerable transportation system users are being served. More fundamentally, is Innisfil Transit simply subsidizing travel patterns which residents would have undertaken anyway? Or is this program increasing mobility among those with zero or low-vehicle households?

This study uses data from a travel survey conducted by the Town of Innisfil during the winter of 2019/2020 for 736 survey respondents residing in the Town of Innisfil to explore the differences between Innisfil Transit users (who use Uber based on the Town's mobility subsidy program) and Uber users (who use Uber alone without a public subsidy). The travel survey explores questions related to individual characteristics (age, education, and employment), household characteristics (size, composition, and income), availability of mobility tools (vehicle ownership, smartphone access), recent travel behavior, and use, and attitudes towards Innisfil Transit. Both Innisfil Transit use frequency and Uber use frequency within the last month are estimated using probit models and compared, towards identifying user groups for which Innisfil Transits fills a mobility gap. Model results are interpreted with respect to whether Innisfil Transit appears to be serving target merit-based audiences: individuals from lower household incomes and individuals with zero or low vehicle ownership levels. Descriptive results are likewise presented both on stated travel satisfaction with Innisfil Transit and on trip purposes being accommodated by Innisfil Transit. Results are interpreted to provide guidance for municipalities in small towns or rural

communities regarding the opportunities and pitfalls to providing merit-based mobility services using similar publicly-subsidized on-demand ride-hailing programs.

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Key Words: transportation network companies (TNCs), Uber, merit goods, mobility, small towns

PRIVATE CAR, PUBLIC OVERSIGHT: MUNICIPAL REGULATION OF RIDE-HAILING PLATFORMS IN TORONTO AND THE GREATER GOLDEN HORSESHOE
Abstract ID: 933
Individual Paper Submission

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This paper examines the state of municipal ride-hailing legislation in a specific geographic context. Municipalities have long regulated for-hire vehicles, such as taxis and limousines, as a means to provide a public service. Historically, municipalities have pursued standards of quality and accessibility by limiting the quantity of licenses, placing standards on the quality of the car and driver, and by putting economic controls on fares (Cooper, Mundy & Nelson, 2010). With the emergence of ride-hailing platforms, such as Uber and Lyft, the regulatory capacity and authority of municipalities have become challenged, and regulators have responded by altering and modifying regulations to be more permissive of ride-hailing activities (Collier, Dubal & Carter, 2018). At the same time, researchers have identified numerous policy concerns such as congestion, poor work conditions, and market concentration (Rosenblat, 2018; Collier, Dubal & Carter, 2018). Consequently, with limited regulatory powers and persistent policy concerns, there is a need to revisit regulation of for-hire vehicle services.

Using a case study of the Greater Golden Horseshoe (GGH), the metropolitan area including and surrounding the City of Toronto, we examine the changing local regulatory landscape of the ride-hailing industry and implications for urban governance and planning in general. Specifically, we study the experiences of municipal actors and the rationales that inform regulation. The case study includes municipalities that regulated or were officially considering intervention regarding ride-hailing platforms by Fall 2018. Interviews were conducted with 27 municipal staff, councillors and industry experts, alongside an extensive review of documents from 13 municipalities. Interviews were transcribed and coded to identify key themes, drawn from the literature, as well as recurrent themes identified by the interviewees themselves (Guest, MacQueen & Namey, 2014).

The analysis reveals that the case study municipalities have an incentive to liberalize the regulatory regime. This is due to the perceived necessity to maintain unrestrained market operation, a perceived lack of authority by regulators, and a perceived lack of capacity by councillors. We find that municipalities have oriented regulation away from the concept of ensuring the provision of a public service to ensuring safety within private market operations. Yet, a recognition of for-hire vehicles as a public service was a

common theme in the interviews. The result is that public values have remained attached to legacy taxi services alone, or simply been left unresolved. We surmise that municipal regulators require new oversight tools, but are stalled in part by conceptual confusion about the goals and values of for-hire vehicle regulation. The paper highlights examples of municipalities within the region that are growing their capacity for oversight and concludes with recommendations for growing further capacity within municipal governments to ensure that this critical niche in the transportation system continues to serve public interests.

For planners specifically, this study reveals the relevance and challenges of for-hire vehicles to operating transportation infrastructure networks in the public interest. The paper calls on municipal policy makers and planners to regulate these services and incorporate them within infrastructure planning and development, rather than leaving policy concerns like accessible fares, traffic congestion and the conditions facing drivers for private industry to determine. This requires additional regulatory tools but also a clear recognition of the public value of for-hire vehicle services.

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Key Words: Platform Economy, Ride-hailing, Municipal Regulation

HOW AND WHY DO PEOPLE WITH DISABILITIES USE APP-BASED RIDEHAILING?
Abstract ID: 942
Individual Paper Submission

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Drawing on in-depth interviews, I investigate how and why people with disabilities use app-based ridehailing services provided by transportation network companies (TNCs), like Uber and Lyft. In the last decade TNC services have become ubiquitous in hundreds of U.S. cities, which poses opportunities and challenges for policymakers and regulators. Transit agencies across the country are exploring partnerships with TNCs to identify areas of mutual benefit (Moran et al. 2017). One such area identified is providing paratransit service, as is required by the Americans with Disabilities Act of 1990 (ADA).

An outstanding challenge associated with developing and executing TNC–paratransit partnerships lies in requiring TNC services to adhere to transit agencies' nondiscrimination and accessibility policies. TNCs are not required to comply with ADA regulations for transportation providers or public accommodations (Reed 2017). Select cities and the state of California have passed legislation to levy taxes and fees on TNCs with the goal of financing programs to make app-based ridehailing services more accessible to people with disabilities. California, Chicago, Seattle, and Portland have policies in place that collect fees on TNC rides for funds that are distributed to on-demand providers to offset the cost of providing wheelchair-accessible services (Kim and Puentes 2018).

To meet stated goals of improving on-demand transportation services for people with disabilities, TNC–paratransit partnerships and new accessible ridehailing policies must make TNCs more accessible to people with disabilities. People with disabilities use TNCs much less than the rest of the population, suggesting they may encounter unique barriers to accessing and using ridehailing (Brumbaugh 2018). By

explicating barriers that keep people with disabilities from using TNCs, this study makes a unique contribution to ridehailing literature, as well as to literature on disability in transportation planning and policymaking.

I conducted in-depth interviews with a diverse sample of 32 individuals with disabilities living in the San Francisco Bay Area. I analyzed verbatim interview transcripts using a "flexible coding" approach, proposed by Deterding and Waters (2018). I find that attitudes towards and use of app-based ridehailing services depends on respondents' prior experience using transportation and smartphones with a disability. Older adults and those who acquired disabilities later in life had difficulty using ridehailing because of perceived and experienced challenges hailing a ride using an app, finding the vehicle, and getting to their destination independently. Younger adults and those who had lived with their disabilities longer perceived ridehailing to be reliable and convenient, and found it relatively more affordable than conventional taxis. They liked having app-based ridehailing as an option. This was also true among respondents who used motorized wheelchairs, but they said that the availability and quality of wheelchair-accessible ridehailing services are presently lacking.

My findings suggest that TNC–paratransit partnership programs which subsidize app-based ridehailing may encourage greater use of TNCs among some people with disabilities; however, this approach, as well as new policies aimed at improving wheelchair-accessible ridehailing services, do not address voiced barriers to app-based ridehailing use among older adults with disabilities. Obstacles for this group arise from a lack of training and experience using a smartphone to hail a TNC ride, as well as from hesitations about being able to complete a ridehailing trip unassisted. Policies to facilitate ridehailing use among older adults with disabilities must address these issues, for example, by offering targeted training programs to this population covering how to access and use available TNC services.

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Key Words: aging, disability, ridehailing, TNCs, travel behavior

ESTIMATING THE IMPACTS OF ELECTRIC BICYCLE PURCHASE INCENTIVES
Abstract ID: 943
Individual Paper Submission

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With the goals of increasing transportation system sustainability and shifting away from a reliance on automobiles for urban travel, many cities are looking for ways to accommodate and encourage adoption of electric bicycles (e-bikes). Because initial cost is frequently cited as a major barrier to e-bike adoption,

purchase incentives in the forms of discounts or rebates are a commonly suggested strategy to increase adoption. Robust estimates of the potential impacts on e-bike adoption and consequent travel behaviour are needed to make informed decisions about whether to implement a program with financial incentives, and how best to design such a program.

A variety of methods have been used to model the impacts of incentives on vehicle sales or travel mode adoption, depending on the context, objectives, and available data and resources. Past research on e-bike adoption scenarios used simple sales and adoption assumptions, due to a lack of available information and models. For example, in Mason et al. (2015) the impacts of e-bike uptake are estimated from assumed adoption levels. No known research estimates e-bike sales or adoption based on a model of behavioural responses to price incentives or rebates.

More research has been done on electric vehicle (automobile) sales and adoption in the context of price incentives (rebates and tax breaks). These studies assume that the incentives have a negligible effect on total auto ownership, and so estimate the share of auto sales that will be electric vehicles (for example, see Chandra et al. (2010) and DeShazo et al. (2017)). This approach would poorly transfer to e-bike incentives, which are intended to increase total bicycle ownership and usage, not incentivize a shift away from conventional bicycles. Hence, a new modelling approach is needed to discern the effects of e-bike purchase incentives on increased adoption.

To inform e-bike purchase incentive program designs, the objective of this paper is to determine how key factors affect e-bike incentive program impacts, in particular rebate amounts. An economic model is developed to estimate the effects of e-bike purchase incentives, and then applied to rebate. Additional e-bike sales due to rebate incentives are estimated from program parameters (number and amount of rebates), market information (baseline e-bike price and sales estimates), and representative price elasticity values from the literature. The broader impacts of the marginal e-bike sales are estimated using literature on: mode substitution, e-bike usage, physical activity during e-bike usage, and emissions rates for displaced vehicle travel.

While there is substantial uncertainty in the estimated impacts, the modeling provides several insights for the development of e-bike incentive programs. A variety of rebate program designs are estimated to induce similar additional e-bike sales, around 15-25 annually at a $50,000 budget level, increasing proportionally with budget. Additional bike shop revenues are expected to exceed the total rebate budget in most scenarios. At a fixed budget, higher rebate amounts generally yield fewer additional sales and lower additional bike shop revenues; however, with lower rebate amounts a larger share of rebates go to new purchasers. Modeled program impacts are robust to uncertainty in baseline e-bike demand. Program effects will be amplified if e-bike prices fall over time, and diminished if they rise. If baseline e-bike demand is unequally distributed across income levels, the rebates will similarly be unevenly distributed. However, the program improves access to e-bikes for lower-income residents due to higher price sensitivity. A price-tiered rebate program will likely yield greater impacts and income equity. Finally, purchase incentive programs have been implemented in several locations, yet little before-and-after evaluation has occurred. It is strongly recommended that future programs include a robust evaluation of program impacts.

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Energy, CO2, and Cost Impacts. Institute for Transportation & Development Policy, Davis, California.

PLANNING CONSIDERATIONS FOR THE OPERATIONAL PHASE OF PUBLIC-PRIVATE PARTNERSHIPS: LESSONS FROM CANADA
Abstract ID: 944
Individual Paper Submission

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Around the world, major infrastructure projects are increasingly being delivered through public-private partnerships (PPPs) that involve the private sector operating and maintaining key public transit, waste and water, hospital and recreation facilities. To date, case study research shows that the experience with private infrastructure operations in PPP arrangements is quite mixed. While some projects have had smooth operations, others face challenges with poor service quality, conflicts between the public and private sector partners, secrecy in the management of the contract, and a loss of public policy control over the infrastructure asset (Siemiatycki, 2010; Hodge et al., 2017; Farmer, 2014). Given that the PPP operating contract between the public owner of the infrastructure and the private partner can last for decades, it is imperative that the impacts of private operation of infrastructure PPPs are well understood and planned for (O'Neil, 2017).

This research examines the experiences of senior infrastructure practitioners from the public and private sector that are currently managing the operations of major infrastructure PPPs, to identify where the model of private infrastructure operations is working and the key challenges that arise. This study conducted the largest survey of public and private sector practitioners currently managing the operational phase of PPP infrastructure projects in Canada, a country that is among the global leaders in the use of PPPs. The survey is complemented by a case study of the private operations of the Canada Line rapid transit PPP in Vancouver. The case study examines the way that the contractual terms impact on the flexibility of public sector infrastructure planners to accommodate higher than expected ridership on the system.

The study finds that public and private sector infrastructure practitioners are generally satisfied with the experience of operating and maintaining public infrastructure through PPPs. However common challenges with long term PPP operations include a lack of contract clarity leading to disputes between the partners, financial incentives in the PPP contracts that are not sufficient to motivate the private provision of high quality service, and overly rigid contracts that create a lack of flexibility to respond to changing societal needs. This research provides critical insights for infrastructure planners on the implications and new kinds of risk that arise from delivering major infrastructure through PPPs, at a time when more projects around the world are utilizing this procurement model.

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Key Words: Infrastructure, Transportation, Public-Private Partnerships

RE-EXAMINING WHETHER IMMIGRANTS ASSIMILATE TO AUTO USE: EVIDENCE FROM SOUTHERN ONTARIO, CANADA
Abstract ID: 947
Individual Paper Submission

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Without a better understanding of immigrant travel behavior, the nuances of immigrants' mobility needs may go unmet in planning processes. While statutory transportation planning requirements focus on mobility "needs," social understandings of what travel is "needed" varies over time and by group. In many major cities, immigration has become the primary (if not sole) reason for population growth (Thomas, 2013). Evidence continues to emerge indicating that immigrants use non-auto modes significantly more than non-immigrants but assimilate in becoming more auto-oriented (Chatman, 2014). Likewise, mobility differences between ethnic groups may persist (Hu, et al., 2020). In the absence of an understanding of the travel behavior of specific immigrant groups and changes over time, there is a distinct possibility for a significant disconnect between understandings of what transportation services are provided and what services are needed (Blumenberg, 2009; Chatman & Klein, 2009). Towards bridging this gap, this study explores auto ownership and vehicular travel among self-identified immigrants and non-immigrants of either self-identified Asian or European ethnicity in Southern Ontario, Canada.

Using a 2018 travel survey of residents of the Greater Toronto and Hamilton Area, this study uses data on immigrant status and length of residence in Canada, self-identified ethnicity and population group membership, and travel behavior to explore the links between immigrant status and the length of residence in Canada and several mobility measures, including auto ownership and vehicle travel. Individual travel survey data are used for 2,360 respondents who self-identify as being of Asian (473 immigrants and 266 non-immigrants) or European ethnicity (346 immigrants and 1275 non-immigrants). These self-identified ethnicities are chosen to reduce the potential confounding effects of other diverse ethnicities in affecting travel behavior. Data includes individual and socioeconomic characteristics, household characteristics, and metrics of recent individual travel behavior. Data on location of residence is used to construct several metrics of neighborhood characteristics and the built environment.

This study begins by using the 2018 travel survey data to present descriptive statistics related to differences between immigrant groups, based on length of residence in Canada (less than five years, five to ten years, ten to 15 years, and greater than 15 years) and based on auto ownership and vehicle-kilometers traveled (VKT). Next, inferential models are estimated to formally test the links between immigrant status and travel behavior outcomes. Logistic regression models of household vehicle ownership are estimated before tobit regression models of daily VKT are estimated. Tobit regression models are preferred over more conventional ordinary least squares (OLS) regression models based on the truncated nature of the daily VKT variable (asked of the previous day). Models account for individual characteristics (age, sex, education level, employment status), household characteristics (size, composition, and income), and residential urban form characteristics (density and mix of land uses, presence and quality of transit services).

Descriptive results support the expectation of significant differences between immigrant status (based on length of stay) and self-identified ethnicity (Asian or European) and both vehicle ownership and VKT. However, inferential models show a more complex story. Models of household vehicle ownership (yes/no) indicate that, all else being equal, being a recent immigrant to Canada is associated with lower vehicle ownership rates, but that effects attenuate rapidly – implying rapid assimilation. Tobit models of daily VKT suggest that these lower rates of auto ownership translate weakly into VKT

reductions. Instead, evidence is suggestive of a VKT rebound among Asian populations – wherein some immigrants exceed VKT expectations of non-immigrant groups, all else being equal. These findings beg to question why Asian immigrants use their vehicles so intensely and how mobility gaps are overcome so quickly – leading to several policy considerations.

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Key Words: immigrants, travel behavior, assimilation, Toronto, automobility

UNDERSTANDING THE RELATIONSHIPS BETWEEN MOBILITY, PERCEPTION OF INCLUSION, AND WELL-BEING IN SASKATCHEWAN'S NORTHERN COMMUNITIES.
Abstract ID: 975
Individual Paper Submission

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Over the past decades, a growing number of studies have investigated transportation-related social exclusion issues as a major urban policy challenge; however, the literature is only just starting to examine rural issues. Additionally, most rural research focuses on aging populations. Studies that address transport disadvantage in Canada, not to mention in the Canadian Prairie Provinces or First Nations lands, remain lacking in the literature. Focussing on the La Ronge and Air Ronge region as well as the Lac La Ronge Indian Band's reserve communities in Saskatchewan, this paper examines the relationships between mobility, activity participation, and well-being in northern communities using a social inclusion lens.

The authors conducted a comprehensive survey in October and November of 2019, requiring respondents to report their travel behaviour patterns, activity participation, perceptions of inclusion (feelings of missing a set of activities), and well-being. The effort resulted in 399 completed surveys. Using the survey data a Personal Well-being Index and Perception of Inclusion Index were calculated. Three statistical models were developed to understand the factors affecting missing out activities, and how missing out activities impact social inclusion and well-being, while controlling for a number of socioeconomic and urban environmental factors.

The initial results show around 31% of respondents were transportation disadvantaged because they missed routine activities due to transportation-related reasons. Reasons for missing routine activities are linked to First Nation identification, lack of a valid driver's license, availability of a motor vehicle, presence of a medical condition, the cancelation of inter-city transit options, and area of residence, all of which are linked with low income and unemployment. A lower sense of well-being correlates with increased transportation disadvantage. For all trip purposes, the sense of personal well-being is highest for those driving alone to activities, and those attending a higher number of monthly activities.

As is the case for urban centers, additional transportation options in rural settings can act as a tool to combat social exclusion by enabling access to opportunities. The study identifies opportunities for

additional First Nations-centered research to discern cultural values of time and travel as they relate to well-being along with further spatial analysis to develop measures of accessibility. This study helps in informing researchers and practitioners about the importance of transportation demand and supply in often overlooked northern communities. Transportation options are not only a matter of convenience, but also contribute critically to a community's overall well-being.

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Key Words: well-being, activity participation, northern community, First Nations, rural planning

EQUITABLE CROWDSOURCING: HOW DO PLANNERS USE AND ADDRESS POTENTIAL BIAS IN EMERGING DATA SOURCES?
Abstract ID: 977
Individual Paper Submission

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Technological innovation is reshaping the way decisions about transportation infrastructure investment and service changes in cities are being made. Where once urban planners had to rely on traffic detectors fixed in location, manual counts of pedestrians or bicyclists, and household surveys to understand how people move about, newer forms of big data collection are increasingly supplementing traditional data sources to give a more complete picture for decision making (Misra et al. 2014; Griffin and Jiao 2019). These emerging data sources include crowdsourced data—that is, information that individuals voluntarily contribute via mobile apps or online platforms to which they consent to give information—and crowd-sensed data, or data passively collected and generally not volunteered, such as from urban sensor networks or cell phone data.

In planning fields traditionally constrained by sparse data, these emerging data sources have been widely welcomed as a way to make more informed decisions about infrastructure investment priorities in the context of limited resources. A critical unresolved question, however, is whether a growing reliance on crowdsourced and crowd-sensed data can support equitable investment in transportation infrastructure and service. First, cities may vary in how they use crowdsourced and crowd-sensed data (from visualization to project prioritization), how much authority they attribute to crowdsourced and crowd-sensed data (from supplemental to other sources to complete authority), and how much attention they give to potential biases (from no recognition to deliberate adjustment). Second, the equity implications of emerging data sources depend on how representative the data are with respect to underlying community needs. Past work has tended to focus on bias in users—that is, who contributes data (Blanc, Figliozzi, and Clifton 2016; Le Dantec et al. 2016; Jestico, Nelson, and Winters 2016). While this is important, a related but underemphasized source of bias comes from the spatial use of crowdsourced platforms—that is, where users contribute data. For instance, if users are less likely to report on infrastructure conditions in low-income communities of color, the needs of these communities may be undervalued in planning processes that rely on crowdsourced data. This spatial dimension, and potential correction, of bias in emerging data sources has received limited attention to date.

Thus, there are critical gaps in our understanding of how the use of emerging data sources to plan for transportation infrastructure and service might affect social equity. In this presentation, we ask how U.S. cities use crowdsourced and crowd-sensed data to make decisions about transportation infrastructure and service.

We will present the first phase of this work, which will report findings from a survey of planning practitioners—including transportation planners and modelers within municipal governments, regional planning organizations, and transit agencies—in the 70 most populous U.S. metropolitan areas. The purpose of this survey is to determine what planners know about emerging data sources, what their interest level and experiences are in using such data, whether and how potential data gaps and biases are addressed, and what the barriers are to fuller implementation. Survey distribution is currently underway; we expect to have results for analysis by April 30. We will report both descriptive findings and regression results analyzing the factors most significantly associated with the adoption of emerging data sources for transportation planning. In subsequent phases, which we will preview in our presentation, we will undertake two tasks: (1) interviewing 25 practitioners for additional qualitative data about their use of crowdsourced and crowd-sensed data and (2) analyzing the spatial representativeness of emerging data sources relative to traditional data sources, such as bicycle counts.

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Key Words: Crowdsourced data, Transportation planning, Data representativeness

THE IMPACT OF SHARED ELECTRIC SCOOTERS ON UNIVERSITY CAMPUS MOBILITY
Abstract ID: 998
Individual Paper Submission

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Emerging shared mobility services are quickly changing the traditional transportation landscape, especially on university campuses where cutting-edge technologies are often incubated and tested. One of the recent shared mobility services was the shared electric scooters (e-scooters). The rapid adoption of these e-scooters on campus and surrounding areas poses significant challenges for transportation planners and policymakers as there is limited information and data about how e-scooters may affect travel behaviors. Despite the increasing popularity, the impact of e-scooter service on travel behaviors remains largely uncertain.

This paper presents findings from a recent mobility survey at Michigan State University (MSU) that addressed the adoption and utilization of e-scooters by faculty, staff, and students for their commuting and on-campus trips. Two findings from this study contribute to our understanding of the impact of e-scooters. First, while the use of e-scooters is gaining popularity among students, travel behaviors of faculty and staff are largely unchanged regardless of trip distances. Second, the introduction of free bus fare on campus, however, was proven to be more attractive to students than taking e-scooters. This finding indicates that public transit, even for short distance trips, can become more competitive by lowering its fare. Third, e-scooters were found to have a strong competing relationship with active transportation modes in that 60% of e-scooter trips would have been taken by active modes if e-scooters were not available. This result shows the potential for negative health effects associated with e-scooters use.

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Key Words: micro-mobility, travel behavior, shared mobility, public transportation

COMPREHENSIVE UNDERSTANDING OF URBAN GROWTH AND AUTOMOBILE DEPENDENCY BETWEEN 1991 AND 2011: A COMPARATIVE STUDY OF CANADIAN CITIES
Abstract ID: 1007
Individual Paper Submission

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From 1991 to 2011, Canada's population increased by 25% with the majority of growth occurring in Canada's urban areas (Statistics Canada, 2020). In response to a rapidly growing population, municipalities across Canada followed a similar growth model, directing development towards the periphery of the city. As a result, new growth areas became increasingly reliant on the private automobile for mobility. These patterns of growth, which are auto-centric and where land uses are segregated have many problems such as fiscal deficits, long commuting times, and the privatization of public spaces (Ewing, Pendall, & Chen, 2002). With an increased understanding of the negative externalities of sprawl, many Canadian municipalities have increased investment towards expanding transit service and intensification of the existing built-up area in order to curb outward growth. Despite their efforts, several municipalities still show heavier automobile dependence while others significantly reduced automobile travel in their areas.

Focusing on Canadian urban areas with a population over 150,000, through a comparative study, the aim of this research is to provide insight regarding the automobile dependency of our case studies. Specifically, this study 1) compares trends in urban growth and travel behavior, with a focus on automobile dependency, 2) investigates the past land use and transportation policies/plans each municipality adopted to reduce automobile dependency, and 3) identifies innovative land use and transportation policies of relevance across Canada's urban hierarchy. This study utilizes the Urban Transportation Indicators from the Transportation Association of Canada (TAC) to compare results across our case studies. The indicators include land use characteristics, transportation supply and demand, and

transportation system performance. By evaluating the latest planning documents from the municipalities of interest, this study concludes with a plan analysis of the current policy framework for land use and transportation planning, to better understand common or diverging practices across our case studies (Park et al., 2020).

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Key Words: Urban growth, Automobile dependency, Canadian cities, Transportation plan

SPATIAL DETERMINANTS OF DOCKLESS MOBILITY USE
Abstract ID: 1010
Individual Paper Submission

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Few studies have examined the link between dockless mobility trips and land use, and what a land use model of dockless travel can tell us about the potential for dockless mobility as a travel mode. We address this gap.

In this research, we seek to describe spatial determinants of trip generation of leased dockless mobility devices – e-scooters, in particular – and to use these results to predict trip generation in metropolitan areas. Using publicly available trip origin data from the Cities of Louisville, Kentucky and Minneapolis, Minnesota, we associate each trip with a census block group, temporally aggregate the number of trips generated within the block group to the day level, and regress this value onto the block group's employment density (in workers per square kilometer), population density (in residents per square kilometer), distance from downtown (in meters), and distance from the local university (in meters). The results show that dockless mobility trips occur in locations of high employment density and are especially clustered near downtowns and major pedestrian centers such as universities, but are negatively associated with population density.

We use regression models from Louisville and Minneapolis to predict dockless mobility trips, at the block group level, in a national sample of cities. We focus on the potential for dockless mobility to serve as a mode for short trips. We compare the locations of predicted dockless mobility trips, based on land use patterns, with the locations of short trips from the 2017 National Household Travel Survey, to illuminate where and in what contexts dockless mobility can and cannot replace short trips via other modes.

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Key Words: Dockless, E-scooter, Micromobility, Scooter-share, Disruptive Technology

STRATEGIES FOR ACHIEVING TRANSPORTATION JUSTICE: SEEING BEYOND THE STATE
Abstract ID: 1017
Individual Paper Submission

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Transportation justice is normative condition in which no person or group is disadvantaged by a lack of access to the opportunities they need to lead a meaningful and dignified life. It involves transforming the structures and processes that lead to the inequitable distribution of transportation's multiple externalities across populations and space. Also essential is that residents and other stakeholders should be able to actively participate in and influence the decisions that affect their lives. In this way, struggles for transportation justice echo those embedded in the broader environmental justice movement that advocates for addressing structural issues of race, ethnicity, and capital to produce fair processes, an equitable distribution of outcomes, and the recognition of diverse forms of knowledge in decision making (Schlosberg, 2004). Available evidence on disparities in automobile ownership rates, trip-making behavior, mode choice, activity participation, and exposure to environmental burdens suggests that people of color, low-income people, people with disabilities, older adults, and youth are at risk of various forms of transportation injustice.

Correcting these injustices would require a structural redistribution of resources, including both political power and financial capital. But transportation planners around the world more commonly focus on technical fixes and quantitative "equity" analyses that illustrate how the benefits and burdens of transportation plans and projects are distributed, often relying upon large-scale simulation models of future land use and travel behavior. Public involvement is also solicited, but it is often pro forma, and its results are unlikely to affect ultimate decisions (Karner & Marcantonio, 2018).

Importantly, the impetus for such efforts stems from the formal authority of the state to regulate and finance transportation improvements. Receipt of public funds requires adherence to a litany of laws and regulations related to public involvement, anti-discrimination, and reporting (Marcantonio et al., 2017). In practice, these quantitative equity analyses and public involvement efforts have at times resulted in incremental changes, but they mainly reform—rather than transform—the transportation system and leave unchanged the power positions and well-being of disadvantaged populations.

Two different perspectives—"transportation justice" and "transportation equity"—regularly appear in the literature and practice. The justice framing is more common among activist groups and non-governmental organizations while the term equity is more commonly used by state actors. This may reflect underlying differences in each groups' perspective on the desirability of transformation of social structures (justice) in contrast with reform of the processes and distribution of social goods and opportunities (equity). Concerns related to justice and equity have permeated the planning literature and practice for decades (e.g., Fainstein, 2011; Krumholz & Forester, 1990). These authors and others point to strong normative principles about what constitutes just outcomes and who can and should decide what is just. Accordingly, they are often skeptical of the state's ability to achieve justice.

In this paper, we draw from critical perspectives in environmental justice studies to advance the literature and practice towards transportation justice with a focus on the United States. We synthesize relevant

literature before reviewing transportation equity/justice in practice to highlight key challenges and opportunities for achieving meaningful change. We argue that state-centric strategies such as developing new equity-oriented tools, metrics, and planning processes are necessary, but not sufficient to achieve transportation justice, and that planning scholars, practitioners and advocates must continue to reflect on the benefits and limits of state-centric strategies and develop new ways of engaging with environmental justice and related social movements in order to achieve transformational change. We argue that approaches emphasizing the agency and power of community-based organizations and address structural factors which negatively affect certain people and places will be crucial for achieving justice.

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Key Words: transportation equity, environmental justice, advocacy, public engagement

TRANSPORTATION AND WELLBEING: EXPLORING POST-SECONDARY STUDENTS' COMMUTE SATISFACTION AND ITS RELATIONSHIP TO CAMPUS PARTICIPATION AND SUCCESS
Abstract ID: 1021
Individual Paper Submission

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Many post-secondary students in large North American regions have long and strenuous commute. Existing literature suggests that commute is associated with their campus participation and academic performance (Coutts et al., 2018). Current research has explored travel satisfaction in relation to distance travelled and travel mode choice (i.e., hedonic wellbeing) (Ettema et al., 2011), but the link between transportation experiences/satisfaction and broader subjective wellbeing (i.e., eudaimonic wellbeing) is less clear, particularly as it relates to young adults or post-secondary students. In this context, this paper makes two novel contributions. First, we examine the potential association between post-secondary students' satisfaction with commute trips and their activity participation and success on campus, which we have conceptualized as measures of subjective wellbeing (De Vos et al, 2013). Second, we explore the travel behaviour, socio-demographic and attitudinal factors associated with travel satisfaction in a large urban region where student commute experiences are complex and diverse.

Data comes from a large student transportation study titled StudentMoveTO (www.studentmoveto.ca). In the fall of 2019, students attending six universities and four community colleges participated in an online survey. For the purpose of this paper, we used survey data from 1,931 students attending Ryerson University, which is a medium-sized university located in downtown Toronto, Canada, with most students commuting from all across the Greater Toronto and Hamilton Area (GTHA).

The majority of students reported their commute to be a barrier to their campus participation (70%) and co-curricular experience (50%). Furthermore, 51% of respondents said their commute discouraged them

from coming to campus and 57% said they picked courses based on their commute. Nearly 40% students viewed commute as a barrier to their academic success. Binary logistic regression models found statistical association between travel satisfaction with commute and each of these subjective wellbeing indicators.

Further, an ordinal logistic regression showed that those who walked (OR = 3.82), bicycled (OR = 2.10), or took regional transit (OR = 1.74) were more satisfied compared those who took local transit. Valuing environmentally-friendly and active travel was associated with greater travel satisfaction (OR = 1.19). Finally, older and graduate students were more satisfied with their commute.

With large student populations, universities and colleges are important partners in city building. A better understanding of commute satisfaction and its relationship with student wellbeing advances a limited literature (e.g., Handy and Thigpen, 2019; Páez and Whalen, 2010), and provides an opportunity for stronger advocacy, more progressive campus planning, and improved transportation policy that addresses everyday transportation challenges of young adults.

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Key Words: Travel satisfaction, Subjective wellbeing, Post-secondary students, Commute, Travel attitudes

EXAMINATION OF ALTERNATIVE FUEL VEHICLE POLICIES AND GOVERNANCE THROUGH THE LENS OF MULTI-LEVEL GOVERNANCE FRAMEWORK: CASES IN CALIFORNIA AND MARYLAND
Abstract ID: 1024
Individual Paper Submission

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All countries on the earth are facing impacts of global warming and climate change on environment, communities, and human health, including frequent and extreme heat, rising sea levels and coastal flooding, damaging wildfires and droughts, and destructive hurricanes. Given the substantial amount of evidence for a strong consistent relationship between cumulative greenhouse gases (GHGs) emissions and global temperature change, many countries have set policies to reduce the amount of GHGs in future. In the US, the governors of eight states, including California and Maryland, signed in October 2013, a memorandum of understanding (MoU) to set the goal of at least 3.3 million zero emission vehicles (ZEV) registered in their states by 2025 (Multi-state ZEV Task Force, unknown). Including New Jersey and Maine, ten states adopted rules that require approximately 15% of new vehicle sales to be zero emission vehicles by 2025. Here questions arise in regard to the efficacy of alternative fuel vehicle (AFV) policies especially in the other states because CA has enacted other legislations that complement the AFV policies in order to reduce GHGs.

Many studies have examined the importance and effectiveness of policies and incentives, using survey methods (e.g., Santos and Davies 2019) and regression analysis methods (e.g., Chandra, Gulati, and Kandlikar 2010; Beresteanu and Li 2011; Sierzchula, Bakker, Maat, and van Wee 2014; Jin, Searle, and Lutsey 2014; Wang, Li, and Zhao 2017). However, these studies did not pay attentions to the different levels of government and equivalent geographic scales in which each policy or planning measure can work. In addition, they did not carefully consider the fact that some policies and planning programs in the higher level of government provide funding and/or institutional settings that help local and regional governments implement certain measures.

In this study, I will examine the AFV policies and related complementary policies in California and Maryland, applying the multi-level governance (MLG) framework to analyze state legislations, planning documents, and other information available on the web sites of governments, public agencies, and non-profit organizations. The MLG concept has been applied to examine the development, implementation, effectiveness and accountability of climate change policies in the UK, given that multiple levels of government and other public agencies, as well as many actors in the private and non-profit sectors, can substantially influence the efficacy of GHG emission reduction policies (Marsden and Rye 2010; Fudge 2010; Bashe et al. 2015). More specifically, I will address the following questions: (1) what AFV policies and relevant policies are formed in each state and (2) what governance structure exists in each state to implement these policies, paying attentions to the importance of coordination and consistency with local and regional planning. This study contributes to identification of important transportation policies, governance, and other conditions to effectively reduce GHGs, partially replicating California's approaches in other states and countries.

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Key Words: alternative fuel vehicle policies, ZEV mandate, multi-level governance, climate change

WHAT AFFECT THE OCCURRENCE OF TRANSIT-INDUCED GENTRIFICATION AMONG U.S. METROPOLITAN AREAS?
Abstract ID: 1026
Individual Paper Submission

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Problem: Gentrification is a term used to describe the process and changes that commonly occur in lower-income and/or minority neighborhoods with the influx of more affluent residents who are more likely to be white, increases in property values, the renovation of housing, the upscaling of local commercial and retail properties, and potentially, the displacement of current residents. In the past two decades, some studies have found that the sustained growth of the high-quality public transit systems – both rails and

buses – may have triggered or accelerated gentrification in some U.S. metropolitan areas, and scholars have defined that phenomenon as the "Transit-Induced Gentrification" (TIG). Current empirical studies on TIG have not drawn a consistent conclusion on the significance of the causal relationship between transit and gentrification. The authors' previous study have also confirmed that the probability of TIG varies and is heterogeneous among the 40 metropolitan areas in the U.S. that have built new rapid transit stations during 2000 to 2009. Until now, few empirical studies have examined the determinants of the occurrence of TIG. This study is designed to identify factors that are likely to be associated with the occurrence of TIG, including the physical, infrastructural, socioeconomic and policy factors at the regional level (metropolitan), as well as the physical and socioeconomic factors at the local level (block group).

Approach and methodology: The study area includes all block groups that are newly served by rapid transit stations opened during 2000 to 2009 in the 40 U.S. metropolitan areas. Regression analysis is used to examine the hypotheses on factors that could be associated with the occurrence of TIG. Two scenarios of regression analyses are applied with different settings of the dependent variables—a binary variable indicating the occurrence of TIG and a continuous variable indicating the magnitude of gentrification. The independent variables include both regional and local characteristics. The regional characteristics include physical (such as area of land, and urban form), infrastructural (such as density of transit and high-quality transit), and socioeconomic (such as race, education, occupation, and unemployment) characteristics, as well as policies (such as Transit-Oriented Development policy, and housing policies) at the metropolitan level. The local characteristics include physical (such as location, land use, housing density, transit modes and station density), and socioeconomic (such as race, gender, education, occupation, unemployment, poverty, and family structures) characteristics.

Take away for practice: The identification of factors that associated with the higher probabilities of experiencing TIG will enable policy-makers and urban planners to identify high-risk areas of TIG, and to target anti-displacement policies such as affordable housing and rent ceilings to assist the most vulnerable areas and residents. In addition, targeting the anti-displacement policies at the most vulnerable could also help sustain transit service to transit-dependents.

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Key Words: Transit, Gentrification

MODELING VEHICULAR MOVEMENTS AND EMISSION FOR POLICY REVIEW IN HALIFAX, CANADA
Abstract ID: 1027
Individual Paper Submission

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This paper focuses on a comparative analysis of emissions of the regional transportation network in Halifax, Canada. It integrates the Halifax Regional Municipality (HRM) Transport Network Model which is developed using Equilibre Multimodal Multimodal Equilibrium (EMME/4) platform (1, 2) and an emission modeling framework based on the Motor Vehicle Emission Simulator (MOVES) (3). It proposes a tour-based delivery truck movement network modeling framework with trip-based passenger car movement model (4) and develops an emission model for Halifax to estimate the emissions of major air pollutants generated from passenger cars and commercial vehicles including local delivery and long haul trucks (3).

Major pollutants considered for this study include Greenhouse gas (GHG) as CO_2-equivalent, carbon monoxide (CO), nitrogen oxides (NOx), particulate matter PM_{10} and $PM_{2.5}$, sulphur dioxide (SO_2), total hydrocarbons (THC), and volatile organic compounds (VOC). 24-hour link volumes and the emissions generated by all modes within the HRM are produced from the result of this model (3). The model also generates the emissions from passenger cars, delivery trucks and long-haul trucks separately.

The model uses multiple sources of databases including SHAW GPS tracking information data, Info Canada Business Establishment data set for the year of 2018, NovaTRAC surveys. The model is calibrated and validated separately for passenger cars and trucks using observed volumes for Halifax network obtained from HRM and Nova Scotia Transportation and Infrastructure Renewal (3).

Model results of the year 2011 shows that the zonal emissions of trucks the AM peak, mid-day and PM peak periods for the TAZs in Halifax. The 2016 model shows similar temporal pattern. Model results of 2016 is also analyzed by spatial structure - urban, sub-urban and rural. Results suggests that emission rate gradually decreases from urban zones to suburban zones whereas rural zones experience the least emission. When comparing 2011 and 2016 emission, it is observed that the emission is gradually rising over the years. For example, the maximum emission is observed for GHG which is 754.80 gm/km^2 in 2011 and 762 gm/km^2 for the year 2016.

This study highlights a need for policy interventions to reduce dependency on car usage and curb emission. Recently, the HRM has adopted a comprehensive emission reduction strategy known as HalifACT 2050. The federal government adopted carbon pricing policy for all provinces. Therefore, this paper also examines a policy scenario of carbon pricing utilizing the modeling framework developed in this study. The results of this policy testing will provide important insights on how to plan for emission reduction for both passenger car and commercial vehicle movements.

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Key Words: Emission modeling, Carbon pricing

THE EFFICIENCY OF COMBINING DIFFERENT TRANSIT SERVICE OPERATIONS: THE CASE OF COLLABORATIVE TRANSIT SERVICES WITHIN A TRAVEL REGION IN THE UNITED STATES
Abstract ID: 1031
Individual Paper Submission

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The network effect postulates that the utility of a product increases with an increase in its consumption (Clement, 2004). Drawing a parallel, the utility for transit services will increase to users as transit service usage increases. Such transit ridership increase can be gained when different public transit providers within a metropolitan region expand their area of transit services through service collaborations with other public transit providers within the region.

Assessing how such regional public transit service arrangement enhances the productive efficiency of the system is the focus of this article, which analyzes the comparative productive efficiencies of collaborative and non-collaborative regional transit providers in the United States. These transit agencies were used to measure the relationship between collaborative transit services and productive transit efficiency. It attempts to verify that based on the key performance indicator (KPI) – passenger trips per revenue hour, the transit providers participating in coordinated transit services with other transit providers in their service region are more efficient than those that operate non-collaboratively.

We conducted an explanatory cross-sectional study using data from the Federal Transit Administration's (FTA) transit data clearinghouse, called National Transit Database (NTD), and the United States Census Bureau. We examined the factors contributing to the improvement of transit productive efficiency levels in US Metropolitan Areas. This empirical verification was designed to show how the KPI of efficiency could be improved through collaborative services. The result from this effort shows that collaborativeness of transit services positively affects productive or technical transit efficiency, thus encouraging such inter agency collaborations.

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Key Words: Transit services key performance indicators, productive or technical efficiency, collaborative and non-collaborative services, network effect

ASSESS TRANSPORTATION VULNERABILITY TO SEA LEVEL RISE USING COMMUNITY SURVEY AND CROWDSOURCING DATA —A CASE STUDY OF CITY AND COUNTY OF HONOLULU, HAWAII
Abstract ID: 1034
Individual Paper Submission

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Tidal flooding, a tangible, present-day effect of sea level rise, has caused roadway damage and transportation system closures as well as delay, disruptions, and economic losses. Exposure to flooding would not only reduce road capacity, cause closure and damage, but also affect the community's accessibility to essential services (Koetse & Rietveld, 2009). There is need for more research to better understand and adapt transportation services to more frequent tidal flooding and rising sea levels. Despite many studies evaluating the potential impacts of sea level rise on transportation infrastructure (e.g. Wang et al., 2014; Lu and Peng, 2011), few studies have been validated with empirical data. Using City and County of Honolulu as a case study, this study used a normalized Hansen accessibility index (Hansen, 1959), crowdsourcing photos, and map-based community survey to explore communities' transportation vulnerability to tidal flooding as a window to see the potential impacts of sea level rise. The results show spatially the vulnerability in terms of accessibility reduction is unequally distributed. Crowdsourcing and community survey help to better understand the social sensitivity to such vulnerability and validate the transportation modeling results. Both the crowdsourcing photos and the survey results confirm that the residents at the North part of the island near Kahuku, the east part near Hawaii Kai, and the central part near Honolulu Harbor are more sensitive to the impacts caused by tidal flooding than others. These communities also have a low level of accessibility to various opportunities even without coastal flooding. Accessibility to universities, employment, groceries, and hospitals/clinics are most affected and recreational accessibility is least affected on average. In general, accessibility reduction increases with the percentage of affected road, the total length of exposure, percentage of residents in educational, health and social services industries, and percentage of white alone population, and is negatively related with the percentage of residents in public administration, information, and retail industries. The findings indicate that certain areas and economic sectors would be more affected by future sea level rise and should be given special attention to in adaptation. In addition to transportation planners, the analysis are useful to first responders, emergency managers, and others working to increase transportation system resilience to future coastal hazards.

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Key Words: Transportation vulnerability, Tidal flooding, Hansen accessibility, Community mapping, Crowdsourcing

TRANSFORMING TRANSPORTATION IMPACTS IN A NEW ERA OF FREIGHT AND PERSON TRAVEL
Abstract ID: 1038
Individual Paper Submission

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Many changes are afoot across U.S. cities, including densification, infill and mixed-use development, and facilitation of multimodal travel (Hess & Lombardi, 2004; Kimball, Chester, Gino, & Reyna, 2013). Simultaneously, planning research and practice is recognizing parking as a key determinant of automobile use (Manville, 2017) and beginning to explore the impacts of rising residential demand for goods delivery (Wang & Zhou, 2015). However, current trip generation methods fall short on a number of fronts, including lack of sensitivity to urban form (Clifton, Currans, & Muhs, 2015), and are ill-equipped to measure transportation impacts as the landscape of cities and transportation networks transform. Updated methods are necessary to capture the full scope of transportation impacts, but a lack of data and understanding of how these changes are manifesting as a result of new development act as a barrier to this effort.

To address this gap, this project leverages novel data from a recent study of 12 market rate, multifamily residential apartments in Portland, OR. Sites were selected to vary across a number of characteristics, including parking ratio, mixed-uses, and unit sizes. Data were collected across a 14-hour period (7:00 AM - 9:00 PM) and included cordon counts of both persons and vehicles accessing and egressing each site, as well as surveys requesting travelers' modes and parking location. Site visitors making deliveries were asked about the type of goods being delivered, and residents were asked about their deliveries of various goods in the previous week. Additional analysis was conducted to characterize and quantify neighborhood amenities, including off-site parking supply, restaurants, and grocery stores.

Analysis of mode use across developments illuminates the dominance of automobile travel, even in areas with high accessibility. Further, more vehicle trips began or ended off-site (31%) compared to on-site (20%), establishing a nexus between site-level development and off-site transportation impacts. Both vehicle and person travel varied between developments relative to neighborhood-scale access to various amenities, although even sites with limited or no residential parking exhibited a substantial amount of automobile travel.

Demand for residential deliveries had further implications for transportation impacts. Personal vehicles comprised the greatest mode share for deliveries (37%) compared to delivery vans (36%) or delivery trucks (21%). Survey respondents reported receiving an average of 1.6 parcels, 0.5 prepared food deliveries, and 0.3 grocery deliveries per unit per week. Demand differed with variation in local access to restaurants, grocery stores, and other amenities for each site in our sample. Delivery trips occurred largely outside the morning and evening peak hours typically focused on in trip generation analyses, highlighting the inability of traditional methods to capture these trips.

Our findings reiterate the inadequacy of current trip generation approaches to capture the full scope of transportation impacts of new development. Exclusive focus on the peak hour ignores a substantial amount of travel generated by new developments; data collection across a full day of travel, however, is labor intensive. Innovations in technology (e.g. video capture, object tracking algorithms) may become increasingly important to capture these impacts and allow for holistic planning. The ability to differentiate between residents, delivery personnel, and other site visitors, as well as their travel modes, was key in this analysis and made possible by administration of the survey. Capturing these travel characteristics, relative to the built environment, is needed to understand demand for activities and to develop policies regarding residential parking minimums and curb space utilization. Future research examining the connection of site-level demand for travel and goods with neighborhood-level impacts and access can help identify necessary mitigations and more efficiently and fairly allocate transportation system development charges.

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THE EFFECT OF BICYCLE INFRASTRUCTURE ON RESIDENTIAL PROPERTY VALUES IN A MID-SIZED CANADIAN CITY
Abstract ID: 1047
Individual Paper Submission

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Urban planners generally promote investment in active transportation infrastructure with perceived benefits of improved human well-being and environmental sustainability (Forsyth & Krizek, 2010). However, municipalities proposing cycling facility investment plans often face resistance from the local community. Homeowners perceive that they themselves will have relatively low rates of bicycle use, and that cycling facilities near their homes will decrease their property values (Krizek, 2006), due to possibly increased noise, reduced safety and on-street parking. These concerns create a challenge for policy makers to implement cycling infrastructure plans. The major question facing both policy makers and homeowners is "what is the actual effect of bicycle infrastructure on residential property values?"

Studies of the effects of transit infrastructure on property values generally support that proximity to major transit systems increases residential property values through improved accessibility (Bartholomew & Ewing, 2011). However, the value of cycling facilities on residential properties lacks thorough investigation due to inconsistent measures of cycling accessibility and methods (Connolly et al., 2019; Welch, Gehrke, & Wang, 2016). Existing hedonic studies often analyze cross-sectional data for single-family houses and lack consideration of spatial and temporal correlations (Krizek, 2006). Our municipal research partners also perceive a gap in studies for mid-sized cities. In this study, we use 2013-2018 housing transaction data from Kitchener, Ontario, a mid-sized Canadian city, to estimate the effects of bicycle facilities on different housing-type values, including condos single-detached, semi-detached town houses. We develop a hedonic statistical model that considers the space-time correlations between housing transactions to control for the influence of pricing through "recent comparable sales" as well as multilevel neighbourhood effects, to control for neighbourhood amenities, built form, and reputation. In the model, we implement several measures of proximity to two types of cycling infrastructure, 1) on-street facilities (such as designated shared roads and bike lanes); 2) multi-use trails outside the street right of way. We also control for some major confounding locational factors including location on a regional (high-volume) road, bus transit accessibility, open space access, and pedestrian-only trails.

Our findings reveal that impacts of different cycling lane types vary for different housing types. Improved proximity to on-street cycling facilities and multi-use trails very slightly negatively affect home values of single-detached houses, while multi-use trails positively affect home values for condos. While we have controlled for most confounding factors, we know our analysis still omits some key variables. Our municipal partners report resident concerns that installing active transportation infrastructure on or near a primarily residential street will reduce property values, due to reduced aesthetics, "unwanted" people, reductions of parking, increases in car travel time, and loss of tree canopy. While we are in the processes of estimating new models including tree canopy and improved transit accessibility metrics, data on sidewalks, parking, road speeds, and bike/pedestrian flow are not available, and tree data do not yet

reflect ash borer losses.

However, by providing estimates using state-of-the art methods and the best available data, we anticipate that our findings will help bring objective evidence to the debate over the impacts of cycling infrastructure on property values, facilitating improved communication between policy makers and residents over this important investment. Our current results indicate an extremely modest negative impact on property values, and that only for certain housing types. These findings resonate with qualitative interviews conducted with local realtors, done as part of this project, that find no major negative associations with cycling infrastructure for those looking to buy properties. As increased cycling has clear environmental and health benefits, evidence of modest private cost impacts may support on-net the public value of the investment.

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Key Words: Cycling infrastructure, residential property value, hedonic model, space-time multi-level modelling

WHO'S RIDING TRANSIT? AN EXAMINATION OF CHANGES IN TRANSIT RIDER CHARACTERISTICS USING LATENT PROFILE ANALYSIS
Abstract ID: 1055
Individual Paper Submission

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Despite substantial public investment, transit ridership in areas across the U.S. has declined over the past several years. While previous studies have sought to determine the causes of falling transit ridership, this analysis assesses changes in transit use from a different perspective. Rather than investigating why ridership has fallen, we examine if and how the pool of transit users has shifted over time.

Using Latent Profile Analysis and data from the 2009 and 2017 National Household Travel Surveys, we classify transit users into three groups based on their observed travel behavior. These characteristics include the following: number of transit trips in the last month and on the survey day, total and transit personal miles of travel, percentage of miles and trips by transit, auto ownership, licensure, and type of transit use (bus only, rail only, bus and rail). We then examine how the size of these three groups changed between 2009 and 2017, as well as how the travel behavior, socioeconomic, demographic, and locational characteristics of their members shifted over time. While this analysis does not necessarily provide insight into why transit use has declined, it does deepen our understanding of how changes in policy, economic conditions, other contextual factors have influenced the types of people who ride transit and the ways in which they use it.

Overall, we find that the proportion of riders who are low income and have limited access to automobiles

grew during the study period. These users, who we label "Transit Dependents," rely on transit for a large percentage of their daily travel, have low levels of personal miles traveled (PMT), and depend heavily on bus transit. Conversely, the proportion of medium-income riders with moderate levels of vehicle ownership, a group that we term "Occasional Transit Riders," decreased during the study period. These individuals use transit for roughly one-third of their daily travel, have an intermediate level of PMT, and generally use bus more than rail. Finally, while the proportion of high-income, car-owning transit riders was stable nationwide, this group's relative size grew dramatically in certain metropolitan areas, such as San Francisco, Los Angeles, and New York City. These users, who we label "Choice Transit Riders," use transit for a large percentage of their daily travel, have high levels of PMT, and take rail transit relatively frequently.

The results suggest that changes in the policy environment that have prioritized rail infrastructure, suburban-oriented transit extensions, and modes and routes that serve downtown job centers have made transit more attractive to higher-income commuters, but less accommodating to travelers who use transit for shorter, irregular trips.

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Key Words: public transit, ridership, demographic change, travel behavior

MAKE ROOM FOR BUSES: A CASE STUDY OF TRANSIT REVIVAL IN SEATTLE, WASHINGTON
Abstract ID: 1064
Individual Paper Submission

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Bus ridership in the United States has fallen to its lowest level in thirty years. A broader reduction in transit ridership has significant implications for environmental sustainability, traffic congestion, and the financial health of transit systems and their ability to provide service. One of the few exceptions to this trend is Seattle, where bus ridership has seen consistent increases the past several years.

Previous research has examined potential reasons behind the decline in US public transit ridership. It may be partly due to the emergence of new modes, such as ridehailing, or broader increases in car ownership (Graehler et al 2019; Deka 2002). Other research has investigated transit service levels in relation to ridership, though the majority of research has focused on service supply instead of quality (Taylor & Fink, 2013). This paper fills an important gap by examining service factors that account for an increase in transit ridership, offering lessons for transit systems across the country.

In the past decade, Seattle has implemented several changes to its transit system, including road space

prioritization, BRT-lite systems, and interconnectivity with light rail, all fueled by transit investments. At the same time, it has seen an influx of new residents, who have largely been moving into the denser parts of the city. In some respects, Seattle serves as a useful comparison for other cities in the United States, ranking around 20th in both population and population density. Historically unsupportive of transportation-related taxes and transit developments, city residents have a higher per-capita car ownership rate than that of Los Angeles. In other ways, however, the city and region are unique, related to their recent population growth and high-income population.

This paper critically examines Seattle's growth in public bus ridership, with an eye toward teasing apart which components may be replicable in other cities and which are unique to Seattle. It uses the Puget Sound Regional Council Household Travel Survey from 2006, 2014, 2015, and 2017, along with built environment and transit service data and policy documents, to answer three questions: 1) Who are these riders making additional transit trips, 2) What factors were most important in increasing ridership, and 3) How was Seattle able to implement its public bus service improvements?

Detailed travel diary data and behavioral modeling provides insights into the characteristics of individuals who are increasingly choosing to take public transit, as well as trip timing and purposes. Previous locations of recent movers to the region are examined to reflect on the impact of prior transit experience on travel behavior (Smart & Klein 2018). Modeling of trip data, in conjunction with data on the built environment, density, and service changes, is used to tease apart which service changes are most closely connected to ridership trends. Finally, an analysis of policy documents, public meeting notes, and regional plans provides perspective into how Seattle was able to implement its transportation improvements and priority bus lanes (Ray 2019).

The goal of this research is to provide insight into how cities are able to prioritize bus service in a way that can attract new riders, change perceptions of the public bus, and compete with other modes of transportation. The findings will inform debate on the sources of transit ridership decline, and lessons for reversing these trends.

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Key Words: Public transit, Transportation policy, Travel behavior, Policy implementation

THE DIVERSE DYNAMICS OF PARATRANSIT: LEARNING FROM LABOUR ACROSS AFRICAN CITIES
Abstract ID: 1066
Individual Paper Submission

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Public transport in most African cities is provided by privately owned vehicles that operate on daily lease contracts and compete for passengers 'in the market'. This leads to well established shortcomings, such as dangerous and competitive driving and poor vehicle quality. In some cities, transport networks are also spatially limited and provide poor accessibility to jobs and other destinations. This may be driven by the existing, unprotected 'target' contract system in public transport and lack of regulation of market entry.

Drawing on fieldwork and surveys of paratransit in four African cities – Nairobi, Djibouti, Lubumbashi and Lilongwe – this research finds similarities, but also, crucially, substantial differences which help to flesh out social and economic analyses. Surveys and interviews of drivers, operators and regulators help to shed light on the process by which the transport operators and drivers make decisions about how to change or evolve their networks, and how they gauge the attractiveness of a given route.

I argue, contrary to an assumption in literature on informal transport systems, that mechanisms of reactivity to either market or social demand operate poorly and to the detriment of marginalized groups. The generally low earning and little formal security of income of drivers, mean that these must meet their high daily targets by driving primarily on reliable, high-demand routes, with no margins or incentives to develop new, more targeted or widely distributed destinations. Doing so would require multiple vehicles to coordinate and operate at a loss until a passenger base is established, and long-term gains may be uncertain as other drivers would immediately compete for the new market.

By comparing work carried in these four cities over the past five years, I find that each city system operates at an individual equilibrium, with varied fares, working hours, and distributions of routes on the one hand, and working conditions and levels of organization on the other. The findings highlight the importance of organization at a scale beyond that of the individual owner-vehicle-driver to allow the establishment of new routes or the extension of existing ones and meet passenger needs. Furthermore, regulation which mandates firm organization plays an important role but also has unexpected results, in terms of creating more, not less, informalized and distanced ties between drivers and operators. It is also the organization of multiple vehicles into firms or associations that creates a layer of managerial capacity, and it is this, not individual operator initiative, that drives 'exploratory' behaviours and expands route networks.

Beyond empirical analysis, this research examines the possible methodological and policy approaches that a focus on paratransit 'on its own terms' can offer in creating interventions. I raise the questions of whether there are forms of regulation that can improve both the working conditions and incomes of the important transport labour force, while also improving transport services for passengers.

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Key Words: informal transport, paratransit, public transport, African cities, labour

THE ROLE OF RESIDENTIAL CHOICE ON THE TRAVEL BEHAVIOR OF YOUNG ADULTS
Abstract ID: 1083

Individual Paper Submission

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As the vehicle miles travelled by young adults rapidly decreased after the mid of the 2000s, many researchers started to pay attention to the travel behavior changes. In the late of the 2000s and the early part of the 2010s, studies showed that young adults drove less, owned fewer cars, and used multiple modes including public transit and bicycles at a higher rate than similarly aged cohorts before them. Some studies in the mid of the 2010s, however, suggested that the travel behavior change of young adults is reverting back to patterns of prior generations. Another change among young adults that has received attention is their residential location choice marked by a higher preference for city living as compared to prior similarly aged cohorts. A higher number and higher proportion of young adults lived in central cities in the early and mid of the 2010s than the early of the 2000s.

One interesting point related to the travel and residential preference shifts of young adults is that the shifts may be associated each other. It is widely known that built environments factors such as density, proximity to public transit, and land use are strongly related to use of public transit and walk modes. Given that some travel behavior is influenced by the built environment, it is possible that the observed behavior choices, including higher use of public transit and less automobile travel, among young adults results not only from their preference shifts, but may also be reinforced by the choice of city living given the better facilities that cities provide for non-automobile transportation as compared to suburbs. There, however, exist few studies that examine the impact of residential location choice toward cities among young adults on their travel behavior changes. This study aims to fill that gap focusing on young adults' choice behavior.

To examine the impact, we analyze residential location choice trend of young adults, and the relationship between their choice trend and travel behavior. We use 2006 and 2017 Household Travel Survey data by Puget Sound Regional Council and build a structural equation model (SEM) with weighted travel data. We selected the SEM to analyze the effect of individual and household characteristics on residential location choice, vehicle ownership, mode choice, and travel distance respectively, and simultaneously examine overall effects each other.

The findings from the structural equation model show that young adults in 2017 prefer home locations closer to downtown of Seattle than the same cohort in 2006 and older age groups, and they also tend to own fewer cars when compared with older adults. The findings also show an interesting result in PMT of highly educated young adults. The direct effect estimates suggest that highly educated adults have higher PMTs as compared to those with lower levels of education. However, the overall effect of being highly educated is smaller as a result of the reductions in PMT due to the indirect effects of living close to downtown and higher use of non-automobile modes. Overall, while PMTs for those with higher levels of education is higher, this is counteracted by their location choice and mode choice decisions.

The mode choice and distance traveled are not directly affected by age variables. However, residential location choice and vehicle ownership of young adults in 2017 indirectly influences mode choice and traveled distance. Living closer to downtown and owning fewer cars also indirectly influences young adults in 2017 to use more non-automobile modes like public transit, walking and bicycling. Living closer to downtown, owning fewer cars, and using more non-automobile modes indirectly influenced young adult's PMT in 2017.

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Key Words: Travel Behavior, Young adults, Residential location choice, Structural equation model

MOVING AN AGING NATION: WHAT WOULD THE ELDERLY PREFER?
Abstract ID: 1088
Individual Paper Submission

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U.S.A. is an aging nation. The U. S. Census projects that the older adult population aged 65 years and above will be a quarter of the total population by 2060, growing from 49 million in 2016 to 95 million by 2060. It is expected that by 2035, there will be 11.8 million people who are 85 years or older, and this figure will rise to 19 million by 2060 (Vespa et.al. 2020). This demographic change indicates that the needs of this group will be amplified and that serious considerations are placed in meeting those needs. Especially, the mobility needs for accessing necessary food and medical services, as well as social and recreational options, should also be part of such concern.

Currently, the elderly do not seem to have many mobility options. Driving, the predominant mode may become inconvenient, uncomfortable and even unsafe as individuals age. Public transport use is already low in the elderly population. Many elderly individuals don't qualify for para-transit services unless they have a serious disability other than their age that inhibits their driving. Traditional Public transport services need a lot of improvement which would be not only costly, but may not hold up to the promise of enhanced mobility for seniors (Rosenbloom, 2009). Transportation Network Companies such as Lyft and Uber could work, but there is need to simplify and increase the ease of use (of technology) which is yet to be done (Shirgaokar, 2018). Transportation deficiency and the lack of current travel options may leave the elderly physically, socially and emotionally isolated, reason enough for taking a good look and act on the situation (Alnish and Hensher, 2003; Kim 2011).

In doing so, there is a need to look at both the supply and the demand for services. To truly make service solutions work, not only do we need to assess the current service but also understand what the senior population is looking for, what their preferences, perceptions, and challenges are and how these match up with the real service supply scenario.

In order to seek some answers on this mobility challenge, this study assesses the growing accessibility and mobility needs of seniors in Westfield, Massachusetts. Westfield has a population of less than 50,000 people, with limited public transport services provided by a regional agency. To gauge their perceptions and preference for modes of travel, a survey of older adults was conducted, and this is to be followed by in-depth interviews of consenting seniors. The study will combine the results of such survey and interview with data from the regional transit agency, city resources, and the U.S. Census Bureau to draw out insights. A GIS-based spatial analysis of this data will present a more complete picture of the mobility constraints and needs in the city with respect to seniors. These results will enhance an understanding of the subject for Westfield, but such lessons may be useful and applicable to similar small and medium-sized cities with limited public transport as well.

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INCORPORATING PUBLIC ACCEPTANCE INTO PLANNING DECISIONS FOR AUTONOMOUS VEHICLES
Abstract ID: 1111
Individual Paper Submission

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The use of autonomous vehicles (AVs) has become a popular consideration in transportation planning, as a means, for example, of improving automotive and rail safety. Many gaps, however, exist in how to integrate the technology into planning as a basis for decisions about when, where and how to use AVs. What is particularly critical for the introduction of such vehicles is the incorporation of public acceptance. The focus usually is upon the physical characteristics of AVs, yet how users understand, perceive and behave toward the technology and the factors that these attitudes and behaviors are based on are a critical component of planning. A 2019 AAA public survey found that for fully autonomous vehicles, about three-quarters of their sample remained concerned about the technology. This paper addresses components of public acceptance of AVs based upon several theoretical foundations. First, is traditional social psychological theory related to public attitudes and behavior toward technology in general that includes the need of individuals to personally control the technologies they use, the tendency to overestimate small risks and underestimate large risks, and the role of knowledge and experience in acceptance of technology (Slovic 2000) and the demographic differences that emerge in many of these factors when applied to different technologies (Flynn et al 1994). Second, specific determinants of attitudes toward public infrastructure services in general are applied conceptually to AVs. An application of behavioral theory to non-autonomous infrastructures revealed a common set of behavioral attributes across different infrastructure services (Zimmerman 2019). The paper presents a transportation framework to evaluate the potential incorporation of AVs into public travel that combines trip purpose (work, shopping, education, social, health) and modes of travel (private vehicle, public transportation, walking and biking) based on U.S. DOT Federal Highway Administration statistics, challenges that such a technology faces, and factors that potentially affect public acceptability.* Technological factors that have been identified in the transportation literature that present challenges to AV introduction include the existence of support facilities for AVs, e.g., parking, the connectivity of AVs to other modes that often depends on the existence of communication systems, and competition from and compatibility with other modes of travel where interconnections are necessary. Factors potentially influencing acceptability include perceived safety and fear (especially given the potential for cyber attacks and performance and reliability), availability, convenience, accessibility in light of trips users make, and affordability. The methodology is based on extracting factors from the behavioral, planning, and transportation literature and case studies pertaining to attitudes and behavior toward AV introduction that were listed above. Results show that many current cases and literature point to concerns about safety, cost and the ability of AVs to meet travel requirements, and these concerns may vary with the level of automation of the vehicle and whether they are road or rail based. Trip purpose arises as a key factor in the utility of AVs. For example, one potential use could be in emergency transportation (Yang, Ban and Mitchell 2017). Considerable efforts in understanding and communicating the risks of the technology are shown to be a key planning component in the evaluation of the viability of AV technologies.

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Key Words: Autonomous vehicles, Public attitudes and behavior, transportation planning, multi-modal transportation, transportation technology decision making

SCHOOL TRAVEL EQUITY FOR VULNERABLE STUDENT POPULATIONS THROUGH RIDEHAILING: AN ANALYSIS OF HOPSKIPDRIVE AND OTHER TRIPS TO SCHOOL IN LOS ANGELES COUNTY

Abstract ID: 1112
Individual Paper Submission

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School travel in the United States has traditionally occurred via five primary modes: private vehicles, school buses, walking, bicycles, and public transit. In most states, school buses represent the largest share after private vehicles. In California, however, school buses are nearly nonexistent. This creates gaps in school transportation equity for students who have limited access to a private vehicle, and it presents complications for school districts transporting students who are federally required to receive transportation. HopSkipDrive, a ridehailing company expressly designed to serve children, is working to close these gaps. Founded in 2014 by three working moms looking to solve transportation gaps for their own children, HopSkipDrive operates with two business models: a consumer model, similar to Lyft and Uber in which a parent/guardian hires a ride for their child, and an enterprise model, in which the company provides advance-scheduled rides under contracts with school districts and county governments. The latter business model largely serves three federally-protected classes of students who must receive transportation services: foster youth, students experiencing homelessness, and students with disabilities. Ultimately, my research seeks to answer the following question: Had HopSkipDrive not been an option, how could the students using their services get to school, and is there a relationship between neighborhood sociodemographic traits and the level of options?

My research analyzes unique trip-level data for all 32,796 trips taken to high schools in Los Angeles County on HopSkipDrive's platform in the 2018–2019 academic year. I separate my analyses by the type of HopSkipDrive trip: consumer trips, trips under contract with schools to serve students with disabilities and students experiencing homelessness, and trips under contract with Los Angeles County to serve foster youth. First, I provide basic descriptive statistics of HopSkipDrive trips. In conjunction, I use the 2017 NHTS California Add-On to contextualize HopSkipDrive trips and to compare them with the school travel behaviors of high schoolers in California and Los Angeles County. Then, I link HopSkipDrive's trip data to neighborhood sociodemographic data at the census tract of origin, to understand the equity

implications of this service. Finally, I compare the data to an alternate scenario in which each trip had instead been taken on public transit, using GTFS data from all major transit operators in Los Angeles County to assess hypothetical trip statistics for each HopSkipDrive trip through Open Source Routing Machine (OSRM).

I find that HopSkipDrive serves trips that are both greater in distance and longer in duration than the average trips in California and Los Angeles County. Within HopSkipDrive's trips, both types of contract trips are greater in distance and longer in duration than consumer trips. When connecting these data to neighborhood traits, who these trips serve by type is clearly defined: consumer trips tend to begin in neighborhoods that are wealthier, whiter, and better educated, while contract trips—for both schools and foster youth—tend to begin in neighborhoods that are poorer, have higher percentages of residents of color, and are less educated. Additionally, preliminary models indicate only about one-third of HopSkipDrive contract trips could be otherwise taken on transit; of those that could, HopSkipDrive realizes substantial time savings for the students it serves. I will continue refining this model in the coming weeks to provide conclusive evidence, but based on my initial findings, I tentatively conclude that HopSkipDrive is providing an essential service for our most vulnerable student populations, especially in the California context where past policy decisions preclude a school bus alternative.

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Key Words: Transportation, School Travel, Ridehailing, Foster Youth

THEORIZING 'TRAVEL DEPENDENCY' AS A FACTOR IN MODE CHOICE: A FRAMEWORK INCORPORATING GENDER, TRANSPORT DISADVANTAGE AND SOCIAL EXCLUSION
Abstract ID: 1142
Individual Paper Submission

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The negative impacts of transport disadvantage and social exclusion on an individual's ability to access socio-economic opportunities and lead a healthy life are evident globally. This paper adopts a gender lens to study transport disadvantage and social exclusion in a developing country city context. I ask: how do gendered socio-cultural constraints, ease of access to transport options, and social exclusion express themselves in travel mode choices made by women on a daily basis? What does that imply for gender-inclusive transport planning? I propose a conceptual framework which links mobility barriers to 'travel as dependents' as a factor in mode choice, enabling women to negotiate different forms of social exclusion in daily life, ranging from physical, spatial, financial, psychological and other forms of exclusion.

The study is rooted in a case study conducted in Panchkula, India, a city with limited availability of public transport modes and services. This research draws on eight focus group discussions, which recruited 78 female participants living in different parts of the city. The participants varied by age, income, education,

marital status, and vehicle ownership levels.

Findings establish that gendered social norms in combination with lack of access to safe, adequate, and reliable transportation create a sense of dependency for travel among women on other members of the household who have access to a personal mode of transport; most of which happen to be men. For instance, a young college-going graduate student, despite availability of a personal mode of transport or ability to use advanced public transport modes, shows dependency rooted in poor security levels after-dark hours. Similarly, a low-income woman with limited financial resources shows travel dependency rooted in financial as well as spatial constraints to travel beyond walkable distances. This dependency creates chauffeuring burdens on certain individuals (i.e., chauffeurs) and forces the dependents to limit or align their travel needs based on the availability of a chauffeur.

The paper argues that travel dependency amongst women is both a cause and effect of gender blindness in urban transport policymaking and planning practices and has massive social, economic and environmental implications. Not accounting for 'travel as dependents' as a factor in mode choice in data collection and transport planning practices also reaffirms and reinforces some of the underlying social norms/practices that form the very basis of unequal transport access among men and women, and inequitable cities at large. I conclude that planning for accessibility to services along with combating women's constraints at either end of their journey is at the core of dismantling travel dependency, and transitioning towards more gender-equal systems.

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Key Words: Travel dependency, Gendered mobilities, Urban transport planning, Social exclusion, Transport disadvantage

SUBWAYS IN THE SKY AND THE GROWTH OF THE URBAN PERIPHERY. EXAMINING THE NEXUS BETWEEN BOGOTA'S FIRST AERIAL CABLE-CAR LINE, INFORMAL TRANSPORT, AND LAND DEVELOPMENT
Abstract ID: 1158
Individual Paper Submission

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In the Global South, rapid urbanization and rising land costs often relegate lower-income households to difficult-to-access peripheral zones far away from urban centers. Difficult-to-access peripheral neighborhoods are generally served by an intricate patchwork of private transit services composed by illegal private transit (also referred to as paratransit) services, and authorized but loosely regulated bus routes. Combined, these services carry hundreds of passengers through congested, narrow, and dangerously steep roads. As a result of recognizing the needs of populations living on difficult-to-access peripheral neighborhoods, several Latin American cities, including Medellín, La Paz, and Mexico City, have deployed aerial cable-cars to connect peripheral communities with mass transit better. Joining its peers, Bogotá opened last year its first cable-propelled line in Ciudad Bolivar - one of the largest and poorest peripheral districts of the city.

While most of the attention has been focused on examining some of the benefits from aerial cable-cars -- such as for example access to jobs or crime (Bocarejo et al., 2014), little is known about how these interventions enable the growth of informal paratransit services and unplanned urbanization patterns in the urban fringe. Scholars have documented the importance of paratransit in developing world cities, and particularly for some socially marginalized communities (e.g., Oviedo Hernandez and Titheridge, 2015), yet little is known about how paratransit services evolve and adapt to exogenous changes such as the deploying of new public transport infrastructures. Moreover, research on the transport and land use connection focuses primarily on urban areas in the global north, where urban dynamics are too different than those of cities in the global south, limiting our understanding the role of informality in mediating the land development and transport nexus.

Using Bogota´s TransMiCable as a case of study my research answer the following two questions: [1] how illegal paratransit services adapt and evolve after new public transport infrastructures and services are deployed, and [2] how public transit and paratransit, combined, contribute to the phenomenon of expansion of the urban fringe. I answer these questions by employing spatial analyses with data from satellite and 'on-the-ground' images, GPS traces on paratransit services, triangulated with semi-structured interviews with community leaders, paratransit service providers, and planners.

My understanding of the symbiotic nexus between (para)transit and land development in the urban fringe is informed by scholarship on peripheral urbanization (Caldeira, 2017), urban informality (e.g., Mukhija and Loukaitou-Sideris, 2015)), and land development & transport economics (e.g., Rodriguez and Mojica, 2009). My ultimate goal is to provide a more nuanced understanding of how the urban periphery rapidly evolve, and what the role planners is in steering this evolution.

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Key Words: aerial cable-car, public transportation, informality, land development, urban expansion

URBAN TRANSPORT POLICY RESPONSES IN CHINA DURING THE COVID-19 OUTBREAK
Abstract ID: 1160
Individual Paper Submission

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Central theme or hypothesis: what research question are you trying to address?

The 2019-2020 Coronavirus Outbreak is exerting a great impact on the major urban systems in China.

The outbreak is not only challenging the medical service providers, but also affecting the transportation networks in many ways. Almost all Chinese cities, small or large, have temporarily adjusted their urban transport policies and adopted short-term measures to both prevent the spreading of the disease and accommodate the demand of citizens during the outbreak. This article aims to summarize the urban transport policy responses of Chinese cities to the challenging virus outbreak and analyze the rationale and implications of those policy adjustments.

Approach and methodology: how will you address that question?

Using a crowdsourcing data collection protocol, we collected data on urban transport policy adjustments of 56 cities during January 20 and February 15, 2020. A group of students majored in transport planning retrieved the data originally from local announcements and Internet postings. The authors cleaned, verified and coded the records afterwards. We first looked into the details of urban transport policies adopted and studied public transit and private transport modes separately. We hypothesized the way municipal authorities cope with the coronavirus outbreak is correlated with city size, seriousness of virus transmission, distance to the Wuhan where the first infection case was identified, and economic development status. Accordingly, we categorized all the sample cities into groups with different characteristics related to these variables. Through comparative analysis between the groups, we examined how policy makers respond to virus spreading threats under different institutional, economic, and organizational constraints.

Findings

Using the detailed policy making information, we found that in around half of the surveyed cities, city bus systems were temporarily suspended to avoid the spreading of the COVID-19 virus during bus riding. Another half nonetheless chose to reduce the frequency and service hours of bus services. The traffic control of city metro systems, another important public transit mode, was, however, less strict. Out of seventeen cities with metro systems, only Wuhan shut down the system completely. Most cities slightly downgraded their metro services but started to check passengers' temperature, and sanitate the metro coaches. With regard to private transportation modes, a small number of cities interrupted the taxi and ride hailing services. Three cities even banned the use of private vehicles as well as shared bikes. The variations in urban transport policy making turned out to be highly significant. In general, cities of larger population sizes, stronger economic power, greater openness to the world, and more experience to deal with distinctive public voices tend to make more flexible policies instead of quick-and-dirty ones. Those cities also make efforts to avoid unnecessary disturbance to local citizens as much as possible and care more about citizens with economic and physical disadvantages.

Relevance of your work to planning scholarship, practice, or education

Urban transport policies are important to citizens, especially during this uncommon COVID-19 outbreak season when transportation becomes particularly in need but may also cause further virus spreading. How different cities respond to such demand and constraints is still largely unknown. Our work attempts to provide some evidence on this question in a timely manner. Our findings could potentially help cities better consider the gains and losses of various policy adjustments, and provide protection and convenience to citizens at the same time.

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Key Words: urban transport policy, COVID-19 outbreak, public transit, private transportation

GENDER, RACE, AND THE COMMUTE BURDENS OF LOW-WAGE WORKERS IN LA
Abstract ID: 1162
Individual Paper Submission

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The Los Angeles economy has the highest percentage of low-wage jobs in the U.S. and one of the least affordable housing markets. How are low-wage workers coping with the twin pressures of high housing costs and low wages? Our study takes a first step toward unpacking this puzzle by examining how commute times—a key indicator of how workers connect home and work, and negotiate the housing and labor markets—vary by wages, race-ethnicity, and gender.

We analyze commute times in the Los Angeles metropolitan region using a distributional approach and data from the 2017 ACS. Our initial findings confirm the expected relationship between wages and commute time: for all racial-ethnic groups, commute times increase with higher wages. However, commuting levels differ sharply by race and ethnicity. Most starkly, African American workers experience the longest commutes, both overall and relative to their gender and wage counterparts. Conversely, white workers have the shortest commutes. This racial disparity overrides class: commutes of the lowest-wage African American male workers are 10% longer than the commutes of the highest-wage white men. Latino workers' commute times follow a similar, but less pronounced, trend. Women have shorter commutes than men within all racial-ethnic groups and across wage quantiles. Yet the same racial-ethnic commute burden holds for women-of-color as for men: women-of-color have longer commutes than white women, and the lowest-paid women of color must travel nearly as long as their highest-paid white counterparts to work. Low-wage African American women commute longer.

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Key Words: commuting, gender, low-wage

EXPLORING THE EFFECTS OF A FREE SUBWAY POLICY ON OLDER ADULTS' TRAVEL BEHAVIOR
Abstract ID: 1169
Individual Paper Submission

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South Korea is one of the fastest aging countries around the world. According to the recent report released by Statistics Korea (2019), about one-fourth of Koreans will be over 65 by 2030. This dramatic demographic change poses enormous challenges to the government, one of which is to support the mobility of the elderly population. As a part of efforts to address mobility concerns among older adults and improve their welfare, a transport policy granting free subway rides to citizens aged 65 or older have been implemented in the Seoul metropolitan area since the mid-1980s.

This study examines the impact of a transport policy granting free subway rides for older adults on various types of travel behavior. It improves on previous research by identifying the causal relationship between fare-free transit and travel behavior. Using a quasi-experimental research design and multiple secondary data sources, I investigate how the eligibility for free subway rides influences the various types of travel outcomes among older adults in the Seoul metropolitan area. The results show that the fare-free subway for the elderly increases their subway uses, which substitute trips by other transport modes. Specifically, a discrete jump in the number of subway trips at age 65 replaces some auto trips, also contributing to a significant reduction of household vehicle ownership. However, I do not find any evidence that this policy has significant effects on travel outcomes associated with health, such as active travel and social/leisure trips. The findings of this study have important implications for both transport and environmental policy.

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Key Words: Fare-free transit, travel behavior, physical activity, causality

USING PUBLIC OUTREACH TO ESTABLISH TRANSPORT EQUITY MEASURES IN OTTAWA, ONTARIO
Abstract ID: 1173
Individual Paper Submission

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Despite substantial evidence about the critical role that transportation plays in improving social outcomes, significant inequities remain in how transport benefits are distributed. Disadvantaged communities are often poorly served by public and active transport, and those with multiple barriers, such as low-income women and refugees, experience even greater difficulties in accessing desired locations. One way to improve outcomes is to focus on the transportation planning process, including the metrics or indicators used to evaluate options, determine priorities, and assess success (Litman, 2007). Yet, equity metrics are only infrequently integrated in transport policy (Manaugh, Badami, & El-Geneidy, 2015; Linovski, Baker, & Manaugh, 2018). Although the academic research on the importance of transport equity is extensive, municipalities still struggle with integrating equity goals in transportation planning and improving accessibility for disadvantaged groups.

This research examines how equity measures can be better integrated in transport policy through using participant-led research methods. Drawing on in-depth qualitative and spatial analysis methods, this work seeks to understand how public values and priorities may be used to develop context-specific equity metrics. Through a partnership with community leaders and advocacy groups in Ottawa, Ont., we developed a public survey that asked broad questions about how equity should be assessed and prioritized in transportation funding. This survey, as well as additional engagement with community members,

elected officials and planners, was then used to develop a context-specific equity assessment tools. To develop this tool, we incorporate geocoded survey responses that highlight specific resident-identified needs and priorities with common transportation metrics (e.g., travel speeds, transit stations, etc.) and neighborhood demographics (e.g., vehicle ownership, income, poverty rates, etc.). We find that the inclusion of survey responses focused on community residents' needs enhances equity assessments compared to common quantitative data alone. Additionally, this project shows how public outreach and capacity-building with community leaders can assist in establishing improved and context-specific equity measures to inform transport policy.

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Key Words: Transit Equity, Public Participation, Transport Equity Assessment

FEAR AND RATINGS IN AUSTIN: A MULTI-FACTOR ANALYSIS OF BIASES IN RIDEHAILING
Abstract ID: 1191
Individual Paper Submission

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This work asks and answers the question: do residents of disadvantaged neighborhoods encounter biases when using ridehailing? Data from more than one and a half million ridehail trips in Austin, TX are used to find out. Using GIS, the origin and destination of each ridehail trip is overlaid onto census, EPA, land use, and other data. Inferences are made about the socioeconomic, demographic, and built environment characteristics of the home neighborhoods of ridehail travelers. It is demonstrated that ridehail users in neighborhoods with more non Whites, lower median income, more 18 to 34 year olds, and more carless households get rated 1-star (lowest rating) more frequently than riders in other neighborhoods. In turn, it is demonstrated that riders in these same neighborhoods rate their drivers 1-star more frequently than riders in other neighborhoods. These poor ratings are at least partially explained by examining trip characteristics, demographics, and socioeconomics at the neighborhoods scale. Those riders who are rated poorly made shorter trips, paid less in fares, tipped less frequently, and rated their driver lower than other riders, on average. Those drivers who are rated poorly took longer to arrive, had higher fares, and rated their riders lower than other drivers, on average. By all transport disadvantage measures but one, proportion of non Whites, riders in the most transport disadvantaged neighborhoods actually experienced shorter wait times. Riders in the most racially/ethnically diverse neighborhoods were more likely to experience the longest category of wait times, and least likely to experience the shortest category of wait times. It is argued that drivers may rate some riders poorly simply because they are reacting to incentives. Specifically that drivers prefer rides with higher fares, and may fear being rated poorly. It is further argued that some riders in neighborhoods with greater proportions of non Whites may rate their drivers poorly simply because they are reacting to inferior service in the form of longer wait times. Further, riders who spend a greater proportion of their income on ridehailing, especially those conducting functional trips, may express frustration through the only form of feedback offered by TNCs: driver ratings.

It is the author's belief that this is the first scholarly work to use rider and driver star ratings to demonstrate racial/ethnic and socioeconomic biases in ridehailing. This work provides more nuanced insights into discriminatory behavior beyond race and ethnicity by also analyzing associated trip characteristics. This work has implications for access to ridehailing for the transport disadvantaged.

Analyses presented are leveraged to propose two policies: First, a shift toward the reclassification of ridehail drivers to employee status, with stronger worker protections and a guaranteed wage. It is argued that the biases presented are a result of drivers responding to incentives. A shift in incentives would mean more equitable ridehail service for the transport disadvantaged. Second, a means tested subsidy for qualified ridehail trips. This second proposal would increase access to virtual car ownership while also increasing access to economic and social opportunity.

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Key Words: rider and driver star ratings, ridehail, equity, biases, sharing economy

INJURIES RELATED TO THE USE OF MICROMOBILITY VEHICLES AS INDICATED BY US NATIONAL EMERGENCY ROOM DATA
Abstract ID: 1220
Individual Paper Submission

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One of the most common concerns with the rise of micromobility vehicles for transportation has been safety. Media reports have described safety concerns as "alarming" and "an epidemic." This study explores micromobiity safety as indicated by US national emergency room data.

Some existing literature has looked at micromobility safety at the local level (Trivedi, et al., 2019; Austin Public Health, 2019). While local studies provide insight, one shortcoming has been unsurprisingly low sample sizes. Some literature has looked at larger national datasets, however these have mostly been in US medical literature (Namiri, et al., 2020, Di Maggio, et al., 2019). Such research has unsurprisingly centered on medical diagnoses, and their recommendations have tended to focus on personal protective equipment like helmets. These discussions are somewhat divorced from larger debates in the transportation policy realm over the relationship between helmets and safety outcomes, and the potential efficacy of other interventions. Thus, this study attempts to look at national data from a broader transportation policy perspective.

Specifically, this study examines patients/injuries seen at a sample of 100 hospitals from 2014-2018 recorded in the National Electronic Injury Surveillance System (NEISS). The NEISS codes basic information about patients and their injuries and provides a one sentence narrative from which additional insight can be drawn. Micromobility vehicles analyzed here include human-powered and motorized bicycles, scooters, and skateboards, as well as hoverboards, and Segways. Notably, this study looks only at injuries that occurred on streets and "other public property." Most past studies have not controlled for location, and thus likely include non-travel-related injuries, such as those taking place at home or parks.

Data here is reported in terms of the percent of cases where a given circumstance occurs. In other words, this study presents crosstabs of different circumstances across vehicle-types. Due to the absence of denominator data on the amount of travel on each type of vehicle, data cannot be presented in terms of exposure-based rates. While less than ideal, the presentation of percentage crosstabs attempts to normalize data between vehicles. Some studies have dwelled on total numbers of injuries, (unhelpfully) reflecting vehicle popularity rather than risk.

From the data, some findings that emerge include:

Most patients treated and released

The vast majority of patients seen at ERs are treated/examined and released. Notably, for both bicycles and motorized scooters, 14% of patients are admitted to the hospital. Motorized bicycles are a notable outlier at 29% admitted. For comparison, 6% percent of ER patients with motor vehicle crash injuries are admitted.

Head injuries similar between motorized scooters and bicycles (and cars)

Less than one-fifth of those injured on micromobility vehicles suffered head injuries (18% for motorized scooters and 19% for bicycles). These percentages are arguably low compared to cars. Albert and McCaig (2015) found that 21% of patients with motor vehicle crash injuries were given head CT scans, indicating the low bound for motor vehicle-related head injuries.

Motor vehicle exposure matters

Injuries involving a motor vehicle collision resulted in hospital admissions 0.5-5.5 times more often than with injuries without a vehicle collision. For motorized scooters, bicycles, and motorized bicycles, collisions occurred in 30-41% of injuries. Generally, more street riding correlated with more vehicle collisions, which correlated with greater hospital admissions. This points to the potential benefits of separate and protected infrastructure for micromobility users.

Injuries to non-riders relatively uncommon

Non-riders accounted for 3% of injuries involving motorized micromobility vehicles. Two-thirds of these non-rider injuries involved collisions with a micromobility vehicle. The other third involved micromobility vehicles as stationary/inanimate objects. For comparison, pedestrians and cyclists make up 5% of those injured in motor vehicle crashes.

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Key Words: Micromobility, Traffic safety, Scooters, Bicycles, Road injuries

THE AIR QUALITY IMPACT OF THE ALASKAN WAY VIADUCT DEMOLITION IN SEATTLE, WA
Abstract ID: 1222
Individual Paper Submission

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The Alaskan Way Viaduct, prior to its demolition in 2019, was one of the critical freeways passed through the core of Seattle. The 2.2-mile double deck State Freeway carried almost 100,000 daily traffic and connected the central city to the rest of the metropolitan area since its first phase development in 1953. Because the 2001 Nisqually earthquake damaged the freeway, the Viaduct was demolished and replaced by the two-tier tunnel recently in 2019. In this paper, we examine the impact on the air pollution before, during and after the demolition of the Viaduct.

The impact of air pollution from temporary traffic revisions were reported in the literature, such as Atlanta Olympic, NYC traffic exclusion, Beijing Olympic Games, LA carmageddon cases (Freeman et. al., Whitlow, et. al., Quiros, et. al., Wang, et. al., Hong et. al.) Meanwhile, the increased air pollution (NOx) from a new highway extension has been reported (Amin et al 2017). Most existing literature researched short term impacts of freeway revisions and closures on air pollution. However, the Viaduct demolition has long term consequences. Its demolition period was 10 months, and the viaduct was replaced with the surface road and a double deck tunnel carrying traffic north and south directions. The question is how much of air quality improvement occurred from the demolition of Alaskan Way Viaduct? We examine the concentration levels of Fine Particulate Matter (PM2.5), and Oxides of Nitrogen (NOx), with versus without the Viaduct operation. We obtained the data, from 2015 to 2019, from the Puget Sound Clean Air Agency, and compared the four-year average (2015-2018) pollution concentration levels with the Viaduct operation and the 2019 concentration levels without the Viaduct operation.

The PM 2.5 data retrieved from Duwamish (3 miles to the viaduct) and Beacon Hill (2.4 miles to the viaduct) fixed monitoring stations (FMS) suggests that during the demolition, monthly average PM 2.5 level dropped in most months compared to the same period in previous years, with a greater reduction at the Beacon Hill FMS (from 11% to 58%) than at the Duwamish FMS (from 5% to 59%). The NOx data retrieved from 10th and Weller FMS (0.75 mile from the viaduct) suggests a much lower concentration level of NOx during the demolition in the downtown area, with a reduction from 17% to 44% each month. Monitoring sites in Lynnwood and Tacoma, which are respectively outside the downtown area, do not show similar effects of PM 2.5 and NOx reduction. Kruskal-Wallis Test showing statistical significance of concentration reduction of NOx during the demolition and reduction for both pollutants are observed greater during the rush hour.

There are many freeways demolished in the US and elsewhere, but their air pollution impacts were overlooked. This study provides empirical evidence to support traffic reduction as a strategy for environmental benefits in the highway planning of other freeway removal projects under consideration in the US.

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Key Words: Air pollution, PM 2.5, Transportation, Highway

AN EXPLORATORY ANALYSIS OF EVENING AND NIGHT SHIFT WORKER COMMUTES, RESIDENTIAL LOCATION, AND ACTIVITY PARTICIPATION

Abstract ID: 1224
Individual Paper Submission

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Workers who start their shifts in the evening or overnight constitute roughly 12% of the workforce in the United States (Saenz, 2008), and 6% of the workforce in Canada (Williams, 2008). Preliminary analysis by public transit advocates suggests that a lack of transportation options makes it difficult for employers to retain night shift employees (APTA, 2019, p. 4). A lack of alternatives to the SOV commute is particularly problematic for this population, which experiences significantly higher injuries—including vehicle accidents—as a result of working nights (Horne and Reyner, 1999). These workers may face additional pressures with regard to residential location and life satisfaction, as louder daytime neighborhood noise levels, including from traffic, may adversely impact the health of shift workers who must sleep during the day (Muzet, 2007). Low income travelers and travelers of color are over-represented among evening and night shift workers (Saenz, 2008), further elevating the needs of these commuters as a transportation equity concern. Finally, these workers are significantly more likely to report dissatisfaction with work-life balance and role over-load (Williams, 2008), meaning these workers may face greater overall constraints in accessing and participating in daily life activities as a result of their schedules. Transportation systems play a significant role in enabling and constraining activity participation (Farber & Paez, 2009), yet the potential impacts of the transportation system on evening and night shift workers is unexplored.

This paper conducts an exploratory analysis of overnight and evening shift workers in select cities in the U.S. and Canada. We draw upon household travel survey, Census, and General Social Survey data from both countries to explore three questions:

1. What are the characteristics of the evening and night shift commutes, and how has this changed in the last 20 years?
2. Where do evening and night shift workers live within metropolitan areas, and what are the implications for providing effective transportation options to this workforce?
3. What impact does working an evening or night shift have on an individual's level of activity participation?

We answer the first question through a combination of summary statistics and significance tests (t-tests, chi-square). We address the second question by mapping the spatial distributions of night shift employment and night shift worker resident populations, along with tests of the spatial randomness of these values (Moran's I). We explore the third question through negative binomial logistic regressions, or count models, of activity participation among workers. This allows us to test for a significant association between the type of shift a worker possesses and the number of activities that worker participates in over the course of a typical day.

This analysis will assist planners and policymakers by providing a systematic overview of evening and night shift commutes. The results will also shed light on the impact of evening and night shift work on workers' activity participation, helping to identify when and where transportation systems enable or hinder this segment of the workforce.

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Key Words: night shift, activity participation, public transit, transportation planning, residential location

THE MYTH OF THE CAPTIVE TRANSIT RIDER: DO TRANSIT INVESTMENTS IN LOW-INCOME NEIGHBOURHOODS MATTER?
Abstract ID: 1236
Individual Paper Submission

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In the last three decades, transport studies have played a crucial role in revealing new forms of social, spatial, and economic inequalities. We know that mobility is essential to overcoming the spatial barriers to participating in the activities of everyday life. It follows that transportation systems act as the social and economic backbone of modern cities by expanding mobility options, increasing individuals' engagement and participation in activities, and providing access to resources that contribute to improving health, well-being, and quality of life. Accordingly, any difficulties, defects or deprivation in transport systems aggravate transport-related socio-spatial inequalities.

Despite the importance of transportation in the daily lives of low-income residents, regional transport planning has emphasized congestion-relief investments in commuter rail solutions that tend to benefit wealthier suburban residents. After all, if low-income residents are already "captive" transit riders, then transit investments in low-income areas may not result in appreciable benefits to the transportation system itself. On the other hand, recent research shows that transit improvements in low-income neighbourhoods may result in large increases in activity participation and long-term social inclusion, societal benefits that should be considered. Moreover, despite transit use being higher in low-income neighbourhoods, many low-income households own and use private automobiles, and there is a strong reason to suspect that low-income car drivers may be more sensitive to transit level-of-service improvements than their wealthier counterparts, since they can save a higher proportion of their income by dropping the use of their vehicles.

In light of this debate, the aim of this paper is to explore the myth of the captive transit rider, and examine sensitivities of transit mode use with respect to income, transit accessibility, and existing vehicle ownership levels in the Greater Toronto and Hamilton Area (GTHA). Our dataset encompasses the latest large-scale travel survey conducted in the region. We adopt a stratified Logistic Regression model for households with different income and car-ownership levels to examine the disparity in the probability of taking transit. To further explore the impact of transit accessibility on choosing public transit, we undertake a sensitivity analysis using the aforementioned models.

Our findings reveal heterogenous relationships between transit use and accessibility, across varying levels of income and car ownership. When low-income households own a car, they become significantly less inclined to take transit than high-income ones; in other words, they only purchase a private vehicle when they intend to use it frequently since such an asset takes up a considerable portion of their income. On the other hand, households with less than 0.5 cars per adult are up to 5 times more sensitive to transit accessibility; they are far more likely to shift their travel mode to transit as we improve accessibility.

Suburban residents have higher car-ownership, making them robust to any transit improvement. Our simulation suggests carless, low-income people benefit more from transit investments providing better accessibility for them. Unlike the previous studies, we do not entirely rely on the model's coefficients; instead, our simulator takes into consideration both the amount and the impact of transit accessibility for different strata.

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Key Words: transit equity, social inequality, accessibility, public transport

A-STAR AND GENETIC ALGORITHM-BASED OPTIMIZATION FOR COMPLETE STREET NETWORKS IN ATLANTA
Abstract ID: 1245
Individual Paper Submission

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Individual complete street segments may be complete, but their network is often not complete. Complete streets is a transportation policy and design approach aimed at transforming street right-of-ways to enable multiple modes of travel, including especially the active modes, such as walking and biking. While there has been substantial interest in adopting this policy, the progress in meeting all the "complete street" objectives have been limited. In particular, complete street implementation has been focused on street right-of-way design projects and less conscious of the role that a particular street plays in a network of travel modes. As a result, travelers find limited options for accessing destinations that are outside the limited coverage of complete streets.

This research investigates the design of complete networks, not just complete streets. The objective is to find optimal strategies for (1) connecting isolated complete street segments and (2) further building up the network to form complete networks that improve both active mobility and public transit ridership. In particular, this study focuses on bike networks since bike lanes improve the cycling infrastructure, which also accommodate the needs of e-scooters that are becoming popular in congested areas of the city. Bike lanes ensure the safety and comfort of pedestrians, e-scooter riders, and bicyclists while providing efficient first-mile and last-mile connectivity.

Using the city of Atlanta as a case study, we first rank all possible pairs of the existing bike routes in the order of their aggregate size adjusted for the estimated cost of connecting each pair. Second, using a modified A-star algorithm, all street segments connecting the top-ranked pair of bike routes are evaluated to select the best route that can (1) minimize the negative impact on traffic flow, (2) maximize the multimodal connectivity between active transportation and public transit, and (3) maximize the choice of

destinations and points of interests. These two steps are iterated to make the fragmented networks into one consolidated network. Even the network is completely connected from one end to another, however, it does not guarantee that it is well travelable from various directions within the network: there may still exist plenty of important missing links inside the network. Thus, using Genetic Algorithm, we further build up the network that meets the same three criteria defined in the previous step. The overarching objective is to arrive at a rigorous and empirically defensible process for establishing the optimal network of complete streets.

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Key Words: Complete Streets, Multimodal Connectivity, Network Analysis, A-star Algorithm, Genetic Algorithm

HOW ARE TRANSPORTATION NETWORK COMPANIES (TNCS) CHANGING PUBLIC TRANSIT?
Abstract ID: 1249
Individual Paper Submission

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Transportation network companies (TNCs) such as Uber and Lyft have rapidly gained popularity and have significantly disrupted urban mobility since their introduction. These app-based ride services aim to improve personal mobility by offering a new mode of travel to existing transportation system. Particularly, ride-sharing service such as UberPool and Lyft Line offers passengers lower prices than ride-hailing service by matching riders who are heading in the same direction and sharing the cost. Because of this feature, which is similar to public transit service, ride-sharing service is often viewed as a threat to public transit. However, little is known about whether TNCs are complementary or competitive to existing public transit service due to limited data availability. To fill these research gap, this study examines how TNCs influence on public transit using TNC trip dataset from the City of Chicago where transit ridership and fare revenues are declining while taxes on ride-hailing is increasing.

Our study of the impact of TNCs on public transit ridership follows three analytical steps. First, we classify all TNC trips into ride-hailing and ride-sharing and aggregate them to the census tract level. Second, we identify transit ridership at the census tract level and classify their mode to capture differing effects of TNCs on bus versus rail. Finally, we develop a series of time-lag regression models based on the type of TNC service (ride-hailing or ride-sharing) and the type of public transit service (bus or rail). The models use frequency of transit use and frequency of TNC trip as dependent variable and key predictor, respectively. Other explanatory variables include socio-economic and built environment attributes associated with trip origins. Our preliminary results indicate that the impacts of TNCs vary by mode of public transit. In sum, this study will contribute to a better understanding of the relationship

between TNCs and public transit and provide useful insights for transportation policy and planning in creating multimodal transportation that integrates TNCs and public transit to achieve sustainable mobility.

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Key Words: transportation network companies, ride-hailing, ride-sharing, public transit, urban mobility

HOW WALKING IS DRIVEN BY A SHARED SENSE OF COMMUNITY AND SOCIAL CAPITAL: EVIDENCE FROM A CASE STUDY ON ARBA'EEN
Abstract ID: 1254
Individual Paper Submission

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In recent times, there has been a surging interest in transportation planning surrounding active transportation—such as walking and cycling—due to their health and environmental benefits--while exploring which predictors best result in increased levels of active transportation.The major area of interest surrounding this research is the exploration of how the social emergence of "community" is connected to active transportation—specifically, walking. In traditional neighborhoods of the past, walkability was deemed as an essential aspect of how people accessed their destinations of work and marketplaces; however the situation today is quite different—the automobile era has shifted built environments to accommodate the private vehicle, and resulted in the pedestrian experience being cast aside (Southworth, 2005). In the process that pedestrianism and other forms of active transportation being replaced with auto-dominated cities, the vitality of street life diminished as well. Current notions of "walkability" and its functionality don't give enough consideration to the social aspects of "sense of community" and social capital that drives walking behavior, as much as to other factors such as residential self-selection of mixed-use neighborhoods or the built environment and neighborhood design (Handy et al, 2005). Southworth (2005) defines "walkability" as "the extent to which the built environment supports and encourages walking by providing for pedestrian comfort and safety, connecting people with varied destinations within a reasonable amount of time and effort, and offering visual interest in journeys throughout the network" (248). In addition to recognizing the importance of the built environment, the the social elements conducive to promoting walking behavior should be considered just as important as the physical and built environments.

An optimal opportunity to understand how the relationship unfolds between "sense of community" and "social capital" is in the context of the Arbaeen event—an annual foot-pilgrimage in Iraq that draws the largest annual gathering of people worldwide. This event draws millions of pilgrims from all over the world--spanning across various ages, nationalities, economic classes, and demographics.

The Arbaeen is a rich experience in which millions pilgrims walk varied distances based on their point of origin—many of them embark on the famous Najaf-to-Karblaa route along the Imam Husein highway (which is 425 miles, and an average of three days walking) (Husein 2017). The chance encounters, grass-roots and volunteer-driven provisions of food, shelter and medical service along this pilgrimage are emblematic of the culmination of a community, which is formed through the process of walking. This event provides a unique opportunity to discover the possibilities that can occur when considering how social capital and "sense of community" drive walking behavior—throughout the Arbaeen event, equity and diversity are on display as everyone is walking in unity regardless of who they are, what sociodemographic status they have, and where they're from.

Through a qualitative research based on interviews of attendees to the Arbaeen event, this study attempts to answer how walking behavior is driven by a "shared sense of community" and social capital in the context of Arbaeen? While previous studies attribute walking behavior to the built environment (Handy and Mokhtarian 2005), the context of this case study allows an opportunity to observe how social capital and "sense of community" drive walking behavior.

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Key Words: Active, Transportation, Walking, Community, Social

GIVING UP JOB SEARCH BECAUSE I DON'T HAVE A CAR: LABOR MARKET PARTICIPATION AND EMPLOYMENT STATUS AMONG SINGLE MOTHERS WITH AND WITHOUT CARS
Abstract ID: 1260
Individual Paper Submission

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Greater mobility enabled by a car is important in getting and maintaining jobs, but to what extent it affects labor market participation rate? This paper investigates Survey of Income and Program Participation 2008 panel data to explore both (1) labor market participation rate and (2) employment rate after they become labor force, in relation to car availability in the household. With logistic regression models, our analysis finds that availability of a car has positive associations both with labor market participation rate and employment rate, and the associations are particularly stronger for single mothers.

Single mothers are more likely to be labor force than mothers in couple-based households. In a couple-based households, traditional gender division of labor holds, and is stronger if they have children. Namely, women are lower in labor market participation rate than men, and having children makes women's labor market participation rate even lower while it makes labor market participation rate of men even higher. Single mothers are often responsible for both child caring and earning income, which makes the labor market participation rate higher than mothers in couple-based households.

Among single mothers, labor market participation rate of those who do not have a car is significantly lower than those who have a car. Moreover, employment outcomes of single mothers is also significantly lower for those who do not have a car than for those who have a car. Predicted probabilities of labor market participation for 30 year old single mothers are 67% for non-Hispanic Whites and 66% for Afro-Americans if they have a car, while the numbers drop to 48% and 47% respectively if they do not have a car. Predicted employment rates for those single mothers are 88% for non-Hispanic Whites and 82% for Afro-Americans if they have a car, and 75% and 64% for Afro-Americans if they do not have a car. Single mothers usually have multiple responsibilities and face severe special-temporal constraints. Greater mobility enabled by a car may increase time availability together with spatial reach, which may in turn, encourage them to become labor force.

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Key Words: Welfare to work, single mothers, labor force, employment, car availability

WITH A LITTLE HELP FROM THE BUILT ENVIRONMENT: BOOSTING E-SCOOTER SHARE USAGE IN MINORITY AND LOW-INCOME NEIGHBORHOODS IN WASHINGTON D.C.

Abstract ID: 1262
Individual Paper Submission

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Active travel like walking and biking can generate significant social benefits to our communities: it is healthy, sustainable, and cost-effective. However, active travel is closely related to the built environment: a mixed and human scale development supported with ample sidewalks, well-connected, lighted and designed streets would certainly help promote walking as protected bike lanes, signage, ample parking and other facilities would help promote biking. With cities across the country enthusiastically promoting active travel, especially through a wave of new shared micromobility (bikes, e-bikes, and e-scooters) programs, we observed a rapid growth of micromobility trips taken in the city streets (NACTO, 2019). While cities invest heavily in micromobility options in hopes that local residents can grow less dependent on car travel, they also run into risks of investing something less beneficial to the minority and low-income neighborhoods. The gaps in micromobility access and usage between affluent and disadvantaged populations are augmented by the differential qualities in built environment (Lee et al., 2017).

These gaps are where urban planners can address and contribute to a successful and equitable shared micromobility program. In this research, we are tying shared micromobility, equity, and built environment together using a novel data-driven approach. We collected real-time e-scooter trip data in Washington D.C. in 2019. The real-time trip data enable us to create e-scooter GPS trip trajectories, where we not only rely on a trip's origin and destination information but also generate the paths in between. Recently published work on e-scooter share, insightful as is, relies on conventional analyses of e-scooter trip origins and destinations (McKenzie, 2019; Younes, et al., 2020). The trip trajectory analysis in this research will look into the impact of street design and the built environment features along a street that can directly explain (a) why e-scooters are more heavily used in certain streets and locations, and (b) why e-scooters are less popular in some minority and low-income neighborhoods.

The analysis consists of two parts. The first part is a spatiotemporal regression that explains how different factors affect e-scooter trips in D.C. streets, including temporal factors (e.g. time of day and day of week), weather factors (e.g. temperature and precipitation), built environment factors (density, diversity, distance, and street design), sociodemographic factors, and operational factors (e.g. number of e-scooters and operational restrictions). The goal is to establish correlational relationship between e-scooter usage in the street and the underlying natural, social, and built environment. In particular, we pay attention to the

impact of streetway design features on e-scooter usage because these features can be improved through new design and construction. The second part is a machine-learning-based clustering analysis that will help us classify streets by e-scooter trip volume, built environment, and social environment. We expect to identify underrepresented neighborhoods for e-scooter usage that lack bike facilities and bikeways. These neighborhoods are typically populated with minority and low-income households. We argue that by building a favorable built environment for biking, we can potentially boost e-scooter usage in such neighborhoods and achieve an equitable shared micromobility future.

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Key Words: E-scooter Share, Equity, Biking, Built Environment

TRANSIT AND COMMUNITY ADVOCACY: UNPACKING THE ROLE(S) OF TRANSIT ACTIVISM IN BUILDING POLITICAL SUPPORT AND DISSEMINATING KNOWLEDGE
Abstract ID: 1265
Individual Paper Submission

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As transportation planning increasingly reaches agreement on what a sustainable transportation system looks like, research has begun to shift to understanding how to make transition to such a system, and what the planner's role is. An underexplored piece of the implementation puzzle is the role of transit advocates. Grengs (2002) and Weber (2017) looked the role of advocates in creating the window of opportunity for change, while McArthur (2019) explored advocates' role in crafting and sharing new expertise that challenged existing hegemony. This research takes those findings on advocates' role in building political support and disseminating knowledge and focuses on the advocates' role in interfacing and mediating between the agency and the community.

The research takes as its case a plan to redesign the bus network in the borough of Queens in New York City. The Better Buses Coalition, a tight group of transit advocacy organizations in the city, pushed the Metropolitan Transportation Authority to undertake the redesign to address the failings in the network, which had been losing ridership. The first draft, unveiled on New Years Eve 2019, has met with stiff resistance from current transit riders in Queens, despite the support from advocates. Using interviews, analysis of local media coverage, and participant observation in community meetings, this research seeks to untangle the agency's goals with respect to participation and political support and the goals of advocates and riders and understand how the participation process led to a situation in which riders' advocates were themselves opposed by riders.

The conceptual framework understands the agency to have two goals: a need for community input, to make sure the agency understands all the effects of the proposed changes; and a need for political support. The two are linked, in that the agency builds political support, at least partially, by mitigating negative impacts. The advocates' goal is to push for better transit, but also to hold agencies accountable and advocate for riders. The research finds that planners relied on advocates not only to be their allies in pushing for better transit but also as community representatives, even though the coalition was not embedded locally in the borough. By forgoing outreach to other local organizations, such as school

district boards, community boards, and neighborhood groups, the agency presented a plan that omitted key local knowledge about ridership patterns and came as a surprise to community leaders.

The policy recommendations for the research suggest that public meetings may provide more of an opportunity for advocates to pack a room than for agencies to receive meaningful information on the effects of the plan. Targeted outreach to local stakeholders may be a more informative method, and can also build public support for the plan. Advocates, even grassroots ones, can not take the place of other engagement, unless they actively seek to embed within the community.

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Key Words: bus network redesign, participation, community engagement, advocacy, implementation

THE ROLE OF PUBLIC BICYCLE-SHARING IN SUPPORTING PUBLIC TRANSPORT SYSTEM: A CASE STUDY IN KUNMING, CHINA
Abstract ID: 1267
Individual Paper Submission

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Public bicycle-sharing systems have been developed in many cities worldwide with increasing popularity. It not only provides a new convenient and sustainable mobility option to travelers abut also enables people to easily access public transportation systems such as the metro and bus. Such advantages promote the use of public transit for daily traveling and thus improve the accessibility of the whole urban public transit system. Therefore, a growing number of studies shed light on the effect of bicycle-sharing on transit use (Ma et al. 2015; Yang et al. 2018). However, there is limited research exploring the spatially varied effect of bicycle-sharing as an access mode for the first-last mile on the use of different public transit options (e.g., metro and bus), which is important for policy-makers and urban planners to make efficient public investments across the region for different types of transit services. It is also meaningful for them to take corresponding actions by understanding what factors are significantly associated with the connection between bicycle-sharing and public transit at different locations across the study region. This study aims to investigating these relationships by using the bicycle-sharing and public transit trip data in Kunming, China.

The daily trips by public transit (including both metro and bus) and bicycle-sharing are extracted from the data systems of the use of public transit smart cards and docking-station-based bicycle-sharing for the residents in Kunming, China in March 2019. We identify the purposes (last-mile or first-mile trip) of bicycle-sharing trips according to where the trip is located in the entire trip. Other datasets including point-of-interest (POI), daily weather, transit stop location, demographic data at the Traffic Analysis Zone (TAZ) level are collected accordingly. The geographically weighted regression (GWR) model which has been frequently used to capture local effect in travel behavior analysis and urban planning studies (Nowrouzian and Srinivasan 2013; Wang and Chen 2017) was conducted to examine how the temporal and spatial factors are associated with the connection between the use of publicly shared bicycles and

public transit. The preliminary results show that: (1) public bicycle-sharing has a more significant complementary relationship with metro than that with bus; (2) there is an obvious difference in the influence of using public bicycles on the use of urban metro and bus systems between workdays and weekends, and the influence of public bicycle-sharing on workdays is greater than that of weekends; (3) near the administrative and residential areas, the public bicycle-sharing system has the greatest impact on the use of metro and bus;(4) for the first-mile group, users of urban metro and bus are more dependent on the bicycle-sharing system. Other built environment variables will be incorporated into the model in the following analysis. This study provides a new perspective of understanding the relationship between bicycle-sharing and public transit with a focus on the local effects to help policy-makers and urban planners integrate bicycle-sharing as a more efficient and sustainable feeder mode into public transport system.

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Key Words: public bicycle-sharing, metro system, bus system, geographically weighted regression, spatiotemporal analysis

EXPLORING THE ADVANTAGES AND DISADVANTAGES DIFFERENT BUSINESS MODELS FOR THE PARTNERSHIPS BETWEEN TRANSIT AGENCIES AND TNCS TO SERVE THE NEEDS OF THE TRANSPORTATION DISADVANTAGED POPULATIONS
Abstract ID: 1275
Individual Paper Submission

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Transportation Network Companies (TNCs) and the ride-sourcing trips they provide largely enhance individual mobility and expand mode-choice options for many travelers in the cities. Their increasing popularity in urban life in relation to the change of transit ridership is a trending topic, and TNCs have developed partnership programs with transit agencies across the nation (Schwieterman, et al., 2018). These partnerships models vary in different places for certain pre-defined purposes. While first-mile/last-mile connection between transit and ride-sourcing is the most common type of partnerships implemented at many places, the TNC-engaged ADA paratransit program is making little progress so far after its successful debut in Greater Boston region (NASEM, 2019). This phenomenon is somehow in conflict with what the published reports concluded and what many transit planners were optimistic about – the great advantages of using TNCs in paratransit programs (Koffman, 2016, Minot, 2018). Two of the main benefits of using TNCs as a paratransit provider include reducing the trip cost significantly and lowering response time.

But is it really the case? The answer could be more than a one-sided story, or even getting much more

complicated. No public agency would be against such partnerships if these benefits come without any downsides, after all. This study is one of the first efforts in the literature to examine the advantages and disadvantages of different business models for the partnerships between transit agencies and TNCs, focusing on the potential to serve the needs of the transportation disadvantaged populations. We conducted semi-structured interviews with 18 public agencies in Florida, including transit agencies and human service agencies that purchase transportation services for their target groups. We also interviewed one TNC company, Lyft, about their practical experience of providing paratransit services and their partnership with transit agencies.

Based on the interviews and extensive review of published material, we compared traditional coordinated paratransit programs with TNC-provided ones from multiple perspectives. These include business models, public-private partnerships types, costs, risks, legislation, and support, By synthesizing documents and first-hand interview information, our study revealed the current status of traditional paratransit services and the advantages and disadvantages of TNC-provided transportation services for the transportation disadvantaged populations. Specifically, we found that the TNC-provided services have the following advantages: complementing conventional transit system in transit-scarce areas, improving job accessibility for the low-income, expanding travel choices based on individual needs, and enhancing flexibility and timeliness. The disadvantages of TNC-provided services include financial constraint, technology barriers, data sharing and privacy concerns, difficulties in service monitoring, and a lack of medically trained drivers.

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Key Words: TNCs, partnerships, paratransit, business models

QUANTIFYING TRANSPORT SUSTAINABILITY IN AN ERA OF ENHANCED TECHNOLOGY AND CLIMATE CHANGE
Abstract ID: 1280
Individual Paper Submission

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There is an energized global effort in pursuit of a sustainable future, including climate change, uneven development, financial constraints, and resource depletion. The United Nations has contributed significantly to this progress through the development of the 2030 Agenda for Sustainable Development. The agenda includes 17 Sustainable Development Goals (SDGs) and is structured to provide progress over the next 15 years. The call-in support of the SDGs to attain sustainability is embraced throughout the world. The United Nations global partnership links sustainable development, economics, social and environmental factors to goals and targets. Global concerns include the need to develop innovative approaches to the sustainable construction, operation, design and social impact of transportation systems (CH2M HILL & Good Company, 2009). The United States has been a reluctant participant in global data compilations on SDG performance, standing out as the only OECD nation to not have prepared nor

agreed to prepare a Voluntary National Report on SDG attainment. Nonetheless, many US states, cities, corporations, and NGOs have stepped forward in myriad ways to advance the SDGs and as of 2019, the USA ranks 35th of 162 countries on the SDG Index widely disseminated by the U.N. Sustainable Development Solutions Network (SDSN).

In this article, we focus on developing a better understanding of the recent trends and progress toward sustainable transportation through an analysis of the ten largest Metropolitan Statistical Areas (MSA's) in the United States. None of the most populous US MSAs are on track to broadly achieve the SDGs, yet some MSAs far outpace others with 47 MSAs making moderate to good progress on Goal 11: Sustainable Cities and Communities and 44 making moderate to good progress on Goal 9: Industry, Innovation, and Infrastructure. Transportation is a major driver of climate change and is a significant contributor to the sprawling towns, cities, and regions in the United States. Developing a more sustainable transport system faces many challenges including congestion, air pollution, global warming, reliance on petroleum, vehicular accidents and the negative impacts on the environment. A multimodal, diverse sustainable transportation system is critical if we are to achieve sustainable cities and regions. Recently, transportation agencies in the US have begun to develop processes and tools for collecting data on system interactions to support more effective investment decisions (Amekudzi et al., 2011).

We examine transport sustainability and indicators through a review of the literature (Ross et al., 2010). Next, we review the 2019 US Cities Sustainable Development Report to assess the recent transition and development of sustainability (Lynch et al., 2019). Then, we examine transport sustainability trends, develop indicators that correspond with SDG indicators, and evaluate the transport sustainability of the ten largest Metropolitan Statistical Areas (MSA's) in the United States. Lastly, a review of findings forms the basis for policy recommendations that are critical to the development of sustainable transport now and in the future.

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Key Words: Transport sustainability, UN Sustainable Development Goals, Sustainability indicator, 2030 Agenda

ASSESSING AUTONOMOUS VEHICLE ADOPTION POTENTIAL: IMPLICATIONS FOR REGIONAL TRANSPORTATION PLANNING
Abstract ID: 1285
Individual Paper Submission

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The development and adoption of Autonomous Vehicles (AVs) is advancing around the globe, presenting complex and far reaching implications for our cities. There is debate around the timelines for widespread AV adoption and polarizing perspectives on their potential impacts from utopian to dystopian extremes. The promise of the near elimination of auto related accidents/fatalities and congestion is contrasted with AVs undermining decades of effort to curtail urban sprawl and enhance public transit. The contrasts hinge on whether personal AVs (PAVs) or shared (SAVs) AVs become the norm. In either case, there is a need for municipal planners to better understand the AV implications for

their local context and accelerate their preparation (Freemark et al., 2019).

This paper addresses that need, presenting the development of a spatial index model to assess AV adoption potential at the sub-neighbourhood scale and demonstrate its application in support of regional transit planning. Key AV adoption index variable groupings identified in the literature include (1) the socioeconomic characteristics of individuals, (2) the travel characteristics of individuals, and (3) built form (Bansal and Kockelman ,2018). Drawing on the work of Laidlaw and Sweet (2017) in the Greater Toronto and Hamilton Area (GTHA), we develop a weighted spatial index for PAV and SAV adoption for the region built using Census of Canada data at the Census Tract level of detail. As a demonstration of the value of this index, we further conduct a spatial analysis of adoption potential within catchment areas of transit stations on GO (Regional transit system run by Metrolinx) commuter rail lines.

A number of important findings are realized. First, the areas in the GTHA with high PAV adoption potential are typically the wealthy inner suburbs, while the areas with low PAV adoption potential are often in the central business district (CBD). Most areas with high SAV adoption potential are in the central city (Toronto), whereas the areas with low SAV adoption potential are in the outer suburbs. These results confirm the contention that PAVs could contribute to urban sprawl whereas SAVs could be part of intensified urban landscapes. Areas within 4 and 7 km buffers of GO rail stations exhibit higher SAV adoption potential, and a lower PAV adoption potential contrasted with areas outside these zones. This finding suggests that it may be feasible to use SAVs to increase the relative accessibility of GO train stations as well as increase system ridership. However, the PAV and SAV adoption potential varies from line to line and from station to station depending on the local context.

The weighted spatial index approach provides a solid foundation and a valuable exploratory tool for planners to further their work in understanding the implications of AV technology and its adoption in their jurisdictions. The results of our transit station analysis reinforce the importance of understanding local spatial variability and context in developing plans and implementing responses to AVs.

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Key Words: Autonomous, Spatial, Transit, Automobile, Mobility

ANALYZING PUBLIC PERCEPTIONS TOWARDS SHARED E-SCOOTERS
Abstract ID: 1290
Individual Paper Submission

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Introduction:

Shifting people from car-oriented lifestyles to more active lifestyles has long been the dominant note of a vast majority of research in urban planning and public policy. Concrete evidence among the socio-

psychological literature suggests that, with disruptive changes in the context where the travelers make their decisions, a "window of opportunities" opens up for interrupting their habitual choice routines and changing their behavior (Müggenburg et al., 2015; Verplanken et al., 2008). Our results show that shared E-scooters could act as a suitable initiative for people to re-think their travel habits.

Empirical evidence shows that most of the car-based trips in the U.S. are short enough that can be alternatively performed by walking or using micro-mobility options (Zarif et al., 2019). Walking might not be a viable option more everyone for various physical limitations. Shared E-scooters could also be more attractive than ducked shared bikes, due to their flexibility in terms of pick-up and drop-off locations.

It is due to such promises that the shared E-scooter company Bird could expand its service to over 100 cities in just about three years, reaching a valuation of $2.5 billion. Although this new micro-mobility option shows promise, the general perceptions on shared E-scooters are still unclear. The present study scrutinizes the intentional dynamics of using shared E-scooters to uncover how users/non-users of the system perceive the usefulness of E-scooters. The output of our research provides insights into the potentials of E-scooters being diffused deep-enough into the urban travel behavior.

Data and methodology:

The City of Chicago launched a shared E-scooter pilot program encompassing the University of Illinois at Chicago (UIC) campus area, which started on Jun 15, 2019 and ended on Oct 15, 2019. We designed a Qualtrics online survey, and to this point, conducted two waives of data collection: (1) intercepting the users and handing to them the survey cards, and (2) intercepting general public in the area and asking them if they used the system before, and if they did, giving them the survey cards. These two phases yielded a sample size of 76 respondents. To further expand the sample size, a third phase is also to be run soon. Towards analyzing the data, this study sets out to estimate latent-class, discrete-choice models (as encouraged by, among others, Schmidt et al. (2019)) using the maximum-likelihood technique.

Preliminary results:

Our results show that sociodemographic variables, travel lifestyle, and individual attitudes are good predictors for whether someone uses E-scooters for fulfilling daily transportation needs, attending recreational activities, or around and having fun. Besides, our findings indicate a positive correlation between the use of public transit and the use of shared E-Scooters, suggesting that shared E-Scooters might be a preferred mode for the first mile-last mile part of transit trips. Also, we found that individuals who believe that they know more than others about latest technologies are more likely to enjoy their E-scooter rides.

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Key Words: E-scooters, Micro-mobility, Lifestyle, Chicago

SOCIAL MOBILITY IMPLICATIONS OF TRANSIT SYSTEM TYPES: DEVELOPMENT OF A MULTI-DESTINATION ACCESS TO OPPORTUNITY MEASURE
Abstract ID: 1291
Individual Paper Submission

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Cumulative opportunity accessibility analysis—simply, the count of destinations reachable from a given origin point by a given mode in a given amount of time—offers a powerful measure of transportation system performance by directly measuring what it is possible for users to achieve by traveling (Levinson & Krizek, 2005; Owen & Levinson, 2015). In practice, cumulative opportunity accessibility analysis requires researchers to consider access to a specified type of destinations. As a result, most existing accessibility analyses measure access to jobs, due both to the importance of access to employment in determining users' life outcomes and to the fact that most regularly visited, non-home destinations have some level of employment associated with them, allowing jobs to function as an approximation of activity in general (Fan, Yingling, Guthrie, & Levinson, 2012; Guthrie, A. & Fan, 2016).

In reality, of course, people need access to other destinations besides jobs (Grengs, 2015). This is especially the case with regard to generationally poor and/or long-term unemployed workers, who often require access to education, training and job search services to expand the number of jobs they are qualified for. As a result, for a significant number of disadvantaged individuals, we can conceptualize access to opportunity for bettering one's lot in life as accessibility to employment and education and workforce development services. Measuring access to opportunity from this perspective requires a different approach than the simple count of jobs reachable common in the cumulative opportunity approach.

To address this requirement, in this chapter we perform a multi-destination transit accessibility analysis to regionally significant employment centers, public colleges, universities and community colleges and workforce development service centers in six U.S. regions, as well as current, full proposed regional transit system buildout and three partial buildout scenarios for the Twin Cities. Specifically, we identify census block groups with access to at least one of each type of destination within 45 minutes of walk-ride transit travel. We present maps of results, as well as percentages of MSA population as a whole and broken down by race and income living in block groups with access to all destination types. We also estimate binary logistic regression models to explain the probability of a block group having access to all three destination types as a function of its distance from rail transit and downtown, residents' demographics and travel behavior and regional economic growth.

The results provide compelling evidence for a strong relationship between fixed-guideway transit investments and equitable access to opportunity. The difference in access between the two fast growth regions with regional rail systems and the one is particularly stark. The effect size found for proximity to rail transit also demonstrates the value of transitways in providing access to the destinations needed to prepare for, get and keep a good job.

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PROPOSING NEW STREET DESIGNS TO IMPROVE MOTORCYCLE SAFETY
Abstract ID: 1294
Individual Paper Submission

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Problem: While transportation safety has remained a heated topic for researchers, most of the researches and policies are focusing on four-wheel vehicles. Motorcycle crashes are normally examined together with four-wheel vehicles, while the nature of the motorcycle involved crashes are mostly different than four-wheel vehicles crashes.

Existing Research: The existing work in this area is mainly focused on examining the relationship between rider equipment, motorcycle characteristics and motorcycle-involved crashes (Mayhew & Simpson, 1989; Baughan et al., 2003; Teoh & Campbell, 2010). There is not enough effort to explore the relationship between built environment, especially street design and motorcycle safety.

Research Objective: This research aims to examine the relationship between built environment, particularly street designs and motorcycle crashes in Los Angeles, and propose new urban/street designs to improve the safety for motorcycle riders.

Methodology: Several datasets are used in the analysis, including the motorcycle related crash data in the state of California, Archived Traffic Data Management System (ADMS) in southern California, and other street design related datasets. ADMS fuses and analyzes a very large-scale and high-resolution (both spatial and temporal) traffic sensor data from different transportation authorities in Southern California. Linear and non-linear regressions are done to identify the contributing factors to motorcycle crashes.

Results & Contributions: Results of this research demonstrate that built environment factors have strong relations to motorcycle related accidents. Based on the findings, alternative street design aiming to improve motorcycle safety is proposed.

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Key Words: motorcycle safety, street design, geodesign

EQUITY IMPACT OF THE CENTRAL LINK LIGHT RAIL IN SEATTLE
Abstract ID: 1296
Individual Paper Submission

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Central Link Light Rail (CLLR, now a part of Red Line) is Seattle's first light rail system with approximately 14 miles and 14 stations connecting Angle Lake station near the Seattle International Airport to Westlake Station near Downtown. The CLLR opened in 2009. With Seattle's booming economy, the ridership has improved and the station area's characteristics have also changed

substantially. Large-scale transit infrastructure projects have great promise in impacting communities positively throughout the region, but also significant potential to displace and harm existing communities of low-income and minority residents. Despite these impacts, there has not yet been an equity analysis of the impacts of the CLLR. This study examines the equity impact of the CLLR between 2013 and 2017.

Our main research questions are the following: What have been the equity impacts of the CLLR? How have the demographics changed in the station areas? How does the quality of King County Metro bus service now compare to service before the operation of the CLLR? How have the areas around CLLR stations developed economically? We analyze the demographics, land use, bus service , and the changes to communities within a ¼ mile and ½ mile buffer from the CLLR stations areas (these radii were used by the Sound Transit's Final Environmental Report, 1999). We applied Lorenz curves, Gini coefficients, descriptive statistics and geospatial analyses. The major data sources are from Census Block Groups of the American Community Survey, King County Department of Assessment, and Metro King County. The results show that there are noteworthy demographic shifts of vulnerable populations and decreased prioritization of bus service in several South Seattle station areas. Conversely, Downtown station areas experienced the lion's share of benefits in bus service, land use changes, and retention of vulnerable communities.

In general, this research shows an inequitable outcome of the impact of the CLLR, especially around International District and South Seattle station areas. Communities with higher concentrations of people of color, lower education, and lower Gini coefficients had notable shifts towards whiter, more highly educated, and with greater inequitable income distributions than the other station areas along the alignment, as well as in the aggregate Seattle/Tukwila/SeaTac area. These findings suggest that there is a relationship between decreased representation of vulnerable communities within the International District and South Seattle Station Areas of the Central Link Light Rail. Downtown station areas have experienced swift changes. Several station areas experienced displacement of individuals over the age of 25 who had completed a high school degree or less. That demographic experienced the greatest displacement of all tested populations. All of the Downtown station areas experienced a loss of households with an annual median household income of $25,000 or less, suggesting a relationship between the implementation of light rail and displacement of low-income families in Downtown.

Metro's prioritization of service decreased in many South Seattle station areas and increased for the Downtown and Industrial station areas. This is an inequitable shift under Rawlsian principles, especially considering the concentration of disadvantaged populations in South Seattle station areas. Nearly all of the station areas increased in land value at a greater rate than the rest of City of Seattle. The closer to the station, the more appreciation occurred: the ¼ mile buffers experienced increased rates higher than that of their ½ mile counterparts. However, the opposite trend is found at the Tukwila International Boulevard and Airport/SeaTac station areas, where land value decreased by 15%-20%. The area has some of the highest rates of people of color, people without a college education, and greater proportions of low-income households.

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THE HIGH COST OF CAPTIVE TRANSPORTATION: TRAVEL TIME FOR CAPTIVE TRANSIT AND NONMOTORIZED TRIPS IN GEORGIA
Abstract ID: 1303
Individual Paper Submission

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Whether in money or in time, the poor pay more for lower-quality transportation. Low-income households that purchase an automobile often buy vehicles near the end of their useful lives, financed by high-interest auto loans (Karger 2003). Households or household members without access to a personal vehicle become captive users of the transit system or obligatory pedestrians and cyclists. As planners work to promote increased transit use, walking, and biking, among choice travelers, are captive travelers being left behind?

This study examines the time cost of being an obligatory transit user, pedestrian, or cyclist through analysis of the Georgia subsample of the 2017 National Household Travel Survey. We ask whether captive transit users, pedestrians, and cyclists pay a time penalty not just in comparison to auto travelers, but also in comparison to choice users of these modes.

We use linear regression to compare the travel time of captive transit trips, choice transit trips, and private auto trips. In a second model, we compare captive and choice nonmotorized trips. In our analysis, a captive transit or nonmotorized trip meets the following criteria: (1) The traveler is from a carless household or a vehicle-deficit household, where there are fewer vehicles than potential drivers (Blumenberg et al 2018) and (2) The household earns less than $50,000 per year. The income criteria differentiates people who are "car-free" by choice from those who are financially unable to afford vehicles for every driver in the household.

After controlling for trip distance, purpose, and demographic variables, we find that a captive transit user in Georgia pays a time penalty of thirty minutes per trip. Taking transit adds an average of ten minutes to a trip. On top of the fact that transit is slower than driving in general, captive users pay an extra time penalty of twenty minutes per trip as compared to choice riders. A traveler who makes two transit trips because she does not have access to an automobile can therefore expect to devote an extra hour of her day to transportation.

We do not find a similar captivity penalty for nonmotorized trips. However, this is largely because the plurality of choice walking and biking trips are for recreation or fitness. With recreation and fitness trips, the goal may be to maximize (rather than minimize) travel time. When recreational trips are excluded, captive pedestrians' and cyclists' trips are longer.

Our findings indicate that regardless of specific mode, lack of choice negatively affects travelers. Studies of how to encourage people to walk and bike more should be complemented by increased consideration of the needs of people who walk or bike precisely because they have no other choice. Obligatory walking and biking have been examined in the context of developing cities (Pendakur 2011), but have received less attention in industrialized countries. This study also empirically documents how captive transit users are receiving worse service not just in comparison to auto users, but also in comparison to choice transit users. By quantifying the size of the time penalty on captive transit users, we provide a way to measure the equity of transit systems.

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Key Words: transportation, equity, public transit, nonmotorized transportation

HOW DISRUPTIVE IS A DISRUPTION? THE ASSOCIATION BETWEEN TNCS' ENTRY AND VEHICLE OWNERSHIP IN INDONESIA
Abstract ID: 1305
Individual Paper Submission

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The advent, and subsequently prevalence, of Transportation Network Companies (TNCs) and their impact on a variety of outcomes have been of interest for planners, researchers, concerned citizens, and policy makers. Several studies, mostly from cases in the U.S., have attempted to estimate the impact of the TNCs on, for instances, congestion (Agarwal et al., 2019; Erhardt et al., 2019), vehicle ownership (Ward et al., 2019), vehicle miles traveled (Henao, 2017; Henao & Marshall, 2018), to name a few.

In this study, I extend the literature by analyzing the association between TNC entry and vehicle ownership using the case of Indonesia. Specifically, I use a time-series data (2013 – 2018) derived from the West Java province's Open Data initiative (https://data.jabarprov.go.id) to estimate the impact of Gojek's entry – a pioneer and leading TNC in the country – on vehicle ownership per capita. In doing so, I explore the variation of staggered Gojek's entry at the district level, which is somewhat equivalent to county in the U.S., and use Difference-in-Differences (DID) models to estimate the impact following the approach as applied in Ward et al. (2019) paper.

Results indicate that the entry of on-demand ridesourcing services is associated with the reduction in vehicle ownership per capita by approximately 1.45 percent, all else equal. This estimate appears considerably lower than the findings presented in Ward et al. (2019) study, which found the impact at 3 percent reduction in vehicle registration associated with TNCs' entry in the U.S. This lower estimated impact might be attributed to relatively noticeable vehicle ownership growth in rapidly urbanizing country like Indonesia. Further analysis also reveals that the impact is somewhat more pronounced on auto ownership per capita than on two-wheelers/motorcycle ownership per capita.

While this study could add to a growing literature on the TNCs impact, particularly from developing countries, this study would benefit from a more comprehensive standardized nationwide time-series data. The presence of such data would allow for a richer exploration within and across regions in the country.

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EVALUATING LIHTC: MODELING TRANSIT ACCESSIBILITY FOR AFFORDABLE HOUSING
Abstract ID: 1311
Individual Paper Submission

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Chicago has a history of leaving behind its most vulnerable populations of residents, especially in the realms of housing and transportation. The Low Income Housing Tax Credit (LIHTC) from the Department of Housing and Urban Development allows the federal government to incentivise affordable housing across the country (HUD, 2019). Many of these units serve populations that are often transit dependent (CMAP, 2018), posing the question: Do LIHTC units in Chicago have access to high frequency transit? To answer this question we draw upon three primary data sources of LIHTC properties, General Transit Feed Specification (GTFS), and Longitudinal Employer-Household Dynamics (LEHD) to assess LIHTC's transit accessibility to jobs accounting for both transit location and service quality. Using geospatial analysis, we assessed the spatial pattern of LIHTC units using hotspot analysis. Furthermore, we assessed the spatial pattern of LIHTC units and analyzed whether LIHTC hotspots are in areas with high-frequency transit service. Secondly, we narrowed down our focus from overall transit frequency in LIHTC hotspots to assessing transit access to jobs. We measured access to jobs by a gravity equation that accounts for distance and mode for all blocks in the City of Chicago. Ultimately, using this measure and logistic regression, we quantified the probability of a block to host a LIHTC property with respect to our measure of job access via transit. Access to reliable transit presents implications around access to jobs, education, and other resources (CMAP, 2018), but this study found that this could be a big concern for LIHTC residents in Chicago. Our spatial analysis showed that most LIHTC hotspots in the City of Chicago are not in the areas with high frequency transit options. Relative to other neighborhoods in the city, our logistic regression also confirms that LIHTC units could be significantly less likely to be in a neighborhood with strong job access via transit. Our findings call for a stronger local support for alignment of affordable housing and mobility justice programs in the City of Chicago.

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Key Words: accessibility, affordable housing, HUD, transit, frequency

TRANSPORTATION IN AN AGING SOCIETY: HOW DO OLDER ADULTS MEET THEIR TRANSPORTATION NEEDS AFTER STOP DRIVING?

Abstract ID: 1316
Individual Paper Submission

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Transportation mobility is a critical element of people's quality of life regardless of their age and health conditions. Not being able to drive often result in significant transportation mobility problems for older adults in many communities in the US where transportation alternatives do not exist. The 2017 National Household Travel Survey shows that 10 percent of older adults (aged 65+) who stated that they gave up driving altogether due to a medical condition, still drove. This may reflect the lack of transportation alternatives. However, physical and cognitive deteriorations associated with aging eventually result in driving cessation among older adults.

Using the 2017 National Household Travel Survey data, this paper analyzes how older adults who do not drive due to a medical condition fulfill their transportation needs and factors associated with different ways to meet the needs such as asking others for rides, giving up driving, and using special transit services. Through descriptive analysis and discrete choice modeling, this study investigates varying degrees of mobility among older adults who do not drive and analyzes various personal, household, transportation, and residential environmental factors that affect their travel behavior. Particular focuses will be given to older adults who are known as the transportation disadvantaged including women, minority populations, and those with low-income.

In an aging society, older adults live longer with more prolonged chronic medical conditions and impairment that affect their transportation mobility. This study will contribute to a better understanding of transportation issues associated with the growing number and proportion of older adults. Also, this study will provide insights into the development of non-driving transportation alternatives for older adults in an aging society.

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Key Words: Aging, Older driver, Medical condition, Transportation alternative

WAY TO RIDE: UNDERSTANDING THE BUILT ENVIRONMENT FOR ACCESSIBLE PUBLIC TRANSPORTATION TO PEOPLE WITH DISABILITIES
Abstract ID: 1323
Individual Paper Submission

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Transportation is vital to provide access to opportunities, goods, services, education, employment, and social interactions. While the majority of Americans rely on autos, low-income, minorities, and people with limited mobility are more dependent on public transportation. As the U.S. population ages, there are growing challenges of mobility and accessibility for older adults and people with disabilities. For an individual with a disability, Titles II and III of the Americans with Disabilities Act of 1990 (ADA) ensures nondiscriminatory transportation services. In spite of the significant mandates through regulation and efforts of transit services to meet the needs of all populations, there are some barriers that we need to address to extend transportation equity.

This study explores the extent to which built environment conditions feature in transportation decisions of persons with disabilities, as well as in planning and decision-making by transit agencies. The study focuses on Utah Transit Authority(UTA) Service area, mainly Salt Lake County and other counties in Wasatch front. Data has been collected through focus groups and key informant semi-structured interviews with UTA-eligible paratransit users, UTA staff members, a citizen advisory group (Committee on Accessible Transportation, CAT) and disability advocates.

Despite the importance of the quality of the built environment for transit accessibility, consideration of that environment by transit agencies is limited. Transit agencies have often relied on the technology and design of vehicles and on-board services as the primary method of providing accessibility to persons with disabilities. However, comprehensive accessibility—i.e., access to opportunities and life-services— cannot be achieved solely through those approaches. As the connective medium linking transit services and trip origins and destinations, the built environment plays a key role in achieving overall accessibility objectives for people with limited mobility. Addressing such linkages is, thus, central to extending transportation equity more fully to populations with disabilities.

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WHICH COMMUTER GROUPS ARE MOST SENSITIVE TO URBAN FORM TRANSFORMATION? FOCUSING ON US METROPOLITAN AREAS (2000-2016)
Abstract ID: 1328
Individual Paper Submission

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The association between urban form and commuting efficiency has been widely examined based on the notion that the level of polycentricity and the distribution of jobs and housings affect commuting patterns. Although it is widely accepted that urban form has a significant influence on commuting, previous studies have found contradicting empirical results (Ha et al., 2018; Hu et al., 2018; June, 2020). Some studies asserted that higher polycentricity and the decentralization of workplaces aggravate cross-commuting, further weakening the efficiency of commuting in terms of travel time and distance. On the other hand, some works showed that commuting behaviors are more efficient in polycentric urban forms due to rational location of workers and jobs. Given these conflicting points, this paper examines whether the changes in urban form would lead to changes in commuting efficiency. Moreover, we attempt to investigate the group of commuters which are most likely to modify their commuting efficiency according to urban form changes.

To measure commuting efficiency, we apply the excess commuting concept, which refers to the difference between the theoretical minimum commute and the actual commute (Hamilton, 1982). Here, the minimum commute is computed while constraining the location of jobs and workers by using the linear programming approach. Additionally, we conduct the linear programming analysis while dividing the commuters into groups by income, which further allows us to measure the minimum commute under the assumption that workers are eligible to change their workplace if it pays a similar amount of income. Followings are the detail research questions of this study. First, in a cross-sectional perspective, how has the association between urban form and commuting efficiency changed? Second, in a longitudinal perspective, do the changes in urban form indicators lead to changes in commuting efficiency? Finally, which group of commuters by income levels are the most sensitive to the changes in urban form?

First, we employ the Census Transportation Planning Package dataset for three time periods (2000, 2010, 2016). Based on the data, we measure the excess commuting indicators for 378 metropolitan statistical areas (MSA). Here, the MSAs are defined based on the MSA boundaries of 2016, and we excluded 11 MSAs that are located outside of the United States mainland. Second, we compute the urban form indicators for each MSA by using the spatial distribution of jobs and housings. In detail, we focus on the aspects of sprawl, polycentricity, jobs-housing dispersal, and the central city dominance. Third, we construct a linear regression model which can account the relationship between urban form changes and the changes in commuting efficiency. Here, we develop separate regression models by income levels to understand how policies related to urban form could finally result in better commuting efficiency.

Our results show that the excess commuting level has increased for high-income commuters compared to other groups. Also, the connection between urban form and commuting efficiency has got stronger in 2016 compared to 2000. Next, the regression results reveal that urban form changes significantly lead to changes in commuting efficiency levels. More in detail, the increase in polycentricity and jobs-housing dispersal levels were associated with higher tendency of cross-commuting. Most interestingly, these relationships differed by income groups. For instance, an increase in jobs-housing dispersal level, which indicates the decentralization of workplaces, were associated with better commuting efficiency for low and middle income commuters. On the other hand, high income commuters were likely to show cross commuting behavior when polycentricity levels increased. These findings imply that planners could enhance commuting efficiency levels by changing the spatial distribution of jobs and housings while

considering the income levels of commuters.

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Key Words: urban form, commuting efficiency, excess commuting, income groups, CTPP

THE ADOPTION OF RIDEHAILING IN THE BICYCLE CAPITAL OF AMERICA: A LONGITUDINAL PANEL STUDY
Abstract ID: 1329
Individual Paper Submission

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Emerging transportation services have transformed travel-related decisionmaking and travel behavior (e.g . Alemi et al. 2018; Alemi et al. 2019). Among the most rapidly increasing – and most debated – of the new transportation services is ridehailing, such as the services provided by Uber and Lyft. Many researchers have investigated factors associated with the use of ridehailing such as age (e.g. Circella et al. 2017), geography, sociodemographics, and attitudes (e.g. Alemi et al. 2018, Alemi et al. 2019), and trip purpose (Young and Farber 2019). In this study, we use a four-year longitudinal data set to examine factors associated with the adoption of ridehailing among a panel of students, faculty, and staff at the University of California, Davis between 2016 and 2020. We take advantage of the annual campus travel survey of the university population to gain insight about the familiarity with and adoption of ridehailing – as well as the frequency, purpose, and location of its use – over the four year study period. We explore the relationship between attitudes, residential location, and ridehailing use both cross-sectionally and longitudinally, using descriptive statistics and by estimating a panel statistical model. Further, we take advantage of the unique setting of Davis, California – deemed the "Bicycle Capital of America" because of its high share of bicycling and non-automobile modes (Buehler and Handy 2008; Lee 2019) – to investigate the adoption of ridehailing in a particularly multi-modal context.

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Key Words: Ridehailing, Travel behavior, Longitudinal

DRUNK DRIVING AND THE BUILT ENVIRONMENT - TOWARD TRAVEL SAFETY BY STUDYING CRASHES DATA FROM AUSTIN, TEXAS
Abstract ID: 1354
Individual Paper Submission

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According to NHTSA, in the United States 2019, one person dies in drunk driving crashes every 50 minutes. Unfortunate consequences of drunk driving crashes includes loss of life and severe injuries. Previously, traditional interventions for reducing and preventing drunk driving focused on changing individual behaviours, legal sanction and educational campaigns. Recent research suggests that transitional land use areas within a physical driving environment are an important consideration for drunk driving intervention (Negussie, 2018). However, empirical research on the relationship between the built environment and drunk driving crashes remains scant. As driving behaviours are affected by regional environment and physical context, drunk driving could be influenced by built environment as well. This paper investigates if there is a difference in the characteristic of drunk driving crashes that happened in urban, suburban or transitional areas. Secondly, are drunk driving crashes more likely to happen in single land use areas rather than mixed-used areas? Thirdly, do drunk driving crashes happen within a 5 or 10 mile buffer from an influential factor of the built environment? Finally, do public transit services reduce the frequency of drunk driving crashes?

Data acquired from the Texas Department of Transportation containing all collisions from 2012-2018 within Austin, Texas are used to study these research questions. We tend to study the spatial pattern of drunk driving crashes by using geospatial statistical models, and discover if there's a tendency of drunk driving crashes to cluster spatially. Taking into consideration the secondary cause of each crash described in the data, we aim to figure out if those causes are co-located, or just randomly distributed where drunk driving crashes happen through geographic weighted regression model(Brunsdon, 1998).

The selection of variables of the built environment are inspired by literature review. As the unit of analysis is each crash incident, socioeconomic characteristics are considered and calculated as place-based variables that're summarized per square area, and this is included as the 7th D, along with the other 5Ds(Density, Diversity, Design, Destination accessibility, Distance to transit) in the Travel and Built Environment theory (Ewing and Cervero, 2010).

We aim to understand if the built environment influences drunk driving crashes in its frequency and characteristics. Exploratory research could inform us on the locations where drunk driving crashes are more likely to occur, and variables in the built environment that could affect those crashes. The conclusion would provide planners and policy makers possible planning interventions on locations predicted by the built environment situation.

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Key Words: Drunk Driving, Travel Safety, Crash Characteristics, Built Environment

INCORPORATING RIDE-SOURCING SERVICE INTO ADA MOBILITY SERVICE: OPPORTUNITIES AND CHALLENGES FOR PUBLIC TRANSIT AGENCIES
Abstract ID: 1366
Individual Paper Submission

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The Americans with Disabilities Act (ADA) of 1990 obligates transit agencies to provide door-to-door paratransit service for riders who are unable to use buses, metros, and trolleys. The rising demand for paratransit services, however, poses many challenges on transit providers due to its high operational cost and increasing demand for enhanced quality of service. In response, a growing number of transit agencies are looking to incorporate new alternatives to deliver their service, including app-based ride-sourcing services. At the forefront of these efforts are a series of pilot projects that aim at forming partnerships with transit network companies (TNCs) as supplement providers (Fei and Chen 2015, Rodman and High 2018, Gonzales, Sipetas & Italiano, 2019).

To facilitate this form of partnership, researchers need to understand gaps within the existing service, as well as opportunities and challenges including efficiency and equity implications. This paper presents an empirical study on this important topic, which is undertaken by a team consisting of researchers from the University of Washington and planners working for King County Metro, Seattle region's primary transit agency. In preparing for a pilot program aimed to incorporate ride-sourcing services, the research team asks several key questions that need to be addressed: 1) Are there statistically significant associations between key characteristics of ADA trips (e.g. trip type and service requirement, trip length and cost, and locations of trip origin and destination) and the socioeconomic characteristics and the built environment of neighborhoods? 2) Which types of trips, customers or geographic areas should be considered while allocating trips between ride-sourcing services and transit agency's ADA paratransit service? And 3) What are the anticipated benefits and major roadblocks in diversifying the ADA paratransit services in this way?

This study uses detailed data of 2 million King County Metro Access trips in 2019 along with data from the American Community Survey 2013-2017. We first map the trips from Access program throughout 2019 on ArcMap to gain an understanding of distribution, frequency, and patterns of paratransit service. Trips are then classified by rider type according to the frequency of travel, distance of travel, type of disability and assistance. Regression models are then estimated to identify the associations between these trip characteristics and the socioeconomic and built environment characteristics of the neighborhood, such as household income, age and gender compositions, and racial compositions as indicated by the American Community Survey ACS data.

Preliminary results indicate that ride-sourcing can be a desirable alternative for certain types of paratransit trips, but not for others, such as those require large equipment and special services. Moreover, ride-sourcing services can better address some major equity issues, especially for less English proficient riders. Transit agencies need to carefully consider these pros and cons of these alternative services when designing the program. We envision an algorithm to allocate trips between different types of paratransit services to ensure cost reduction while taking into account passengers' different service needs, as well as

different locations and socioeconomic characteristics. These findings will not only help King County Metro to design its pilot program but also provide useful information to other transit agencies that plan to design multi-modal paratransit services in the era of shared mobility.

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Key Words: ADA paratransit service, Ride-sourcing, Cost savings, Social equity

ASSESSING THE EFFECTS OF INTEGRATING RIDE-SOURCING SERVICES WITH PUBLIC TRANSPORTATION
Abstract ID: 1371
Individual Paper Submission

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On-demand dynamic ride-sourcing that is operated by transportation network companies (TNC), such as Uber and Lyft, has emerged as an important urban travel mode. The question is what the potential impacts of TNC services on cities are (McCoy et al., 2018; Rayle et al., 2016). Some argue ride-sourcing service provides a sustainable travel mode and has the potential to reduce automobile ownership, while others argue that the significant growth of ride-sourcing leads to more congested cities and more vehicle miles traveled (VMT) (Rodier et al., 2016). Another major concern is whether the TNCs would compete or complement with the transit services. The literature has shown different results, that is, TNCs could complement, compete, and substitute for transit services (Wang and Ross, 2017), depending on different locations and the kinds of transit mode (e.g, buses or metro rail systems).

Nevertheless, some transit agencies have started to experiment some innovative approaches to integrate TNC with transit service. That is, transit agencies and TNCs work together to provide incentives for passengers to use TNC to address the transit's first- and last-mile issues.

Pinellas Suncoast Transit Authority (PSTA), FL has been the first transit agency in the United States to partner with TNCs since 2016. PSTA initially provide $3 incentive to take Uber or Lyft to commute to bus stops within Pinellas Park and the East Lake area, and then expanded the service area to the entire county and increased the incentive to $5 per trip in 2017.

We are conducting an empirical assessment to quantify the impacts of this Transit-TNC partnership that is sponsored by the Florida Department of Transportation. In this project, we aim to answer the following research questions:

1. What are the spatiotemporal characteristics of users who participated in the Transit-TNC partnership program? In particular, (1) What is the transit ridership change before/after the partnership across the service area? and (2) Did and to what extent the program enhance the mobility of residents in terms of average waiting time, expansion of service time and average costs and trip distance.

2. Whether the Transit-TNC partnership program in Pinellas County is cost-effective? Whether the current funding strategy is cost-effective and has achieved the original goals? and What are the alternative funding strategies to make the program sustainable?

Our research project started in August 2019 and is expected to be completed by September 2020, right before the ACSP conference. We have signed a data sharing agreement with Uber and designed user surveys, and expect to have completed results before September 2020.

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Key Words: transportation network companies (TNC), Transit, transit-TNC partnership, Travel Behavior, Cost-effectiveness

CAN TNCS ENHANCE MOBILITY PROGRAMS FOR OLDER ADULTS AND PEOPLE WITH DISABILITIES?
Abstract ID: 1406
Individual Paper Submission

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In many US cities, subsidized taxi programs provide rides for people who find the use of conventional transit difficult or impossible. Most programs serve people with disabilities, but some also support social and economic engagement by older people and those with low incomes without regard to disability. Payment for rides is typically made by the traveler using paper scrip or a special debit card. Recently, program sponsors – mostly cities and transit agencies –have expressed interest in utilizing transportation network company (TNC) services in addition to taxis. Including TNCs would increase the number of vehicles available, shorten response times, and potentially improve user satisfaction, but also raises questions about the match between program participants' capabilities and the services offered.

This paper identifies potential strengths and limitations of TNCs as an enhanced mobility mode for these programs. The study is based on a review of current programs as well as open-ended interviews with 30 transportation professionals, 80 subsidized taxi service users, 25 eligible non-users, and 25 caregivers. Among the service users and non-users interviewed, all had incomes below the regional median; 45 had a disability; 50 were over 65; 10% did not have a credit card or debit card; 20% did not have internet or a computer at home; and 40% did not have a smart phone.

Some taxi subsidy programs limit the number of rides, the distance allowed, or the destinations that can be served. For example, they will fund trips only within their own borders or within the county of the user's residence, restrictions that can prevent program participants from using the service for (e.g.) visiting a family member or consulting a doctor who is nearby, but outside the service area. This was a bigger issue for many of the users than access to TNCs.

All of the program users and caregivers had heard of TNCs but only half had used one and only 10 of the

service users interviewed had done so more than once or twice. A major barrier for those who had not used a TNC is the technology needed. Over half of the interviewees over age 60 had only a landline or a cell phone lacking "smart" features. Also, some of those who did have a smartphone only use it to phone people and do not text or use apps. The use of a credit or debit card for payment was a barrier primarily for low income older adults; among this group there also were concerns about how to keep track of what they had spent on the card, since many also lack a computer, internet service, or both.

Another barrier to TNC use among seniors and disabled persons was finding the right car. Those who had tried TNCs reported that it was hard to identify their ride. Caregivers for frail elders were concerned that their family member or client would need help to get home again, especially for trips where the timing of the return trip is uncertain so that a prearrangement doesn't not work well.

Concierge services (and many senior services) offer ways around the payment and phone issues but cannot fully resolve the car identification or return service issues.

The findings indicate that TNCs are a good option for some subsidized riders currently using taxis, but are not universally suitable. Taxis' bright colors and markings make them easier to identify and the ability to call a taxi using a landline or other limited-capability phone are desired features for a portion of the target population for these services. Others do value the access to TNCs, so a dual system may be the best strategy.

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Key Words: transportation network companies, older adults, people with disabilities, subsidized taxi services, paratransit

TRACK 15 – POSTER ABSTRACTS

RACEWAYS, REBATES, AND RETROFITS: AN EXPLORATION OF SEVERAL AMERICAN CITIES' POLICIES TO FACILITATE ELECTRIC VEHICLE PURCHASE AND USAGE
Abstract ID: 91
Poster

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The American auto industry is in the midst of a revolution in plug-in electric vehicle (PEV) technology. While market penetration of PEVs is still fairly modest at present, continuing advances in battery

materials and charging technology will arguably increase the number of PEVs in use going forward. Since PEVs require a unique charging infrastructure, the role of local governments in ensuring it is available to PEV users is critical. Many local governments have begun using their regulatory and economic powers to encourage PEV usage and to prepare homes and commercial buildings for the charging infrastructure necessary to support PEV-based transportation. While other studies have examined the technology of PEVs and their charging infrastructure, this study stands apart by investigating how large American cities have used the policy process to prepare themselves for broader PEV usage over the long term. The study centers on a questionnaire sent to policy leaders in the nation's largest cities, and investigates issues of building codes, city-utility relations, tax incentives for PEV users, and social equity. Responses were analyzed to develop an understanding of the most common and most influential policies that were perceived by respondents as having been the most effective at advancing PEV adoption and supportive infrastructure in recent years. Findings suggest cities are either not preparing for PEVs at all, or are preparing in a very substantive and tech-savvy manner. Policymakers also highlight key areas of needed focus, and also lay out ways in which regulators and electricity providers can aid in PEV adoption.

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Key Words: Plug-in Electric Vehicles, Transportation Policy, Electrification, Infrastructure, Incentives

THE EFFECT OF NEW TRANSIT STATIONS ON HOUSING AFFORDABILITY
Abstract ID: 200
Poster

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Housing affordability has become a pressing concern in the United States' largest cities, where lower income communities are increasingly vulnerable to displacement, as inner city neighborhoods rapidly price-out longtime residents and businesses. Coinciding with this trend has been a renewed interest in urban transit investment, especially in Los Angeles. Concerns, and occasionally loud opposition, have dogged the region's rail projects for decades. Typically the most visible opponents have been affluent homeowners fearing additional development and attraction of crime to their neighborhoods. In recent years, however, lower income neighborhoods have also increasingly mobilized to oppose new transit stations due to fears that they will spur gentrification and ultimately displacement (Hulchanski, 2006; Zuk et al, 2015).

The purpose of this research is to examine the effect of new transit developments on housing affordability. Using data from the American Community Survey, we will analyze the housing data for each of the census tracts that fall within the walk-shed of each of the ten Expo Line Phase 1 stations between 2010 and 2016. Los Angeles Metro defines the walk-shed of transit oriented communities as within one half mile of a station. There are 37 census tracts covered by the Expo Line, with all in the city

of Los Angeles except for one in Culver City. One reason we selected this rail project is that it was opened in 2012, recently enough to be affected by today's comparable economic conditions. The neighborhoods affected, such as West Adams, are generally lower income than the County median, and are perceived at an elevated risk for displacement by local activists. For purposes of research, we will combine all of these census tracts to form a single "study area" which we can then easily compare with city-, county-, and state-level data.

There are two key measurements that we will be tracking, spanning the years immediately before and after the Expo rail line opening. The first is of the distribution of monthly housing costs in each of the census tracts. We intend to track the figures for specifically renters, because the monthly housing costs of homeowners are not as exposed to market fluctuations as renters. The second indicator that we will be analyzing among these households is the proportion of monthly income spent on housing. This data allows us to determine how many of these households are spending more than 30% of their monthly income on housing, at which point they are "housing stressed" and considered vulnerable to displacement.

We compare the housing affordability data to that same information for the county, using that as our baseline from which we can determine how much of the change that takes place over those seven years (2010-2016) is aligned with regional fluctuation. We expect to see that during the seven years examined, the monthly housing costs for renters in each of these tracts will have increased at faster rates than the county. We also expect that because housing costs will have increased faster than wages for area residents that the proportion of housing stressed households spending over 30% of their income on housing will have increased relative to the county.

This research demonstrates the change in housing affordability that has occurred in Los Angeles neighborhoods as a result of the new transit station. Ensuring the economic diversity and housing security of Los Angeles' transit oriented communities is critical to the public support and future patronage of public transit projects. With this information, the research will inform the planning community of the unintended consequences of transit projects on housing affordability, and how to be better positioned to mitigate these issues.

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Key Words: Gentrification, transit oriented development, displacement, land use

WHERE IN GREATER TAIPEI DO COMMUTING MOTORCYCLISTS SHOW THE STRONGEST TENDENCY TOWARD THE PARK-AND-RIDE PRACTICE FOR MASS TRANSIT?
Abstract ID: 249
Poster

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More than half of the world's motorcycles in use are in Asia Pacific, and Taiwan is known for its extensive use of motorcycles in commuting. Although the use of motorcycles brings benefits, it also brings costs as well as negative externalities that could have adverse effects on health, equity and climate change mitigation. From 2007 to 2014, the average daily travel distance per motorcycle demonstrated a

general downward trend in Greater Taipei, the largest metropolitan region in Taiwan. Potential explanations of the downward trend include that some motorcyclists might have shifted to other modes, most likely the significantly expanding mass rapid transit system Taipei Metro, for the entirety of their commute trips, and some might have done so for part of the trips.

This study aims to understand the park-and-ride practice of the latter kind of motorcyclists by exploring one research question: Where in Greater Taipei do commuting motorcyclists show the strongest tendency toward the park-and-ride practice for mass transit?

The study is able to use three datasets: (1) The motorcycle ownership of every Traffic Analysis Zone (TAZ) in Taipei City and New Taipei City (year unknown); (2) The 2012 passenger entries at every Taipei Metro station; and (3) The actual number of motorcycles parked within the 200-meter circle of every Taipei Metro station during the peak hour in a day (mostly 8-9AM, with some variations by station), collected from 2009 to 2011.

The study identifies as its study area a total of 50 Taipei Metro stations, all of which are located on the suburban sections of 7 lines (R, O-northwest, O-southwest, BL, O-south, G, and BR) of the system; the study excludes 2 underserved stations and 3 late launched stations.

This study adopts 3 assumptions: (1) The Motorcyclist Hinterland Assumption, which assumes an 1,000-meter effective circle around a metro station within which commuting residents-motorcyclists would be willing to park and ride, as well as an 200-meter effective circle around a metro station within which the commuting motorcyclists would park; (2) The Intra-line Consistency Assumption, which predicts that although the 3 ratios between 3 values of each studied station (including the aggregated motorcycle ownership of TAZs assigned to each station's 1,000-meter circle, the daily average of passenger entries into each station in 2012, and the actual number of parked motorcycles, regardless of curbside/off-road and legal/illegal, within the 200-meter circle of each station during the peak hour in a day) may differ by station, the ratios for stations in the same area might be similar; and (3) The Outliers Assumption - Although the relationships between the 3 ratios would not vary greatly for stations in the same area, there might exist certain disruptive factors that lead to significant differences between the above-mentioned relationships of certain stations and others in the same area.

To test the assumptions, the study adopts a methodology composed of the following 4 steps: (1) Calculating the 3 ratios of each studied station; (2) Grouping the 50 stations into 7 groups by line; (3) Excluding those stations that turn out to be outliers in any of the 3 ratios by the 1.5 IQR rule; and (4) Calculating the Pearson product-moment correlation coefficient between the 3 ratios of each of the remaining stations.

Findings suggest that (1) 15 stations are excluded as outliers, as the Outliers Assumption predicts; and that (2) The BL-line group best aligns with the Intra-line Consistency Assumption, with the R-line group second to it. Directions for further study may involve explaining the "outlier" stations and the differences between the areas served by different metro lines.

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Key Words: motorcycle, park and ride, parking, Taipei, Taiwan

SOCIO-ECONOMIC CHARACTERISTICS AND LAND USE EFFECTS ON THE USE OF ALTERNATIVE TRANSPORTATION FOR OLDER PEOPLE
Abstract ID: 258
Poster

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As life expectancy and the number of older population increases, alternative transportation for older people is necessary. The deterioration of physical and cognitive abilities increases the risk of traffic accidents caused by older people and makes older people have a mind to stop driving. Public transportation and demand-response transportation provide services as an alternative to older people who stop driving. The travel behavior of older adults is formed by socio-economic characteristics. Moreover, since alternative transportation services are only available to people living in areas where the infrastructure and service of alternative transportation are provided, the land-use variables have a significant influence on the use of alternative transportation.

In order to confine what kind of socio-economic factors and location impacts on transportation mode choice for older adults, this study analyzed the 2017 National Household Travel Survey (NHTS) data which provide socio-economic characteristics and travel behavior. The dependent variable in this study was the dichotomous type about the use of the alternative transportation modes and estimated what kind of socio-economic and land use factors affect using public transportation by using logistic regression models. This study estimated the logistic regression model and rare events logistic regression model by using the NHTS overall respondent's data to identify factors affecting the use of alternative transportation modes in the United States. Both logistic regression models were estimated using data of older people over 65 years old, especially to understand the characteristics of alternative transportation mode choice for older adults and to find out how they are different compared to the entire respondents.

According to the results of this study, men used alternative transportation more, and people living in areas where rail existed used more alternative transportation in general. On the other hand, alternative transportation was less used as age increased, which was the same for older adults who are a high probability of losing their physical and cognitive ability. The results showed that the people who have a driver's license and retirees are less apt to take alternative transportation. In addition, this study represented that people are less likely to use alternative transportation as the annual household income increases compared to the low-income class. However, for people with more than $100,000 annual household income, they are more likely to use alternative transportation than the middle-income class since high-income class tends to reside in the railway influence area. As a result of using more alternative traffic in the case of people living in urban than those living in rural areas, it is essential to provide proper transportation infrastructure and services for people to use alternative transportation. In the rapidly aging society, such research is expected to help solve urban and transportation environment barriers for the older and contribute to ensuring the mobility and accessibility for older adults.

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Key Words: Older people, Alternative Transportation, Land Use, NHTS

ANALYZING THE EXTERNALITY OF BIKESHARE ON CONNECTING AFFORDABLE HOUSING UNITS WITH COMPACT TRANSIT SERVICES
Abstract ID: 392
Poster

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Currently, affordable housing units have become an important part of urban housing planning. Both Federal and local governments pay attention to provide more affordable housing for low-income populations. At the same time, transit-oriented development (TOD) has attracted more and more interest from local transit agencies. No matter from the federal level or local jurisdictions, affordable housing, and more equitable transit service are two of the main problems facing them. Federal Department of Housing and Urban Development (UDD) is pursuing housing programs to be better connected with transit services including bus, train, and subway. If these two problems can be solved at the same time, it will generate broad social benefits. As reported by Boarnet (2017), combing transit-oriented development (TOD) and building affordable housing can yields greater benefits in terms of both reduced driving and more affordable housing, than would a higher inclusionary percentage with smaller increases in density. Even though transit agencies in several cities have exchanged discounts on land cost for commitments to affordable housing based on anticipated higher transit usage, there exist the problems of combing TOD and affordable housing together. Welch (2013) finds that some of the current affordable housing programs have not fully achieved the intent of a smooth connection between affordable housing and public transportation. Besides, he provides policy suggestions that increasing the speed and frequency of transit lines to improve connections between affordable housing and suitable opportunities (e.g., employment) considering the currently fixed location of low-income population and housing units. Haughey & Sherriff (2011) state that very low-income households (30% or less of the area median income) have a greater need for compact public transportation services to connect them with job opportunities. These problems may be caused by the challenges facing them. Haughey & Sherriff (2011) point out that existing two main challenges now: expiring of current affordable housing programs and lack of enough incentives to attract house developers to provide cheap housing near transit stations and job centers. Besides, Nedwick & Burnett (2015) interview with housing agencies and transit policy experts to uncover extra challenges: the priority conflicting between locating LIHTC housing and transit access; and the high cost of developing transit-accessible sites. Based on current research, Dawkins & Moeckel (2016) suggest that affordability restrictions targeted at new housing constructed in TODs are effective tools for promoting housing affordability and improving low-income households' access to transit. Because of these challenges mentioned in traditional approaches to mitigate the barriers between affordable housing and compact transit services, this paper takes on the question of whether emerging micro-mobility (e.g., bikeshare) can help shorten the gap. Currently, bikeshare has shown great potential to improve accessibility particularly for disadvantaged populations (Qian and Niemeier 2019). If we still focus on these traditional approaches, the gap between affordable housing unites and compact transit

services may not be solved in a short term. However, micro-mobility, e.g., bikeshare can be implemented fast and connect there two components spatially since this service is targeted to the first/last-mile problem. Researchers have not thoroughly examined the potential of applying bikeshare to solve the problem, as mentioned earlier. Thus, we will take on the question of whether emerging micro-mobility (e.g., bikeshare) can help mitigate the barriers between affordable housing and compact transit services.

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Key Words: Affordable housing, Shared micro-mobility, Accessibility, Transit-oriented development

COMPARISON OF CROSSING BEHAVIORS OF PEDESTRIANS BETWEEN DAY- AND NIGHT-TIME: A VIRTUAL REALITY EXPERIMENT
Abstract ID: 531
Poster

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A majority of pedestrian-vehicle accidents occur at the unsignalized intersections, in which pedestrians' unsafe crossing behaviors are one of the main reasons. Pedestrians' crossing decision is based on various factors such as physical conditions of intersections, vehicle speed, and obstacles to their view. In particular, because of the limited vision at the night-time, pedestrians' failure of detecting oncoming vehicles could increase the possibility of pedestrian-vehicle accidents (Sullivan and Flannagan, 2002). While previous studies have focused on the car speed, intersection design, weather conditions, and built environments as risk factors for pedestrians' safety at intersections (Deb et al., 2017; Sun et al., 2015; Li and Fernie 2010), little is known about the differentiating risk factors between day- and night-time. Thus, this study aims to explore differences in crossing behaviors of pedestrians at the unsignalized intersections between day- and night-time with an emphasis on the pedestrians' responses to different car speeds under various intersection environment scenarios.

In order to compare crossing behaviors of pedestrians between day- and night-time, we utilize virtual reality (VR) to conduct experiments in a lab environment. VR environment for a stereotype of narrow mixed-use streets and unsignalized intersections in South Korea is developed. Then, eight different intersection environments with/without sidewalks, street parking, and street greenery are considered. Finally, we created thirty-two different scenarios with different vehicle speed limit (30km/h or 45km/h) and intersection environments for both day- and night-time. About 100 university students are recruited to

participate in the VR experiments, in which they should perform a mission crossing the intersection in VR environments. In order to provide a VR environment similar to that of an actual intersection, students who participated in the experiment perform their mission while actually walking with their head-mounted VR display in a 10 meter long lab. Participants' view is tracked using an eye tracker, and data such as crossing time and response time to approaching vehicles are collected. Also, participants conduct their subjective safety assessment for each scenario. Each student participates in about 8 to 10 randomly selected scenarios among a total of 32 scenarios. Lastly, data collected from the experiments are analyzed using various statistical methods such as t-test and ANOVA to compare the differences in crossing behaviors between day- and night-time.

The findings of this research could provide a better understanding of pedestrians' crossing behaviors between day- and night-time, thus suggesting design guidelines to improve pedestrian safety at night-time. Also, this study proposes the effectiveness of VR experiments for transportation planning research.

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Key Words: virtual reality, pedestrian safety, nighttime, crossing behavior

HOW RIDESOURCING RESHAPES ACCESSIBILITY
Abstract ID: 729
Poster

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App-based ridesourcing services such as Uber and Lyft have become an important transportation mode in many cities. These companies and their supporters claim ridesourcing can free people from car ownership and supplement public transit by providing first/last-mile solutions or serving in areas and hours with limited access to reliable transit services. However, little is known about whether and how ridesourcing affects people's accessibility (i.e., the ability to access opportunities), especially in areas of lower socioeconomic status and car ownership or underserved by public transit and traditional taxis. It is also unclear what factors are associated with ridesourcing accessibility and how ridesourcing accessibility varies spatially and temporally. More fundamentally, we need appropriate metrics to quantify ridesourcing accessibility. Concerns about the equality and effectiveness of ridesourcing regulations have been raised by the lack of empirical evidence.

In this study, we measure ridesourcing accessibility and explore how ridesourcing reshapes accessibility based on TNC trip data in Chicago, which are aggregated into census tracts. The primary research question for this study is whether ridesourcing improves accessibility, especially in lower income neighborhoods. This question can be divided into two sub-questions: (1) how does accessibility change in census tracts by demographic and socioeconomic status? (2) how does accessibility change in census tracts with different transit accessibility and traditional taxi accessibility? To address these questions, we first measure ridesourcing accessibility in each census tract based on the distribution of the trip

destinations. We use various approaches for accessibility measurements, such as cumulative opportunities and gravity functions. We calculate the indices of transit accessibility and taxi accessibility by census tract based on transit operation data and taxi trip data, respectively. Then, we compare the values and spatial patterns of accessibility across transportation modes. The differences between ridesourcing accessibility and transit/taxi accessibility by census tract are regressed on demographic, socioeconomic, and built environment variables. To account for spatial autocorrelation that may exist among census tracts in the city, we use a spatial autoregressive (SAR) model in the analysis.

The results of the analysis illustrate how ridesourcing serves different urban areas and reshapes accessibility of a city. The study also reveals the factors associated with the degree of changes in accessibility caused by ridesourcing services. The findings have implications for future accessibility planning and ridesourcing regulations, especially for improving the accessibility of traditionally marginalized and underserved neighborhoods, where minorities and populations with lower socioeconomic status are usually concentrated.

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Key Words: Ridesourcing, accessibility, equity, transit

RIDEHAIL TRAVEL BY SUPER USERS
Abstract ID: 1196
Poster

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Is there a difference in neighborhood socioeconomic and demographic characteristics between the casual, infrequent ridehail user and the super user? Is there a difference in ridehail travel behavior? Data from more than one and a half million ridehail trips in Austin, TX are used to find out. Using GIS, rides are overlaid onto land use, census, and transit data to infer who these super users may be and where they may be going. This work shows that the time of greatest demand from super users was Wednesday during the 9:00 a.m. hour, compared to Saturday during the 11:00 p.m. hour for infrequent ridehail users - possibly suggesting a work commute. It is demonstrated that although about 20% of all users were in Hispanic/Latino neighborhoods, they made up about 30% of super users. Super users also disproportionately came from neighborhoods with low income, the greatest share of carless households, and the greatest share of 18 to 34 year olds. This work shows that super users made more ridehail trips to school, government services/hospitals, and industrial zones. Further, super users take shorter trips, pay less in fares, experience fewer surges, tip their drivers less frequently, and live in less dense neighborhoods with less transit service than normal users. This 0.54% of riders took greater than 10% of all trips. So while they may be few, super users account for a significant share of all ridehail trips, and are those the most sensitive to surge pricing, fluctuations in fares, and wait times. Evidence presented is leveraged to propose a policy shift toward a means tested subsidy for qualifying ridehail trips.

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Key Words: ridehail, super users, equity, travel behavior, hispanic and Latino

AN EMPIRICAL BAYES APPROACH TO QUANTIFYING THE IMPACT OF TRANSPORTATION NETWORK COMPANIES (TNCS) ON VMT
Abstract ID: 1233
Poster

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Assessing the impacts of new disruptive technologies on automobile usage and modal split is emerging as a key issue for transportation planners and policymakers. Since their introduction, ridesharing services have rapidly gained strong foothold and have reshaped urban transportation systems. Unfortunately, existing research has produced conflicting results on the effects of these disruptive technologies on urban transportation system due to limited data availability (Henao & Marshall, 2019; Rodier & Smith, 2016). This study offers an innovative approach to quantify the impact of transportation network companies (TNCs) such as Uber and Lyft on vehicle-miles traveled (VMT) using an Empirical Bayesian (EB) method. The EB approach is based on a simple idea from counterfactual theory, which compares VMT estimates after the introduction of TNCs in a region to what the VMT would have been without the TNCs. The latter of the two is the counterfactual and therefore more difficult to estimate. The study develops and demonstrates the EB measurement model for estimating counterfactual VMT estimates.

The EB method is widely used for traffic safety assessment purposes. The proposed approach for estimating VMT changes is analogous to a quasi-experimental EB procedure used to estimate crash reduction if a particular traffic safety treatment is applied to a roadway location. In this study, we reinterpret the traffic safety treatment as being akin to the introduction of TNCs and the estimation of crash reduction as analogous to the resulting change in VMT. This study develops an EB measurement model for the VMT in the Atlanta region as a proof-of-concept. Counterfactual VMT estimate is obtained by combining two VMT estimates from 1) cross-sectional model that derives estimates using data from Atlanta and its comparative peer regions and 2) time-series model based on longitudinal data from the Atlanta region. We measure the difference between the counterfactual VMT estimate and the current VMT estimate as an indicator of TNC impact. We find that the VMT estimates in the counterfactual scenario are lower than the current VMT estimates over the period between 2012 and 2017 and that the counterfactual VMT estimates show a lower average annual growth rate compared to the current VMT estimates over the same period. The proposed approach provides a better understanding of the impact of emerging technologies on VMT and will equip local and regional agencies to craft policy responses that yield the most benefits for the communities. Also, the proposed approach can be useful in other researches estimating the effects of the introduction of connected and automated vehicles (CAV) on VMT in the future.

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Key Words: transportation network companies, VMT, empirical bayesian, counterfactual theory

UBER ACCESSIBILITY SERVICES IN PORTLAND, OREGON: VARIABILITY IN ACCESS AND RELATIONSHIPS TO SOCIO-DEMOGRAPHICS
Abstract ID: 1258
Poster

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Ride hailing service providers have expanded rapidly in recent years, but accessibility for seniors and people with disabilities has been an ongoing issue. Uber launched the UberASSIST service in Portland, Oregon in July 2015, which is a vehicle option that offers additional assistance to seniors and people with physical disability. According to Uber, UberASSIST drivers are specifically trained to assist riders into the vehicles and can accommodate folding wheelchairs, walkers, and scooters. Uber then launched UberWAV in September 2015, which are wheelchair accessible vehicles equipped with a rear-entry ramp, winch and restraints.

The objective of this study is to examine the availability of Uber's accessible services, in comparison to the standard UberX service, including temporal and spatial variability and relationships with socio-demographic variables. Application Programming Interface (API) data were collected for six months at 72 gridded locations in Portland, Oregon in 2018. Probability of Service Availability (PSA) and Estimated Time of Arrival (ETA) are calculated availability measures used for evaluation in this study. The spatial and temporal variation of PSA and ETA for accessible services are investigated and compared to the PSA and ETA of UberX. The difference between availability of Uber services are then regressed over sociodemographic variables (income, race, population, and employment density) while controlling for spatial error correlation to investigate systematic patterns in access by neighborhood.

Results indicate large disparities in availability between the accessible and standard Uber services. PSA of UberX is consistently over 95% at all locations, while PSA for the other services reaches as low as 30% and varies substantially by time and day. Average ETA for UberWAV and UberASSIST are 3.4 and 1.6 times higher than for UberX, respectively, again with greater temporal and spatial variability. Significant spatial relationships are observed with sociodemographic variables, including greater availability of accessible services in neighborhoods with a higher percent of population with a physical disability. Systematic differences in price patterns among the services are observed as well. The findings in this study help to illuminate patterns in the availability of Uber's accessible services, and general understanding of ride hailing accessibility based on empirical data. Policy recommendations are provided for cities seeking to enhance access to the potential mobility benefits of ride hailing services.

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Key Words: accessibility, ride hailing, Uber, wait time

SHIFTING COMMUTE PATTERNS, AND IMPLICATIONS FOR PHYSICAL ACTIVITY, OF QUEEN'S UNIVERSITY EMPLOYEES: A LONGITUDINAL STUDY, 2013-2017
Abstract ID: 1333
Poster

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It is well established that active commuting is beneficial to health (1), and as it offers critical opportunities to meet recommended daily physical activity levels. However, active commuting for the entire journey to work is challenging for large segments of North American population who live beyond what might be considered an active commuting range. What is promising, however, is the growing body of evidence demonstrating that even regular transit riders accrue more daily physical activity when compared to people that commute entirely passively (2-3). Investments in higher order transit services (such as light rail) have also been shown to spur reductions in automobile use among new riders, while stimulating increased physical activity among continuing riders. Thus, investing in public transit service is a critical public health intervention (4).

In 2013, the city of Kingston Ontario introduced the first of four express public transit routes; the remaining routes were introduced in 2015 and 2017. This adoption of a high frequency spine-based express service represented a radical departure from the ways in which public transit was previously delivered in the city. To understand the effects of these interventions on commute patterns in Kingston, this study was guided by the following objectives: 1) to establish whether there was a change in commute patterns in Kingston; 2) to document the characteristics of commuters who shifted to transit after the introduction of express service; and 3) to assess the physical activity implications of those who changed their commute mode since 2013. This study involved an online survey of a large employee group in Kingston (i.e., Queen's University employees) every year from 2013 to 2017, inclusive. Response rates ranged from 36% to 48%, with a total of 4,049 unique respondents over the five years, and 2,487 repeat respondents.

Overall, the study found that passive commuting declined over time, but persisted as the most common commute mode for all 5 years. More than 60% of individuals who became year-round transit riders were using passive or somewhat passive modes prior to shift, and reported higher commute satisfaction after their shift. Passive commuters have higher rates of car ownership and children under 14 in the household, as compared to active and transit commuters. Among shifters, 92% were female, 88% live between 3-20kms from work, 54% have household incomes below $90,000, and 56% own just one vehicle. Results from the physical activity analyses are forthcoming.

The findings offer numerous insights in terms of implications for the employer (Queen's University), and for Kingston Transit. Options for Queen's including provision of more flexible day-parking options for employees who only occasionally need to drive and park on-campus; allowing employees to suspend their on-campus parking permit to enable them a trial period of commuting by public transit; and hosting more transit pass sign-up events in prominent locations on campus. Options for Kingston Transit include introducing transit/high-occupancy vehicle lanes on multi-lane corridors during peak travel times; and increasing the number of park-and-ride facilities to entice more rural dwellers to shift to transit to reduce

the number of automobiles coming into the city's urban core.

Investing in public transit offers a multitude of benefits: reduced traffic congestion and travel times; reduced greenhouse gas emissions; and increased physical activity for riders. Despite these benefits, there are very few longitudinal studies on the impacts of public transit improvements. The findings from this study offer novel insights for active transportation and public transit scholars, as well as important lessons for policy-makers working in the field of transportation planning.

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Key Words: public transit, physical activity, longitudinal study, Kingston, Ontario

TRACK 16 – URBAN DESIGN

TRACK 16 – PRE-ORGANIZED SESSION SUMMARIES AND ABSTRACTS FOR THE SESSIONS

JUST URBAN DESIGN: THE STRUGGLE FOR A PUBLIC CITY
Pre-Organized Session 3 - Summary
Session Includes 16, 17, 18, 19, 20

LOUKAITOU-SIDERIS, Anastasia [University of California, Los Angeles] sideris@ucla.edu, organizer

Cities are often perceived as progressive beacons, spaces of diversity and inclusion. However, cities are also held captive to economic development pressures that exacerbate inequalities through privatization, gentrification, and displacement. At stake is the notion of the city as a public sphere, in which all residents can make political and spatial claims. The broad focus of this session is the public city and its struggles. In particular the session will examine the role of urban design and spatial interventions in delineating conflicts over what constitutes public(s) in cities, and pose ideas or alternatives--what John Friedmann called "guiding, normative images" of the "good city." We are asking: What makes a public city? Who is it for? How is it made? What is the role of urban design? What is "just urban design"? Authors of papers in this session will discuss one or more of the following themes: 1) concepts of inclusive urbanism-participation, access, and inclusion in public spaces; 2) conflict around urban development, gentrification, and displacement; 3) participation and organizing for just urban design; 4) urban design for underprivileged groups.

Objectives:

- concepts of urban design that are central in the consideration of justice in cities

WHOSE CITY? THE NEHEMIAH INITIATIVE PUSHES BACK ON SEATTLE
Abstract ID: 16
Abstract within Pre-Organized Session 3

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A public city is one in which communities are not only able to participate in the life of the city; it means that they get to make decisions about how their built environments evolve. Seattle has seen tremendous growth and change. Many local communities have felt the pressure of gentrification and the pain of displacement. Seattle's Central District, the city's historically-black community, is at the forefront of these changes. Its historic building stock, walkable neighborhoods, and adjacency to downtown have made it irresistible. Over 80 percent black just 20 years ago, it is now a predominantly white community with less than 10 percent black residents.

While many bemoan the financial and social pressures that have created this new diaspora, a coalition of historically black churches and their leaders--the Nehemiah Initiative (NI)--formed in fall 2018 to address the need for affordable commercial and residential space in the Central District. Local pastors and deacons recognize that their congregations are changing and while they know that they may not be cash-rich, they hold significant real estate assets in one of the most desirable areas of the city. They believe the assets can be put to good use to retain, attract, and possibly return new and former residents and businesses.

This chapter interrogates the ongoing work of the NI. It names and investigates a just design movement that is underway in Seattle; this movement counters the idea of the city as a crucible of development, gentrification, and displacement. I also explore the growing impact of Seattle's Equitable Development Initiative and new partnerships among the city, NI, and UW's College of Built Environments. Their combined purpose supports redistributive justice, better design and development outcomes for a historically-significant and unprotected community, and the training of future urban design professionals.

Just design is design work pursued through a lens of justice and equity. Just design in the context of the public city is about who gets to show up and exercise control over built environment decisions. Through NI's formation, the churches are taking on the role of community designer and developer. In creating the future "good city," it is vital that we disrupt "guiding, normative images" (Friedmann 2000).

The Nehemiah Initiative is confronting and countering decades of institutionalized racism in the Central District, including restrictive covenants and redlining. Where these tactics have left individual homeowners and residents to make decisions in a vacuum, NI brings to the fore the promise of collective action and transformative design. NI supports the Central District in making political and spatial claims by asserting their right to develop according to their vision. This will allow the community to extend invitations to use its spaces and to shape the imagined publics that are meant to be there. Just design expands the invitation to city and shifts the imaginary of who the city is for.

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Key Words: Asset-based, Community, Displacement, Just design, Seattle

RETHINKING URBAN PUBLICS THROUGH THE LENS OF SOVEREIGNTY: MATERIAL AND POLITICAL ASSEMBLAGES OF INCLUSIVE URBANISM
Abstract ID: 17
Abstract within Pre-Organized Session 3

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Concerns with the presence or absence of toleration, publicity, and inclusive justice at the scale of the city frequently begin from a preoccupation with citizenship. A just and inclusive city is a place where all residents have equal citizenship and shared "rights" to the city. This paper builds on these sentiments, but approaches questions of publicity and equal rights through the lens of sovereignty, a term understood as a conceptual "partner" to citizenship. Although much of the literature on sovereignty assumes that this concept refers primarily to the nation-state, I argue that such presumptions are misguided, and that in fact there exists considerable historical, analytical, and theoretical evidence for focusing on sovereignty at the urban scale. By taking Benedict Anderson's (1983) seminal concept of "imagined communities" as the entry point for conceiving of a scaled-down sovereignty, and juxtaposing his insights with recent work by Amin and Thrift (2016) as well as Magnusson (2011) on the progressive politics of urbanism that comes from "seeing like a city" rather than a state, I seek to offer a new analytical entry point for understanding the material conditions under which we see coexistence and inclusion as opposed to conflict and exclusion among communities of difference. I ask whether and how urban sovereignty can map onto city

spaces in ways that both strengthens the urban public sphere and produces a shared political community of allegiances capable of pushing back against egregious forms of intolerance and exclusion.

The paper begins by identifying the ways in which cities are charting new sovereignty relations that transcend the constraints of the nation-state, often in response to major challenges affecting their residents such as climate change, refugee influxes, and unemployment. I then place these trends in historical context, providing an overview of the comparative and historical literature on cities and sovereignty that shows how citizenship and governance at the scale of the city have produced more inclusive urban conditions. The next section returns to the present. It identifies which urban planning and design strategies or interventions would most (or least) guarantee socio-spatial inclusion or a shared public sphere. It then asks whether such conditions have been more or less likely to unfold when governance decisions are made locally as opposed to nationally, drawing on several examples from "conflict cities" where intractable struggles over nationalist identity often constrain efforts to create an inclusive public where all residents might feel they have a shared right to the city. The paper ends with a call for re-conceptualizing "urbanism" as a political aspiration to be juxtaposed against nationalism, thereby placing the design and planning professions' commitment to building inclusive cities at the forefront of contemporary political discourse and progressive urban politics.

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Key Words: citizenship, sovereignty, inclusion, conflict, governance

DESIGNING JUST RESILIENCE? INNOVATION AND DISCONTENT IN POST-HURRICANE SANDY NEW YORK
Abstract ID: 18
Abstract within Pre-Organized Session 3

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Hurricane Sandy hit the New York region in late 2012. In its wake, one prominent program for recovery and rebuilding was Rebuild By Design, a competition tasked with finding solutions to stronger storms and sea level rise. Launched by the Hurricane Sandy Rebuilding Task Force in June 2013, the competition garnered design proposals from ten designer-led multidisciplinary teams. A year later, six winning proposals were announced, each awarded between $20 million and $335 million in federal block grants for implementation. Rebuild By Design was hailed for its innovation, combining private philanthropy, public agencies, research and design, global and local partnerships, and a stakeholder-oriented participatory process in a climate change response initiative with federal government oversight.

Rebuild By Design is part of emerging initiatives around urban resilience, often understood as the ability of cities to adapt to the environmental and socioeconomic impacts of climate change. But resilience is contested. The concept of urban resilience is celebrated as a positive characteristic of people and places to "bounce back" from shocks and stresses, exemplified by former Rockefeller Foundation president Judith Rodin's book *The Resilience Dividend* (2014). But it has been challenged for its vagueness (Vale 2015)

and the ways in which the concept can be used to promote and protect unjust status quo socioeconomic systems (Davoudi et al. 2019). While researchers and practitioners have asserted that design plays a role in urban resilience (Pickett et al. 2013) it remains unclear how such designed resilience efforts transcend the noted challenges.

In the years since, critiques of Rebuild By Design have focused on the slowness of the process after the conclusion of the competition phase, the prioritizing and phasing of projects, and the development-oriented proposals. Yet, it remains a much discussed and modeled initiative for urban interventions around climate change. Can such a model of design for urban resilience be just?

Using a theoretical framework of climate justice tuned to the spatial politics of urban design (building on the author's previous work; see Goh 2019, 2020), this paper asks: to what extent has the post-Sandy resiliency design activities in New York City resulted in more just processes and outcomes? It looks at the Rebuild By Design initiative more generally, exploring the post-competition biophysical, social, and institutional landscapes in the affected region. And it investigates more closely particular neighborhoods, organizations, and designs involved, including the events and politics around the Lower East Side in Manhattan. This mixed-methods study combines in-depth, semi-structured interviews with key informants with analyses of design documents.

The paper concerns itself not so much on whether Rebuild By Design has delivered on its promises – the answer is, yes and no, depending on how you look at it – but how the innovative organizational processes of the initiative boosted or hindered ongoing struggles for recognition and justice in the city, and the extent to which concepts and concerns of design, a key precept of the initiative, aided such processes. In other words, how does the politics of design contribute to just resilience? The paper explains how design is part of the contested production of urban climate futures. Design is invoked to bridge and build coalitions among actors and institutions of urban governance and to challenge perceived unjust actions.

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Key Words: resilience, urban design, urban politics, spatial planning, climate change

OPENING UP THE PRIVATE CITY: REFORMING SINGLE-FAMILY ZONING
Abstract ID: 19
Abstract within Pre-Organized Session 3

MUKHIJA, Vinit [University of California Los Angeles] vmukhija@ucla.edu, presenting author

The conventional wisdom is that properly designed public spaces enable democratic engagement and shape the public city. In this chapter, however, I posit that the nature of private dwellings determines the publicness of cities. A public city, I argue, is an inclusive city and must offers a wide range of housing

options to accommodate the diversity of its residents, and fosters relationships of sharing between people epitomized by disparity and alterity. To achieve this, it must be easy to change and transform the underlying spatial form and institutional arrangements of housing in a city. I call such a city an Open City, and build on existing ideas of openness to diversity and change in the urban planning and design literature (Brueckner 1990; Friedmann 2002; Sennett 2017; 2018; Turnbull 1988). It is such openness that makes cities inviting for migrants and immigrants, and drives their cosmopolitan character.

Cities around the word, including American cities, have played this pivotal role. Most U.S. and Canadian cities, however, have grown in population and prominence in the post-war era and are defined by detached single-family housing, a uniquely American housing trademark. Nonetheless, immigrants from around the world have embraced the American Dream of private mini-castles, although often after transforming them informally. As urban housing has become increasingly expensive, single-family neighborhoods that disproportionately dominate urban land use need to transform. Owners of single-family housing, however, typically oppose changes to the character of their neighborhoods and their parochial perspective receives preferential treatment in policy. The urban design and planning challenge is to open up such neighborhoods to a diversity of housing alternatives. The conventional wisdom is that top-down state intervention in local land use regulations is the key pathway for reforming single-family zoning. I, however, argue that urban design, spatial thinking, and local initiatives can be central to transforming and opening up such neighborhoods to change and diversity.

I illustrate these arguments through a case study of single-family zoning transformation in Vancouver, Canada. Vancouver is similar to U.S. cities in single-family zoning's dominance of its land use. Through archival research and interviews, I show how Vancouver's zoning dramatically changed to allow secondary suites, or second units, in the 1970s and 1980s through sub-neighborhood-level polling. Voting in Vancouver was deliberately structured to allow renters to deliberate and participate. This emphasis on procedural justice played an important role in the substantive outcome of formally allowing additional density and more tenants in single-family-zoned neighborhoods. These locally-driven, neighborhood-based changes helped establish the foundation for city-level, institutional interventions for opening up single-family-zoned lots to three housing units in the early 2000s, and more recently two duplexes, or four units per lot. Vancouver's case also illustrates the limitations of housing density and morphology driven approaches to opening up cities. The city's high real estate values and rents emphasize the acute need for non-market housing alternatives in addition to market-based diversity. It is likely that the city government needs more state and federal support for increasing social housing options in Vancouver. Housing diversity, transformation of single-family zoning, urban design and spatial thinking, and local initiatives, nonetheless, are essential for making cities more open.

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Key Words: Vancouver, single-family zoning, housing and the built environment, procedural justice, spatial thinking

EMPOWERING PLACE-SHAPING STRATEGIES: IMPLICATIONS FOR STREET VENDING IN ROME

Abstract ID: 20
Abstract within Pre-Organized Session 3

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Policy makers worldwide banish street vendors from prime public spaces while seeking to attract capital and please urban elites. How the built environment is designed can favor this process by neglecting vendors' needs and by conveying dominant ideas of "appropriate" uses in public spaces (Cross and Morales, 2007). While scholars have analyzed the ways by which street vendors resist exclusion through insurgent and everyday practices (Kim, 2015), little attention has been given to how urban designers can respond to such practices in order to advance spatial justice. Focusing on the Bangladeshi vendors of Rome, this chapter examines what kinds of spatial arrangements can empower street vendors to claim a right to the city, or the right to participate in the social and physical production of space (Lefebvre, 1996). We argue for an empowering urban design approach that meets the needs of vulnerable vendors, while enabling them to occupy, produce, and be recognized in space.

Roughly two thousand immigrants daily occupy the touristic center of Rome selling trinkets without vending licenses. Most vendors are men from Bangladesh and often lack a regular immigration status. As a growing xenophobia renders the vendors' everyday lives increasingly difficult, accompanying ordinances and regulations also expose them to the risks of fines, detention, and deportation. This paper draws from observations, mapping, and interviews to detail the vendors' spatial tactics and social relationships with other sellers, police officers, business owners, residents, and tourists. We found that vendors enact three kinds of spatial tactics to defy exclusion and implicitly demand recognition. First, vendors seize economic opportunities by using affordances of the built environment to sell merchandize and interact with tourists. Second, vendors develop and inhabit networks of hiding places to satisfy their needs. Some hideouts serve them as shelter from police raids. Some other places allow vendors to conduct activities that they could hardly carryout elsewhere—using restrooms, charging phones, resting, or storing merchandise. Thirdly, vendors construct a sense of belonging by inhabiting crowded public spaces outside of working hours to relax, pray, or video-chat with their families in Bangladesh.

The vendors' spatial tactics result in a tactical urbanism that challenges dominant ideas of "the appropriate." Urban designers can and should learn from this kind of tactical urbanism in order to empower vendors to assert their right to the city. Drawing from our findings in Rome, we suggest three kinds of empowering place-shaping strategies. First, designers should enhance opportunities for vendors to sell in prime spaces by creating more hospitable spatial settings. This would imply maintaining and enhancing existing infrastructures that support vending as well as creating new selling areas equipped with removable stalls, shade, trashcans, and lighting. Second, designers should ensure that vendors can satisfy their neglected needs safely and comfortably. Built in prime locations, these spaces would not only ensure dignity for the vendors but would also legitimize the presence of vulnerable groups in the eyes of other city users. Finally, designers should create spaces that welcome non-majoritarian ways to use and experience prime spaces in the city that would expand conventional norms of "the appropriate." These place-shaping strategies would ensure a more just design of prime city spaces that welcomes rather than exclude vulnerable groups.

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Key Words: Street Vending, Right to the City, Tactical Urbanism, Immigrant Place Making, Rome

URBAN EXPERIENCE AND DESIGN: ADVANCED METHODS AND RESEARCH
Pre-Organized Session 15 - Summary
Session Includes 34, 35, 40, 109

HOLLANDER, Justin [Tufts University] justin.hollander@tufts.edu, organizer

This session seeks to explore the emergence of a new framework for considering how people experience the places urban planners and designers shape. At the core of this new framework of Urban Experience and Design is the confluence of planning, architecture, psychology, and evolutionary biology, as well as new research methods and techniques for using biometrics in urban planning and design. Today the design professions find themselves in the midst of a historic transition, which in a first, provides a scientific foundation for their disciplines. Modern neuroscience and cognitive science, coupled with powerful new biometric tools are able to measure the human experience of place, provide new information and methods for understanding, creating and assessing buildings and urban spaces. This session will bring together presenters who are advancing knowledge in these areas, helping to shape new forms of design theory and approaches which embrace the unconscious responses we have to external stimuli.

Objectives:

- Learn how biometric tools, including eye tracking and facial expression analysis, can be aggregated to predict human behavior, including why we choose to 'approach' or 'avoid' different buildings or streetscapes

EMERGING TRANSPORT FUTURES FOR STREETS AND HOW EYE-TRACKING CAN HELP IMPROVE SAFETY & DESIGN
Abstract ID: 34
Abstract within Pre-Organized Session 15

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As a wider array of existing and emerging transport devices arrive on city streets—everything from bicycles to scooters to autonomous vehicles—new challenges are emerging with respect to how humans pay attention while traveling. The value of eye tracking is rooted in the concept that how users scan, navigate and respond to others can be measured and catalogued into patterns and advances in eye-tracking in real world settings is opening up new frontiers. We describe an emerging landscape for how eye-tracking research can help understand and address the safety needs of pedestrians and those using human-scaled vehicles.

Citations

- Hollander, Justin B. and Alexandra Purdy, Andrew Wiley, Veronica Foster, Robert J.K. Jacob, Holly A. Taylor & Tad T. Brunyé (2018): Seeing the city: using eye-tracking technology to explore cognitive responses to the built environment, Journal of Urbanism: International Research on Placemaking and Urban Sustainability, DOI: 10.1080/17549175.2018.1531908
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Key Words: eye gaze, human-scaled transport, street design

USING EYE-TRACKING EMULATION TO EXAMINE TRADITIONAL AND MODERN ARCHITECTURE: COMPARING DANANG, VIETNAM AND BOSTON, USA
Abstract ID: 35
Abstract within Pre-Organized Session 15

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There are a number of key architectural and design characteristics that are unconsciously preferable to humans, over others (like well-defined edge conditions, bilateral symmetry, established hierarchy, and biophilic elements). Taking these characteristics into account, it is hypothesized that traditional buildings are more unconsciously attention grabbing than modern buildings. Unconscious fixations, which denotes fascination, are associated with memory formation, and thus indicates how memorable a building is. Using a comparative study design, we captured 39 photographs of buildings around two similarly-sized cities, Boston, Massachusetts and Da Nang, Vietnam. There are many similarities between the two cities. Both cities are port cities with large airports and are similarly sized; though not the largest for their respective countries. Perhaps most relevantly, each city has a strong connection to its past. However, the two cities, while alike, have very different pasts, which are reflected in their architecture.

From the photographs we took, we then uploaded those pictures into Visual Attention Software (VAS) by 3M, eye-tracking emulation software. The results of VAS indicated that in Da Nang and Boston, more fixation points would be expected on the traditional facades, which therefore were more unconsciously attractive and memorable than modern facades. It is recommended that policy should encourage design standards that proliferate the number of traditional facades and encourage the continuation of historic preservation. Foliage, lights and flags can also be added to create fixation points and enhance the memorability of facades.

Citations

- Hollander, Justin B., Alexandra Purdy, Andrew Wiley, Veronica Foster, Robert JK Jacob, Holly A. Taylor, and Tad T. Brunyé. "Seeing the city: using eye-tracking technology to explore cognitive responses to the built environment." Journal of Urbanism: International Research on Placemaking and Urban Sustainability 12, no. 2 (2019): 156-171.
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Key Words: eye-tracking, historic preservation, biometrics, Da Nang, Vietnam, Boston, USA

STREET PSYCHOLOGY: A METHODOLOGY FOR EXPLORING THE LINK BETWEEN PEDESTRIAN EXPERIENCE AND COGNITIVE WELL-BEING
Abstract ID: 40
Abstract within Pre-Organized Session 15

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Psychologists and neuroscientists have produced robust scholarship documenting the effect of the physical environment on psychological well-being. While much of this work has focused on the neuroscience of architectural objects, public space or natural settings, we propose to take these insights to

the street level, offering a methodological contribution to the study of cognitive effects of urban form from the pedestrian's point of view. Our goal is to conduct a web-based research protocol that can be used to better understand the link between psychological health and theorized qualities of optimal, pedestrian-oriented urbanism. Better methods are needed in the effort to gauge varying pedestrian experience.

We synthesized the literature into a set of measurable qualities of pedestrian experience, which include order, variety, scale, and enclosure. These qualities can be measured on the basis of street level conditions related to street walls, frontage, proportion and architectural variety. Order engages issues of symmetry and classical proportion. Variety refers to the presence, quantity and inter-relationship of visual contrasts in terms of surface treatment and building height and form. Scale relates to the relationship between the human body and built form, also involving the issue of how urban form varies from horizontal to vertical emphasis. Enclosure is based on the degree of contextual architecture and its ability to cooperate in the production of spatial definition.

Our work constitutes an integration of environmental neuroscience and urban design-related principles of urban form and pedestrian experience. We use this work to investigate how reliably people perceive qualities of the built environment. A number of theories can be drawn from in the attempt to understand what the psychological value of particular kinds of streetscape experiences might be. The pedestrian realm of urban main streets has received widespread attention, and there is now a large literature on the various streetscape qualities that are believed to produce a "superior pedestrian experience" (Talen & Koschinsky 2014; Benfield 2014; Dover & Massengale 2013; Mantho, 2015). These theories are now translating to revised zoning codes and streetscape design guidelines—applications of theorized elements of streetscape quality. Using preference surveys, researchers have conducted studies of the specific metrics that might be associated with pedestrian quality (e.g., Mehta, 2013; Ewing et al. 2006). Often this research has been directed at finding the "morphological and spatial structures" associated with walking behavior—particularly building enclosure and frontage quality (Kashef 2011: 39; Speck 2012). A few studies have attempted to link cognitive health and architectural form, constituting the field of "cognitive architecture" (Sussman & Hollander 2015; Ellard 2015). Our research contributes to this body of scholarship.

We recruited a sample of approximately 200 participants from Amazon's Mechanical Turk (MTurk). Sample size was determined by our goal of obtaining a large enough sample of ratings per image. Stimuli used for this study are composed of streetscapes showing varying qualities related to pedestrian experience. Photographs were taken around the City of Chicago from pedestrian viewpoints showing private and public frontage as well as sidewalk areas. Twenty examples from each of six different streetscape categories were chosen for 120-image stimulus sets to ensure that participants were exposed to a varied distribution of streetscape types when rating pedestrian experience.

Our results showed that ratings for walkability, preference, imageability, complexity, enclosure, and transparency were highly consistent across participants. This allowed us to validate the usefulness of the question prompts used in the Mturk survey. In addition, ratings from two coordinates within the same block were highly correlated, which allowed us to further confirm results.

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Key Words: streetscape, psychology

IDENTIFYING BIOPHILIC DESIGN ELEMENTS IN STREETSCAPES: A STUDY OF VISUAL ATTENTION AND SENSE OF PLACE

Abstract ID: 109
Abstract within Pre-Organized Session 15

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This chapter explores the role of biophilic elements in streetscapes. It reviews literature on how people react to interacting with nature in various forms and settings. Researching the human-nature interaction for place-making in planning, it specifically looked at the biophilic elements present in streetscapes, how these affect people, and how these elements can be introduced in future plans. The study used 3M's Visual Attention Software (VAS) eye-tracking emulation software to show where an observer may instinctually focus when presented with a point of view within streetscapes samples from residential developments in Devens, Massachusetts. After analyzing how biophilic elements increase concentration and focus within locations along the streetscape, it draws concluding implications future planning and policy practitioners

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Key Words: Human-nature interaction, Biophilic elements, Visual Responses, Eye-tracking, Residential development planning

STUDYING TEMPORALITY, USE, PERCEPTION, AND MEANING OF PUBLIC SPACE IN TORONTO

Pre-Organized Session 77 - Summary
Session Includes 500, 501, 583, 1189

MANDHAN, Sneha [University of Toronto] sneha.mandhan@mail.utoronto.ca, organizer

This session will focus on deconstructing complex narratives around the temporality, use, perception, and research of public space in cities. The uniqueness of public spaces in their facilitation of deliberative democracy, ritual bonds of human interaction, recreation, expression of identity and difference, and social reproduction have been the focus of scholarship in urban planning for decades. The participants in this session will situate their narratives within this larger scholarship on the public sphere, the public domain, and public space. They will examine sites in Toronto to highlight the challenges associated with tactical interventions for reclaiming space for social use, the relationships of different socio-economic groups

with urban public spaces, and the definitions of who makes up the 'legitimate public' within cities. From a methodological perspective, they will discuss how research ethics, protocols and pedagogy are grappled with for the study of the deeply contested concept of public space.

Objectives:

- To complicate commonly held perceptions of public space as being fixed and static
- To understand how the city of Toronto designs and manages public spaces
- To understand how culture intersects with the use of and placemaking in public space

PARK PLANNING IN TORONTO'S PATH: NEGOTIATING MULTI-LEVEL PUBLIC AND PRIVATE REALMS
Abstract ID: 500
Abstract within Pre-Organized Session 77

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Since its inception in the 1960s, Toronto's underground pedestrian system has troubled supporters of the public realm (Hopkins 1996, 76-77). After an period of enthusiastic support for the PATH, a parallel subterranean network connecting office buildings, transit, shopping, and civic spaces, the city's planning division developed buyers' remorse. Rather than encourage tunneling to reduce congestion for pedestrians, Toronto decided to define the public realm at street-level beginning in the mid-1970s. Sidewalks, plazas, parks, and street furniture became sites of renewed interest for urbanists. At this point, the city was no longer willing to contemplate the PATH's potential as a public realm. Aside from coordinating the management of the PATH system in collaboration with the Financial District BIA and requiring knockout panels for future PATH connections in proposed developments, the city planners have continued this hands-off approach for the past forty years. Although the city requires property owners to maintain the space for public circulation, as Hopkins notes, Ontario property rights legitimize surveillance and controlled access to the PATH (Hopkins 1996, 74). This privatization has coincided with the transformation of the downtown core into an emerging residential district. In response to this growth, the city has begun to reinvest in public spaces adjacent to the PATH.

The development of public parks connected to the PATH raises important questions about the relationship between interior (underground, aboveground) and outdoor publicly accessible spaces, particularly as newly created open landscaped spaces are only accessible within the "private 'club' realm" of mixed-use condominium developments connected to the PATH (Rosen and Walks 2014). In response to these land use changes, planners and local politicians have experimented with different land use models and policies to encourage the creation of multi-level public realms in spite of the city's official focus on the street-level. This tension between theory and practice in the case of PATH urbanism indicates significant challenges as well as opportunities for planners. Scholars agree that these underground cities reproduce and exacerbate social inequalities aboveground (Yoos, James, and Blauvelt 2016 and Bélanger 2007). The creation of private open spaces as well as public art and parks within recently completed PATH properties places additional pressures on architects and planners. If enhancing the public realm for a growing residential population is a priority for the city, how will it leverage its limited set of tools to encourage developers to create accessible and inclusive spaces within these private properties?

This paper examines the history of PATH developments that have funded Section 37 parks, plazas, and rail-deck parks. Beginning with College Park's Barbara Ann Scott park and skating trail, I examine the relationship between the city planning division's changing priorities and the strategies of residential and mixed-use developers. Rooftop patios, swimming pools, and landscaped terraces overlook a changing downtown. In contrast, few publicly accessible gardens and parks have been created using public funds. This paper maps and categorizes different types of open landscaped spaces connected to the PATH system and analyzes their development against demographic data and planning policies. My analysis of two PATH project-funded public parks, College Park and CIBC Square, draws upon city planning documents as well as qualitative analysis of the designs (projected and realized) in order to argue that

more accessible public spaces within the PATH system require sustained municipal-level coordination between the city's planning division, ward councilors, members of the Design Review Panel. My quantitative and qualitative analysis of open landscaped spaces indicates that even with coordination, the challenge of creating accessible multi-level parks connected to the PATH should not be separated from broader questions of social segregation in this emerging residential neighbourhood.

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Key Words: Public Space, Privatization, Community benefits, Multi-level urbanism, Pedestrianism

BOTTOM-UP URBANISM: AN EXPERIMENT WITH A PARK(ING) DAY INSTALLATION IN TORONTO
Abstract ID: 501
Abstract within Pre-Organized Session 77

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Toronto, Ontario, was at the forefront of progressive policy and citizen engagement in the 1960s and 1970s. A noteworthy example is the citizen-led opposition against the construction of the Spadina Expressway, which ultimately led to a cancelation of the project in 1971. Today, Toronto is viewed as a Global City and frequently boasts of projects by high-profile designers. However, tensions over public space and transportation amenities have intensified over the last decade with the city's growing pressures to accommodate an increasing and densifying population. Despite the growing challenges, the spirit of progressive citizen engagement from the 1960s and 1970s has become less palpable today. While there have been significant planning interventions led by the city – including pilot transit projects, parklets on downtown streets, and upgrades to city parks – there have been fewer examples of bottom-up, or citizen-led interventions. Through a review of current academic literature, professional publications, and newspaper articles this research explores and defines the broad range of bottom-up engagement in urban interventions in Toronto and other cities. While many cities are using a top-down approach to implement temporary interventions and pilot ideas, we are specifically interested in citizen engagement, or the lack thereof, in the process of tactical intervention and shaping of the urban environment – what Arnstein (1969) categorizes as the top of the ladder of citizen participation, Citizen Control. Through this research we probe citizen involvement in exercising their rights to the city. In addition to a review of publications around tactical interventions, we also explore various levels of citizen participation in decisions impacting the built environment in the City of Toronto. As a specific case study of bottom-up urban interventions, we explore the processes around a Park(ing) Day intervention facilitated by us, along with other students at the University of Toronto, in the city. Park(ing) Day is an event where engaged citizens come together to create temporary public space out of public street parking spaces. As Park(ing) Day is an annual global

open-source event, it offers a point of comparison between bottom-up citizen participation in various cities. Hamilton and Ottawa, Ontario, for example, have been active participants in Park(ing) Day. However, in Toronto, there have been few Park(ing) Day interventions and there has been little engagement by local citizens. Using the lens of a local 2019 Park(ing) Day installation in Toronto, and media coverage of bottom-up, tactical interventions in Toronto and other Canadian cities over the last five years, we ask: what conditions have led to bottom-up citizen engagement?; how and in what ways has that engagement led to tactical urban interventions?; and do these bottom-up interventions actually translate to Citizen Power? Our initial findings indicate that political, institutional, and socio-cultural factors interact in complex ways to create conditions that make cities conducive (or not) to citizen-led urban interventions. This paper will draw connections between academic and professional discourses around public space, tactical/bottom-up urbanism, and citizen engagement in city building.

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Key Words: bottom-up urbanism, tactical urbanism, public space, Park(ing) Day, citizen engagement

NEW GENERATION PUBLIC SPACE PROJECTS AND SPACES OF HOMELESSNESS: A CASE STUDY OF THE BENTWAY, TORONTO
Abstract ID: 583
Abstract within Pre-Organized Session 77

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This paper uses the Bentway in Toronto to highlight how new park spaces are being developed where homeless people have historically sought shelter, making visible tensions between the inclusivity of public space and homelessness. Concepts of public space as open and inclusive are often intertwined and in tension with issues of homelessness, with unhoused people being dependent on, but often not welcome in, parks and other desirable urban spaces to carry out their daily lives (Mitchell, 2003). Thus, homeless people often find refuge in "lost" spaces where behaviours considered anti-social are "allowed" or at least easy to ignore (Carmona, 2010). These types of spaces, however, are now being "found" for a new generation of public space design. With the High Line in New York as the foundational model, cities are pursuing such Large Green Infrastructural Projects (LGIPs) under bridges, on abandoned railway corridors, and in other spaces once viewed as desolate, but that are now being "activated" with landscaping, public art, and other features (Rigolon and Nemeth, 2018).

Toronto's Bentway project follows this model. The Bentway is a 1.75-kilometer-long park project managed by the non-profit Bentway Conservancy (BWC) and opened in 2018 underneath the Gardiner Expressway, an elevated 1950's-era highway. Although the project's first phase did not physically occupy existing homeless spaces, there are many located nearby. For example, the City evicted a homeless encampment just to the east of the Bentway in early 2019. Then, just weeks later, the BWC hosted a revenue generating event where patrons could experience "culinary creativity" while immersed in "design innovation." The contrast with recent, nearby homeless removal generated a great deal of attention, including anti-poverty protests during the event. This reaction surprised the Conservancy that saw the Bentway as an inclusive "new gathering place" (Bentway Conservancy, 2020).

Given this context, we ask whether and to what extent the City, the BWC, and other key actors considered the project's social context as it was conceived and developed, examine how stakeholders responded to the issue once made visible, and consider how lessons from the Bentway relate to the larger phenomenon of LGIPs. To do so, we compared the rich public space literature to the developing LGIP literature. We then conducted a content analysis of staff reports, council minutes, and documents from Waterfront Toronto (an inter-government development agency), and also interviewed a range of stakeholders including city planners, staff from the BWC, and homeless activists to understand how the Bentway was conceptualized, particularly as a place of inclusivity. Interviews were also prospective, exploring how such LGIP projects should respond to being in spaces of homelessness.

Our initial findings indicate that the conceptualization, planning, and governance structures behind the creation of the Bentway little considered the project's social context, with terms like "vacant", "leftover", and "unused" frequently used in relevant documents and interviews to describe the space that is now the Bentway. Instead, stakeholders saw themselves as creating a new, inclusive space with only positive impacts. That said, the BWC subsequently acted, implementing harm reduction training for staff, consulting with adjacent organizations that work with homelessness, and promoting literacy on issues of homelessness in public spaces. However, the Bentway project still raises larger issues of how LGIPs, often conceived of as creating vibrant public spaces and liveable cities, create competitive city discourses that tend to override their social contexts (Loughran, 2014). Pubic space initiatives cannot, of course, solve issues of homelessness. A lesson for all such projects, however, is that they must be inclusive in their processes of development, not just their goals, and should never assume that urban spaces are without social context.

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Key Words: Public Space, Homelessness, Urban Design, Large Green Infrastructure Projects, Park Design

ETHICS IN PUBLIC SPACE RESEARCH AND PEDAGOGY
Abstract ID: 1189
Abstract within Pre-Organized Session 77

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Public space studies have become a popular method in urban design research in the past few decades, as cities try to enliven streetscapes and amplify placemaking practices. Influential methods include those promoted by the Project for Public Spaces, and published by Gehl and Svarre (2013), in which a researcher (or team) spends time observing behaviours in public spaces in order gather evidence to support changes in the built environment.

In urban studies and planning classrooms, many educators employ versions of these research methods in order to teach students about how to conduct empirical research in urban spaces; the impacts of design decisions on individual and group behaviour; and the benefits and limitations of a variety of observational methods.

Canada's research code on human subjects, the Tri-Council Policy Statement, states in Article 2.3 that "Research Ethics Board review is not required for research involving the observation of people in public places where:

- it does not involve any intervention staged by the researcher, or direct interaction with the individuals or groups;
- individuals or groups targeted for observation have no reasonable expectation of privacy; and
- any dissemination of research results does not allow identification of specific individuals." Little scholarly work exists on the ethical dimensions of public space research, as most hew fairly closely to the above. However, feminist ethnographers have questioned the ethical grounds of observational research (Stacey, 1988), and urbanist research practitioners (for example, Pitter, 2020) have noted that, beyond official ethics requirements, this style of research can function as an unwitting form of surveillance on already-watched persons and communities. Furthermore, it also may yield unreliable results, as the researcher assesses a place without understanding the larger socio-spatial context in which it operates. These scholars and practitioners promote a sustained engagement with community members in order to mitigate these challenges.

In planning and allied fields, there are well-documented techniques to support equity and inclusion in place-making through engaged research methods. Hester's "sacred places" (1985), Halprin's RSVP method (1969), and the Rapid Ethnographic Assessment Program (REAP) (Taplin, et. al., 2002) all address some of these important concerns about how we study places, with community-based involvement and outcomes in mind. These methods, of course, require the researcher to have, or have access to, long term relationships in the community.

In the urban planning classroom, however, many of these engaged methods are untenable, or inappropriate for learning outcomes. In particular, we are confined in our practices by the duration and demands of term-length courses. In this paper, I ask: how do we educate future planners in techniques of public space research in an ethical and meaningful way? How do we sharpen our students' abilities to observe and assess the impacts of the built environment on public behaviours, with a specific eye to the social space that the researcher occupies? What techniques can student exposure to a variety of uses of public space in diverse communities, without imposing a great deal of labour upon those with low capacity?

I explore these questions in order to set a pedagogical agenda for public space (and other site-based) research education. Through a review of public space research syllabi and assignments for undergraduates solicited from colleagues in urban planning and urban studies programs, I establish a preliminary "state of the field" for pedagogy on this topic. I propose a typology of appropriate public space research methods for students, based not only in the code of ethics, but also a more nuanced understanding of equitable practices in research. This framework also serves to promote reflection on the impact of public space research among more advanced scholars and practitioners.

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Key Words: public space, pedagogy, research ethics

TRACK 16 - ROUNDTABLES

AESTHETICS OF GENTRIFICATION: SEDUCTIVE SPACES AND EXCLUSIVE COMMUNITIES IN THE NEOLIBERAL CITY
Abstract ID: 254
Roundtable

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LINDNER, Christoph [The Bartlett, University College London] c.lindner@ucl.ac.uk, participant
NEWBURY, Susanna [University of Nevada, Las Vegas] susanna.newbury@unlv.edu, participant
SANDOVAL, Gerardo [University of Oregon] gsando@uoregon.edu, participant
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Gentrification is reshaping cities worldwide, resulting in seductive spaces and exclusive communities that aspire to innovation, creativity, sustainability, and technological sophistication. Gentrification is also contributing to growing social-spatial division and urban inequality and precarity, especially for immigrant and ethnic communities under a regime of racial capitalism. In a time of escalating housing crisis and unaffordable cities, scholars speak of "eco-gentrification" (Dooling, 2009), "planetary gentrification" (Lees et al., 2016), and gentrification as a form of "new urban colonialism" (Atkinson & Bridge, 2004) to describe the different forms and scales of involuntary displacement occurring in vulnerable communities in response to current patterns of development and the hype-driven discourses of the creative city, smart city, and sustainable city .

In this context, how do contemporary practices in art, architecture, design, and related fields help to produce or resist gentrification, especially when considering the issues of race, gender, and class? Though Zukin (1982) first implicated artists and cultural capital in the process of gentrification, these fields and practices remain underexplored compared to more general examinations of economic gentrification. What does gentrification look and feel like in specific sites and communities, and how is that appearance or feeling implicated in promoting stylized renewal to a privileged public? This process has been identified as extending even to the appropriation and use of Black culture to market a "cool" city (Summers, 2019). To what extent do the aesthetics of displacement travel globally between cities and cultures? And in what ways do those aesthetics express contested conditions of migration and mobility? Addressing such questions, this panel seeks to examine the relationship between aesthetics and gentrification in contemporary cities from multiple, comparative, and transnational perspectives.

Short lighting presentations on specific case studies will provide provocation for a more open and general roundtable discussion. Participants will draw from themes and cases from the forthcoming volume, also titled *Aesthetics of Gentrification: Seductive Spaces and Exclusive Communities in the Neoliberal City*, edited by Christoph Linder and Gerardo Sandoval, and to be published by University of Amsterdam Press.

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Key Words: gentrification, art and culture, aesthetics, spatial justice, urban development

TRACK 16 – INDIVIDUAL ABSTRACTS

PROBLEM-BASED SOLUTIONS: TRANSFORMATIVE APPROACHES TO MITIGATE THE IMPACTS OF BOOM-AND-BUST IN DECLINING URBAN COMMUNITIES
Abstract ID: 3
Individual Paper Submission

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Strategic partnerships between universities and declining urban neighborhoods with limited resources have resulted in some innovative and forward-thinking approaches to land use and planning that respond to the impacts of boom-and-bust through the implementation of problem-based solutions, and have spurred development to make communities more resilient. The university-community partnerships and engagements have multiple goals. They include increasing university responsiveness to local needs, stimulating real-world change, and preparing students to effectively address complex social challenges (Dorado, 2004). However, such approaches are complicated by a variety of factors, including stakeholder expectations, power imbalances, and the conflicting goals of educators and community members (Mansuri and Rao, 2004). While the benefits of service-learning programs to universities are well documented, the benefits of such higher education partnerships to community participants are not as well known (Netshandama, 2010). Successful engagements seem to require community involvement and decision-making authority at every phase, mutual accountability, and trust (Winkler, 2013). This presentation refers to a series of case studies of community engagement and neighborhood empowerment in the development of a collective sustainable plan/vision for declining inner-city neighborhoods with limited resources. These neighborhoods, located in Columbus, Ohio, have seen tremendous declines in population and economy over the past years due to significant loss of manufacturing jobs. The case studies demonstrate that service-learning has the potential to provide communities with place-specific guidelines and recommendations that improve the quality of life for residents, but their implementation requires a collective effort that goes beyond the classroom.

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Key Words: urban design, participatory planning, service-learning, Aaptive re-use, university-community partnership

RESEARCH ON RENEWAL STRATEGIES OF SPECIALIZED COMMERCIAL STREET IN GUANGZHOU BASED ON CULTURAL CHARACTERISTICS PROTECTION

Abstract ID: 6
Individual Paper Submission

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Under the background of urban renewal and industrial restructuring, the contradiction between the development of traditional specialized commercial streets and the old district space has gradually become the focus and difficulty of urban renewal work. Unlike other metropolitan city, specialized commercial street is an important carrier of the thousand-year commercial capital culture in Guangzhou. It still retains high-intensity of people flow and multi-dimensional space-time utilization characteristics, but the existing renewal system and planning lacks implementation policy and plans for the specialized renewal of specialized commercial streets, which usually results in presenting problems, such as chaotic management and inadequate characteristics. In fact, the traditional specialized commercial streets want to continue its vitality in modern society, which is not only the renovation and utilization of buildings or the development of business forms, but also a multi-level topic involving society, policy and economy.

Therefore, this study takes traditional specialized commercial streets in Guangzhou as the research object, and aims to explore how to maintain the development characteristics of commercial streets and alleviate the impact on the old district space under the role of multiple contradictions. Through field investigations, interviews, interpretation of relevant historical documents and policies, on the one hand, this study establish a commercial street development value evaluation system based on historical development and evolution characteristics and current development updates, comprehensively considers the development value of specialized commercial streets from the four aspects of space, economy, society and culture, and classifies its development characteristic level mode. On the other hand, it evaluates the current renewal policy and planning of specialized commercial streets in Guangzhou. Meanwhile, this study combines the successful experience of domestic and foreign commercial street updates to propose the framework integration of the commercial street update system and renewal strategies.

The research founds that: in terms of development characteristics, historical traditions, including traditional space forms, time-honored brands, and so on have a greater impact on the business development of specialized commercial streets; warehousing and transportation are the key to the spatial contradictions in the old district; different types of specialized commercial streets show different operating conditions and development characteristics, which is also necessary to consider in the later stage of development and construction. In terms of renewal strategy, it should focus on protecting the material and non-material cultural characteristics of specialized commercial streets, maintaining the original social relationship network in the area, emphasizing the mixed land function and social integration in the area, advocating the use of a gradual renewal method, establishing a comprehensive format evaluation, and supporting guarantee mechanism to jointly promote the renewal work. Based on this, combined with the specific case analysis of Guangzhou Hualin Jade Street, we put forward strategies from the aspects of cultural characteristics protection, space construction management and control, business format adjustment and upgrading, and construction management guidance.

This study is closely related to the ongoing renewal of the old district in Guangzhou at this stage. At the same time, it actively responds to the requirements of 2035 Guangzhou master plan for building the system of specialized commercial streets, and perceiving the culture of commercial capital. On this basis, we expect to provide feasible suggestions for the next step of the old district renewal practice in Guangzhou.

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Key Words: urban renewal, specialized commercial street, development characteristics, evaluation system, strategy

CO-PRODUCTION OF PUBLIC SPACE – PLANNING INSTRUMENTS USED FOR PRIVATELY OWNED PUBLIC SPACE IN TRANSITIONAL CONTEXT. THE CASE OF SEOUL AND BERLIN.
Abstract ID: 85
Individual Paper Submission

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In this paper, I analyse, compare and evaluate a wide range of planning instruments with a particular focus on Privately Owned Public Space (hereinafter POPS) – a term used to describe physical space that is dedicated to public use and enjoyment and which is owned and maintained by private property owner. Whilst the focus is on POPS, the research tries to answer to two questions: (1) how urban transformation affects public space and (2) how public authority, as regulator, addresses the challenges of provision and maintenance of public space in the course of rapid change. The research makes two distinct contributions.

First, the paper fills a research gap by looking at POPS in transitional context. Seoul and Berlin are selected as case cities for the fact that they share the experience with radical transformation. Through document analysis, Teheran-Road in Seoul and Mediaspree in Berlin are chosen as case studies as they represent the history of urban transformation in each city very well. In case of Seoul, enormous developments took place to respond to the rapid urbanisation after the Korean War. Huge number of developments and the subsequent high land price led to the lack of budget and space for public space along the Teheran-Road. It revealed that the city is incapable of providing and maintaining public space alone. In case of Berlin, a unique situation was created due to the fall of socialism and Germany's reunification. The flow of foreign investment, together with the rapid privatisation of state-owned properties especially in the former East Berlin brought immense changes. Mediaspree, one of the largest property investment projects on the former border area between East and West Berlin, resulted in the loss of publicly owned buildings and open spaces along the river Spree. Thus, securing public access to the river was one of the biggest issues. It revealed that the city has to cooperate with property owners to guarantee public access to the river.

The findings suggest that the drivers for urban transformation in each city are different, yet, common issues around public space arise as cities undergo rapid changes. Providing and maintaining public space is especially challenging when cities, during and after transformation, experience high development pressure. In this case, the cooperation between public and private sector is essential. The research reveals that local planning authorities, as regulators, have been using various planning instruments to guarantee public access and use on private property in form of POPS. The relevant planning instruments used in each case study are identified through document analysis. Then, a number of POPS are selected in two cities as examples for further analysis. Semi-structured expert interviews with planning officers, professors, architects and building managers are conducted to provide a supplementary explanation on how the relevant planning instruments are exercised in practice. All in all, planning instruments for POPS in two cities are analysed, compared and evaluated. A wide range of instruments makes the second contribution. It provides a policy implication not only for Seoul and Berlin, but also for cities which undergo radical change, feel high development pressure and, hence, look for ways to cooperate with

private sector in producing and maintaining public space.

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Key Words: public space, privately owned public space, co-production, collaborative planning, urban transformation

TOWARDS A BETTER INDICATOR FOR WALKABILITY: COMPLEMENTING 'WALK SCORE' WITH MORPHOLOGICAL MEASUREMENTS
Abstract ID: 132
Individual Paper Submission

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This research tackles the issue of 'Walk Score' (WS) in recognising the experience of walking trips by introducing three morphological measurements, comprising the public/private interface, pedestrian permeability, and land use mix.

The transition from car-dependent cities to walkable urban space is vital for shifting the current course of global climate change to a sustainable and resilient future (Dovey and Pafka, 2019). The term 'walkability' has therefore received extensive attention; it could be construed as the degree to which people can live, work, and visit in a city through walking.

The notion of walkability is, however, intrinsically fuzzy, leading to difficulties in measurement (Forsyth, 2015; Southworth, 2005). Walkability is multi-dimensional, affected by the synergy of urban density, functional mix, access network, and so forth (Dovey and Pafka, 2019). Also, walkability regards walking as simultaneously the 'means' (walking from A to B) and 'outcome' such as recreational walking (Forsyth, 2015). Further, walkability is multi-scale: through a rapid transit network, the coverage of walking activities could be enlarged (Cervero and Kockelman, 1997).

As a key indicator for walkability, WS cuts through the conceptual conundrum and measures walkability by a number out of 100, while such a simple number is generated from complicated statistical models which negatively associate walkability with the length of walking time from any given location to various destinations. WS has recently seen a rise in research and practice: it is increasingly used by scholars, planners, designers, developers, and real estate agents, and it has promoted the public awareness of walkable and sustainable urban transitions. Although WS comprehensively measures 'time', it rarely considers 'space'; that is how well people walk from one location to another. This issue of WS might cause biased findings and inappropriate planning interventions, yet it is hardly explored in existing literature (Ewing and Handy, 2009).

In response to the research gap, this paper proposes three key morphological measurements for walkability, including the public/private interface type and catchment, pedestrian permeability, and land use mix. These measurements are built on fine-grained and quantifiable spatial data with respect to building footprints and floors, block boundaries, street centrelines, and land uses. Many of these data have

only been available from two emerging sources: the open-data portals of municipal and state governments, and the satellite and street-view images by Google.

Six locations (cases) in Salt Lake City (USA), Edmonton (Canada), and Melbourne (Australia), covering all three countries where WS is available, are used to test the proposed measurements. In each city, two locations are selected: one is near a main street; the other is in close proximity to a big box strip or agglomeration. These six locations have the same WS of 92/100, ranked the top of the walkable hierarchy by WS: 'Walker's Paradise'. The one-square-kilometre areas (a walkable range) centred on the selected locations are analysed by the three morphological measurements.

The results differentiate the walkability of the selected cases, and the differences are indicated by numbers while being geared to morphological maps. First, locations near a main street are more walkable than these with the same WS but next to a big box strip or agglomeration. Second, locations show stronger capacities for walking than these with the same WS and adjacent to the same retail type, if they sit at a neighbourhood that incorporates longer public/private interfaces along the sidewalk, more permeable streets, and a greater land use mix.

While the proposed morphological approaches could be integrated with WS to better measure walkability in the selected locations, they should be further tested on a wider range and a larger number of cases. Continuous studies of walkability measurements are therefore necessary.

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Key Words: Walkability, Walk Score, Morphology, Measurement

PUBLICNESS, TOWARD A UNIFIED METHODOLOGY OF STUDYING PUBLIC SPACE
Abstract ID: 147
Individual Paper Submission

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A large amount of recent scholarly interest in quantifying the publicness of public space (PPS) and the various proposed methodological models reveals the importance of the concept. PPS refers to the degree to which public space is publicly accessible and inclusive. PPS, as most concepts in social science are, is a complex, subjective, and vague concept, which results in a problem of pluralism and disparate methodological frameworks. I argue that PPS studies continually redevelop the dimensions and the measurement techniques of PPS because each of these studies has its own aims, approach, and context, and tries to reform and adopt the general understanding of the concept to fit the intended research. This creates many variations of how PPS is expressed, which makes it a loose and problematic concept. Thus, there is a pressing need to find a more unified model, but the question is: How does one create a unified model to assess PPS that is contextually adaptable and theoretically precise?

A systematic literature review was employed to investigate the research question. This study assesses 16 PPS methodological frameworks within the existing literature. The analysis techniques start with an

inductive approach to emerge the major themes and concepts in the literature. Then, it encompasses grouping similar themes and concepts into categories and identifying conceptual relationships among the categories. Finally, the study involves specifying the core categories and describing their meaning and contribution to the overall PPS methodology.

The assessment concludes several key points regarding PPS methodological frameworks. I argue that although the models may not have consensus dimensions, they agreed at the theoretical level. They agree that PPS is a complex entity that relies on non-human and human factors and varies from place to place. I claim that the unified model should have few but broad dimensions to ensure non-overlapped dimensions. Each of these dimensions should represent a specific and unique characteristic of space, which should be measured and interpreted to suit the characteristic. Since each purpose or use of a PPS methodology has a unique context, I argue that the unified model should allow for adaptation in the level of the indicators but not necessarily in the dimensional level. I argue that the unified model should allow studying a particular dimension or two without including all the dimensions when needed. Finally, I emphasize that the unified model should be easy, fast, and observable.

I then pilot-tested using the proposed unified framework in four urban public spaces in two different contexts (two in Riyadh, Saudi Arabia, and two in Denver, USA) to test the contextual adaptability of the framework. The preliminary results show that the unified framework provides a robust way for us to assess the PPS in different contexts. It also helps to better understand the relationship between socio-cultural factors and the evaluation of PPS.

The findings of this paper contribute to the methodological framework of PPS. It helps in identifying the basis for how PPS is assessed and interpreted. It proposes a unified framework of PPS that is contextually adaptable and theoretically precise, rendering the framework more fluid and useful in different settings and contexts while remaining robust and comprehensive in its assessment of the site.

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Key Words: methodology, the publicness of public space, urban design

EVALUATION OF PUBLIC PREFERENCE OF SCENIC BEAUTY OF URBAN SKYLINE OF SHIRAZ (IRAN)
Abstract ID: 162
Individual Paper Submission

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Urban Skyline of Shiraz, in the south of Iran, is known for its significant beauty for several centuries, according to a wide range of historical descriptions and depictions. However, the rapid urban development during the last century has posed destructive effects on the macro skyline of Shiraz by the obstruction of natural and built monuments or diminishing the visual value of historic structures under the shadow of high-rise buildings. Consequently, this research aims for an evaluation of the existing status of the urban macro skyline of Shiraz in reference to public perception so as to extract the contributing visual factors, which can help the preservation of the historic landscape of Shiraz. The contextualized visual attributes were extracted from the literature as well as interviews with experts. At the next stage, the

visual attributes were imported and analyzed in a GIS file. Through a field study in the mountains surrounding the city, the total number of 15 panoramic views of the macro skyline of Shiraz was shoot, and the photos were evaluated by the public. Finally, the results demonstrate that the depth and distribution of historic gardens of Shiraz, as well as human-made historic monuments, are among the contributing factors in the public visual preference of the urban macro scenes. In the end, it is discussed that the most relevant attributes can set the stage for future urban regulations in favour for preserving the historic macro skyline of Shiraz.

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Key Words: public perception, scenic beauty, historic urban macro skyline, GIS

BUILDING CONDO LAND: TORONTO'S RAILWAY LANDS AND THE PLANNING AND DESIGN OF VERTICAL URBANISM
Abstract ID: 164
Individual Paper Submission

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Over the past twenty years many global cities have experienced a 'vertical urbanisation' (Nethercote, 2018) boom fuelled by inward urban migration (Al-Kodmany and Ali, 2013), global flows of real estate capital (Rogers et al., 2015), and planning and urban design policies that favour urban intensification. The form and design of vertical urbanisation differs from place to place, but one emergent trend is the development of tall condominium communities that offer luxurious amenities alongside new community spaces and facilities.

Toronto, Canada, has been a hotbed of vertical urbanisation since the early 2000s. The city's downtown core and surrounding inner city neighbourhoods have rapidly densified as a result of favourable planning and design policies and a buoyant residential real estate market. The geographers Rosen and Walks (2015) have coined the term 'condo-ism' to describe this phenomenon, casting Toronto's experience as a form of urban neoliberalism that has distorted the social fabric of the city and profoundly re-shaped the physical form of Toronto for young middle class dwellers.

What is missing from the growing literature on Toronto's condo-ism is an understanding of how the new

places and spaces of condo-ism have been created over recent decades, and what role the City of Toronto has played in regulating the form and function of vertical urbanisation. To address this gap, this research focuses on CityPlace, an urban mega-project of more than 30 residential high-rise towers and associated community facilities that was built between 1997 and 2020 on a former rail marshalling yard called the Railway Lands. The research identifies CityPlace as a microcosm of Toronto's condo-ism and one that is emblematic of the new urban forms and building typologies that are currently reshaping Toronto and other global cities around the world.

Through a longitudinal case study conducted over six years and encompassing 19 key informant interviews, archival research and field observations, the research unpacks the design and masterplanning of condo-ism at CityPlace. It illustrates the ways in which the formal and informal tools of 'design governance' (Carmona, 2017) have regulated the delivery of the mega-project and describes how the principal developer produced an altogether new scale of high-rise condominium development in Toronto that resulted in a high-rise residential design typology that the research calls the 'condominium mega-structure'.

While design excellence has not been achieved at CityPlace, the planners who sought to facilitate the creation of a mixed-use residential neighbourhood on Toronto's former Railway Lands can argue that a vibrant urban district with a permeable street network, new public spaces and neighbourhood-scale retail has emerged. Nevertheless, the research also demonstrates how, over many years, the principal developer ruthlessly exploited the gaps in Toronto's planning and design processes to maximise their profits. This led to nearly double the number of private condominiums being approved at CityPlace than originally anticipated by the City of Toronto, yet over the same period the number of affordable houses delivered at CityPlace was halved and many of the community facilities took years to materialise.

Stepping back from the case, the research argues that the pressure to satisfy the demands of a rapacious residential real estate industry operating in a booming property market should not come at the expense of creating places where communities can thrive. The case demonstrates how these pressures can precipitate the creation of a vertical neighbourhood that is less diverse in terms of tenure, unit size, and mixed use than it might otherwise have been. It concludes that the story of CityPlace is ultimately one characterised by lost opportunities, profit maximisation and an inevitable rise in the density and height of condominium development.

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Key Words: urban design, condo-ism, masterplanning, Toronto, Railway Lands

SYMBOLIC EVALUATION OF HOUSING STYLES ACROSS MAJORS, LOCATIONS, AND GENERATIONS
Abstract ID: 276
Individual Paper Submission

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Built environment researchers have long understood that planners, architects, and other built environment professionals evaluate housing styles differently than lay people (Gans, 1978; Nasar, 1989; Devlin & Nasar, 1989; Akalin et al., 2009; Montañana, Llinares, & Navarro, 2013). The classic study of the symbolic meaning of housing styles (Nasar, 1989) used black and white artistic renderings of six housing styles (Farmhouse, Tudor, Mediterranean, Saltbox, Colonial, and Contemporary), surveying built environment professionals and lay people in two cities (Los Angeles and Columbus, Ohio) about three areas of symbolic meaning (evaluation, friendliness, and status). For this study, renderings of those six housing styles were presented in a survey to a total of 256 students enrolled in online courses at two different universities and asked about those same three areas of symbolic meaning.

This study builds on the classic study and expands it three important ways: first, this study included respondents located all around the United States, including in both the Southwestern U.S. and New England, which is important considering two of the housing styles are common in those areas (Mediterranean and Saltbox, respectively) and previous studies have shown that these housing styles tend to be among the least favored in other locations. In this study, there was an association between location and which housing style was perceived as the friendliest, operationalized as a ranking of the houses from most to least comfortable to approach for help, and this was statistically significant, (X^2=22.92, df=5, p<.001). While Southwestern respondents still ranked the Farmhouse style as the most comfortable house to approach for help, being ranked first by 33.8% of Southwestern respondents, non-Southwestern respondents ranked the Farmhouse style first 58.1% of the time. Additionally, Southwestern respondents ranked the Mediterranean style as the friendliest style almost as often as the Farmhouse, with 32.5% of Southwestern respondents ranking the Mediterranean style first, compared to only 10.5% of non-Southwestern respondents ranking the Mediterranean style first.

Second, this study surveyed an equal number of urban planning students as well as non-planning majors and found evidence that students of the built environment do, in fact, evaluate the built environment differently than others, which is important since built environment professionals make decisions on behalf of the public. Statistically significant associations were found between major and which housing style was highest ranked for winning a house in a lottery (X^2=12.75, df=5, p=.03), major and which housing style was ranked highest for friendliness (X^2=14.86, df=5, p=.01), major and which housing style was ranked lowest for friendliness (X^2=16.13, df=5, p=.006), as well as major and which housing style was ranked highest for perceived status of the homeowner (X^2=14.48, df=5, p=.01).

Lastly, this study also examined generational differences, and found that there was, overall, agreement among the generations in evaluation of housing styles. The only statistically significant association between generation and housing style was with the housing style ranked lowest (or last) as a free house won in a lottery (X^2=27.19, df=15, p=.03).

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Key Words: Housing style, Meaning, Evaluation, Architecture

IDENTITY, PLACE, AND THE WELLBEING OF INDIGENOUS COMMUNITIES: PLANNING AND CULTURE IN THE SETTLER-COLONIAL CONTEXT PROFESSOR MICHELLE THOMPSON-FAWCETT (NGĀTI WHATUA) UNIVERSITY OF OTAGO, AOTEAROA NEW ZEALAND

Abstract ID: 307
Individual Paper Submission

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Holistic Indigenous understandings of wellbeing typically integrate health and development with the physical, spiritual and community environment where a people have their ancestral standing. Accordingly, Indigenous people's meaning in life and self-worth have a particular connection to the place of their historic belonging. Their actions and behaviours may reflect an ancestral integration with landforms and may be manifest in physical and spiritual practices. However, most research on Indigenous wellbeing has been founded on non-Indigenous notions of health rather than broader Indigenous conceptions of wellbeing. In this paper, I explore the associations between the wellbeing of Indigenous communities and their identity in place in the settler-colonial urban design context.

In that context, I suggest that recovering and refreshing a traditional ethic of 'locatedness' would be highly beneficial in (and for) twenty-first century planning. Such an ethic would embrace the distinctiveness of land, language, histories and culture while reawakening a focus on the holistic wellbeing of Indigenous communities commensurate with (post)-colonial planning needs. Although dominant colonial practices reproduce Western ways of being in urban planning and design, in recent decades there has been a significant resurgence of resistance through the application of Indigenous knowledges and praxes.

This paper therefore seeks to offer encouragement via a series of case studies of Indigenous urban design. As a member of an Indigenous community myself, the research is necessarily undertaken through an Indigenist methodological approach. Indigenous methodologies seek to deconstruct Western paradigms of investigation and understanding that perpetuate the invalidation of Indigeneity, and attempt to constitute paradigms centred on Indigenous worldviews. This involves adopting research techniques that are culturally appropriate and politically empowering for Indigenous peoples. In particular, I employ a qualitative approach predicated on the concept of Indigenous self-determination, which refers to research practices and knowledge that is determined and prescribed by Indigenous communities themselves. The case study method has been adopted to investigate, contextually, indigenous participation in urban design and planning.

 My research on Indigenous initiatives demonstrates there is much to be gained by empowering Indigenous communities to facilitate and deliver wellbeing and design that is contextualised to place and identity, in accordance with their own cultural aspirations – geographically positioned, historically embedded, holistically interconnected, consciously specific, but also continually negotiated. Such Indigenous transformation also has implications for dominant society, which needs to be informed, even reformed, by the challenges emerging from the Indigenous world. The basis for optimism comes from the success of the case study initiatives that reassert the potency and integrity of Indigenous philosophies and actions. These philosophies and actions challenge how broader society can envisage the wellbeing of Indigenous peoples in colonised locations as part of the urban design and planning process.

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Key Words: Indigenous planning, Indigenous urban design, Indigenous wellbeing, Identity in place, Settler-colonial societies

'INDETERMINACY' TOWARD UNCERTAINTY-ORIENTED PLANNING IN THE AGE OF CLIMATE CHANGE.
Abstract ID: 352
Individual Paper Submission

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Urban planning and design for climate change adaptations manifest two key challenges: 1. the disjunction between what most climatic models render and what decision-makers require, including precise projections of the magnitude and the frequency of extreme events at local levels, and 2. the uncertainty associated with climate change models because of approximations, inadequacies, or errors. While ongoing improvements in climate modelling and associated downscaling techniques have potential to address the former, the second remains more challenging. A real risk of confusion between past evidence and predictive model outputs is amplified by climatic uncertainty. Thus, the ambiguity of existing information along with its multiplicity of meanings to understand a situation falls in the realm of uncertainty. The degree of this uncertainty of future climate is further intensified when combined with the complex interaction of bio-physical agents and human of an urban area. Additionally, the IPCC 5th assessment report on urban areas revealed that there is inadequate information about the vulnerability, uncertainty, and adaptive capacity of urban built environments. Many scholars, such as Timothy Beatley, recommended a conceptual shift toward 'uncertainty-oriented planning' to meet the challenges of climatic uncertainty over time.

This paper devises the concept of indeterminacy as an urban planning and design tool to cope with future uncertainty. The concept is rooted in John Habraken's 'Open building' and has widely been using in the field of architecture. In the urban planning and design, 'indeterminacy' can be referred as a built-in design potential (capacity) of urban forms (e.g., streets) to accommodate different purposes (when needed) for which they are not necessarily planned. Underlying principles of this concept have long been discussed in the urban design and planning literature (including landscape urbanism, incremental and flexible urbanism); however, it remains isolated from resilience and climate change adaptation discourse. This paper applies indeterminacy to measure the resilience (and adaptive capacity) of Long Bay's coastal settlements in Negril (Jamaica) vulnerable to sea-level rise. While testing the tool, this paper deploys an urban morphology study, which includes land use patterns and the physical characteristics of urban form, including street networks, block patterns, and building footprints. In addition, this paper uses primary data obtained from direct observation and interviews with local professionals. The results reveal that current adaptation planning polices for Negril areas are highly goal-specific because of limited lands for development. In adapting to projected climatic impacts (with uncertainty), indeterminacy can help planners and policy makers be prepared for unknown climatic impacts (slow or rapid) with their limited resources. The paper concludes with a set of urban planning/design typologies to increase the indeterminacy to contribute to uncertainty-oriented planning and climate change adaptation.

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Key Words: Climate change adaptation, Climatic uncertainty, Urban form, Urban planning and design

A STUDY ON THE ENVIRONMENT AND VISITORS' AWARENESS ON SIDE STREETS - FOCUSED ON COMMERCIAL AREAS IN SHINCHON AND GAROSU-GIL, SEOUL -
Abstract ID: 407
Individual Paper Submission

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With the growing importance of commercial street revitalization directly affecting urban competitiveness beyond the vitality of the region, the significance of the side street vitalization has been emerged as commercial streets solely composed of main streets are difficult to turn into visitor friendly areas. However, the continuous decline of the side street based commercial areas made it necessary to improve and manage side street environments.

This paper presents an empirical analysis and study on side street environments in commercial districts and visitors' awareness on them. The purpose is to derive the characteristics and improvements for side street environments which can later be used for revitalizing commercial areas. The first part consists of analysis and assessment on the two different yet comparable commercial districts: Shinchon and Garosu-gil. The study is performed based on the characteristics and measuring indicators which are drawn from related articles that are said to affect the elements of vitalizing commercial areas. For objective analysis, the paper performs trend analysis based on the derived measuring indicators, and for the subjective analysis, a statistics analysis and t-test are performed based on the visitor questionnaire survey.

The result shows that the visitors' satisfaction on Shinchon, known as the less preferred area for visitors before, is not significantly lower than that of Garosu-gil. Side streets in Shinchon wider than 4m in width showed similar visitor satisfaction result with the side streets in Garosu-gil in terms of building connectivity, building continuity and walking activity. In fact, the satisfaction on the streets with between 4m to 6m width was even higher than the side streets in Garosu-gil. However, narrower streets than 4m width in Shinchon resulted in lower visitor satisfaction results in almost every aspect and showed room for improvements. Moreover, the result shows that side streets of Shinchon with more than 4m width should improve their harmonic aspect with the surroundings, cleanliness, transparency and commercial activities.

The result suggests that in order to improve commercial vitalization in Shinchon, side streets with less than 4m of width should be managed to be clean, pedestrian friendly and harmonic with the surroundings to provide comfort; secure accessibility, continuity of stores on the street to increase connectivity between

the street and the space; make excessive use of the stores' outdoor areas to improve transparency. Also, for the streets wider than 4m, they could be managed to improve side street vitalization by securing harmony with the surroundings, cleanliness, transparency and making use of outdoor areas of the stores.

This paper is significant because the results were not only driven by considering the physical environment of the streets, but also the relationship between stores and streets, the activities of people, and the width and composition of the streets. The results of this research can be used as basic data in designing commercial streets in a better place.

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Key Words: Main Street, Side Street, Commercial Vitalization, Street Vitalization, t-test

USING OPTIMIZED WALK SCORE TO ASSESS WALKABILITY AMONG DIFFERENT SPATIAL LAYOUT OF CAMPUSES
Abstract ID: 410
Individual Paper Submission

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Walking is a green way to travel on campus, improving the walkability of campus environment is significant to optimize the walking system, shape mobility patterns, promote the convenience of students' daily life and complement the green campus evaluation system. In terms of GIS algorithm, Walk Score has been demonstrated as a valid and reliable proxy to evaluate access to nearby facilities such as coffee shops, restaurants, grocery stores. This paper is based on the different characteristics of space form, the preference of facilities demand and the difference of walking habits, optimizing the Walk Score method from the aspect of the using frequency, using variety and walking distance, in order to establish an evaluation system to assess the walkability of the campus.

The research aim is to use this method to study the influence of Walk Score and campus space form on the walkability of 9 university campuses in Tianjin around the three spatial layout forms of axis type, group type and free type. The primary goal of this endeavor is to discuss the effect of spatial attributes such as campus planning structure, spatial layout of the built environment, and other characteristics, such as road network density, road intersection density, function mix, campus scale, campus category on walking suitability and behavior intensity.

The results show that multi-center group layout model has the highest suitability, while the centralized axis type has the lowest suitability. Due to the high function density, mix of land uses and dense flow of people, the campus located in the downtown area has higher walking suitability than that located in the suburb. The walkability of small and medium-sized campus of science and technology is better than that of large-scale comprehensive campus because of their compact layout and close relationship between

groups. Moreover, walkability of campus with high street network density is higher than that with low street network density.

Based on the results, this research gives the optimization suggestions to improve the campus walking suitability from three aspects: suitable building density and space form, function mix, accessibility of walking system. Such as following the decentralized group layout principle to allocate the facility to attach to the various functional centers and increase building density with short block, high street network density and configure facilities closely related to the apartment groups, so as to meet the students' daily requirements. In addition, for the construction of the campus surrounding environment, the periphery area of the campus should be closely connected with the living streets with high mixed functions and good facility diversity, in order to improve the vitality of the campus.

Furthermore, for implications, campus planners and policy makers can use this optimized Walk Score method to adjust the campus layout using the least amount of resources to allocate facilities at the proper location to serve for the largest population of students, it can also control the campus size to reduce occupying large amounts of lands and wasting resources, in order to improve the sustainable development of the green campus. Researchers can combine micro-scale attributes of the built environment such as imageability, complexity, enclosure, human scale and transparency to explore the campus form and measure the built environment in different cities and at different times based on this investigation. For example, through a detailed qualitatively observation to record physical environment characteristics and the number of pedestrians, in order to explore the differences and the inequity in campus walkability from the street perspective and analyze the influence on the quality of walking experience and actual walking behavior.

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Key Words: walkability, the built environment, campus form, walking behavior

WATER PLANNING FOR CITY DESIGN: UNCOVERING PURPOSEFUL EFFORTS IN NORTHWEST INDIA
Abstract ID: 459
Individual Paper Submission

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What is the relationship between water planning and spatial design of human settlements and associated land uses in dry, arid regions? This presentation will offer insights from a three years long joint-studio effort, undertaken by the department of Urban Planning and Policy (UPP) at the University of Illinois, Chicago, École Nationale Supérieure d'Architecture (ENSA), Toulouse and the Aayojan School of Architecture (ASA), Jaipur, studying water planning in the historical settlements of Amer and Bundi situated in the Northwestern Indian state of Rajasthan.

Given the climate (scanty rains, lack of perennial rivers) and the turbulent political context, we hypothesized that the founders first planned for water; carefully mapping the terrain and identifying

watersheds before locating lands suitable for a wide variety of relevant uses like rainwater storage, defensible settlements, agriculture and grazing. Using a variety of sources including scholarly literature, historical maps, satellite imagery and interviews with water experts, we then mapped the regional-scale water infrastructure on the actual ground in and around the two settlements.

Our findings reveal a sophisticated rainwater collection and storage system framing a clever city design approach across the spatial scales of households (dug wells, underground tanks called Tankas), communities (underground tanks and stepwell or Baoris) and entire settlements (ponds or lakes). Unfortunately, the historical water infrastructure slowly fell into disuse and disrepair as people and communities grew accustomed to accessing freshwater directly from taps after the advent of piped water supply during the late colonial / early post-independence period in the mid-20th century. Our findings not only suggest widespread societal support for a regionally-oriented planning thinking in the pre-colonial period but also highlight the fundamental importance of first planning for water (before siting other land uses) and clever regional-scale city-design approach for the long-term sustainability of human settlements in an increasingly freshwater-deficient world.

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Key Words: City Design, Water Planning

THE EFFECTS OF DESIGN REGULATION AMENDMENTS ON PROTECTING THE PUBLICNESS OF PRIVATELY OWNED PUBLIC SPACE IN TAIWAN
Abstract ID: 461
Individual Paper Submission

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A goal of urban design is to create good public spaces by using public policies to direct the private developments of open spaces and other public facilities. The issue of publicness arises due to the nature and the private ownerships of quasi-public spaces. Academic attention has resurged around this issue as the number of privately owned public spaces (POPS) has been increasing in the name of public-private partnerships under the neoliberal approach to urban governance. This study examines the Comprehensive Design Regulation, the oldest urban design regulation still in effect that is related to the provision of POPS in Taiwan. The purpose is to study the quality of this policy and its impact on the production of open space from the perspective of publicness and to determine whether the Regulation's two amendments have produced any effects.

This study takes Kaohsiung City as a case area and analyzes the POPS site plans in the design review reports. We conduct a view analysis with Isovist to generate an indicator of the publicness of POPS at the individual site level and use an aggregated statistical and spatial analysis at the city level. The methods include descriptive statistics, Isovist graph analysis, cluster analysis, and GIS mappings to analyze the characteristics and distributions of POPS by the type of publicness. This research further creates three periods separated by the two regulation amendments' implementation dates to enable an analysis of variance to statistically test whether or not the regulations have any effects on the publicness of POPS. This study is expected to 1) reveal the evolution of POPS' detailed configurations, their typologies, and spatial distributions, and 2) provide a holistic analysis of its publicness at the city level by incorporating quantitative methods. We aim to develop a prototype for researching the publicness of POPS and the effects of regulatory amendments for future reference.

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Key Words: publicness, privately owned public space, view analysis, design regulation amendments

EXPLORING A RELATIONSHIP BETWEEN FAMILIARITY, URBAN NEIGHBORHOOD ELEMENTS, SOCIAL CLASS AND FEAR-OF-CRIME
Abstract ID: 502
Individual Paper Submission

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Familiarity in urban residential neighborhoods and perceived personal safety and fear of crime have been deeply discussed in the literature. Physical or geographical familiarity and familiarity with residents in a neighborhood are observed to correlate with a heightened sense of safety (Drakulich, 2015; O'Brien et al., 2014), and make individuals feel 'at ease.'

In this research, we explore the role of social class – precisely income strata in familiarity, and thus in perceived safety. The relationship between income and perceived safety has not been discussed deeply in the context of the neighborhood. Mullen and Donnermeyer (1985) have discussed income as a subset of trust, on the effect on perceived safety. Kanan and Pruitt (2002) found the effect of income on fear of crime but were unable to explain the causal pathway. We intend to understand if residents of a neighborhood of a particular income stratum would feel personally threatened in a neighborhood of different income strata. We ask the following questions (a) Does fear of crime change when residents of a particular neighborhood are in a neighborhood of different income strata? Furthermore, (b) Is this fear of crime-to-self influenced by physical cues and attributes associated with neighborhoods of different income strata?

We conducted twenty-four walk-along interviews in six neighborhoods in Salt Lake City, Utah. Two of the neighborhoods are high income, two are medium income, and two are low income. We recruited participants from all six of the neighborhoods. Each participant walked around a pre-determined route in their neighborhood, and a route in a different neighborhood of a different income stratum. We asked participants to look for cues or attributes of the physical environment that would affect their safety.

Primary results indicate that fear of crime-to-self *does* change in a neighborhood of different income strata, and perceived safety is connected to physical familiarity. The location of the participant in the income strata, and thus their neighborhood of residence, also influences perception of safety. Second, physical attributes – for example lot size (high-income neighborhoods have larger lot sizes than low-income neighborhoods), or material of fence (chain link fences occur the most in low-income neighborhoods, and rarely in high-income neighborhoods), are sometimes associated with an income stratum and can be an essential factor in perceived safety.

In summary, the interaction between neighborhood physical attributes and income stratum is an important factor in influencing fear of crime. Fear of crime influences the quality of life and health outcomes, to name a few. We take an essential step in exploring a relationship between neighborhood design and character, and sociology, which influences environmental behavior. This interdisciplinary research is an empirical contribution to understanding perceived safety.

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Key Words: urban neighborhood elements, social class, perceived safety, fear of crime, familiarity

ASSESSING NEIGHBORHOOD STREETSCAPE FEATURES FOR PEDESTRIAN ACTIVITY: A CASE STUDY IN SHANGHAI
Abstract ID: 506
Individual Paper Submission

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Drawing upon research on the relationship between the built environment and walkability, this study aims to understand the impact of streetscape features on walking-friendly environments in Shanghai. The research questions include identifying streetscape features related to pedestrian count, and examining whether the relationship between streetscape features and pedestrian count is spatially dependent. With these in mind, the study develops a spatial model that captures the association of streetscape features with pedestrian activity.

Baidu Street View (BSV) images and street networks of Shanghai are collected through the Baidu API and Open Street Map. Pedestrian counts from BSV images are used for measuring pedestrian activity. Streetscape features from BSV images such as the proportion of sky are extracted through SegNet to achieve an objective and accurate pixel-width image segmentation and classification. The study then identifies and refines a number of streetscape features related to pedestrian count from literature. Cluster analysis is conducted to examine whether spatial autocorrelation exists. The spatial relationship between streetscape features and pedestrian count are analyzed using geographically weighted Poisson regression (GWPR) models.

The positive value of Moran's I indicates the clustering of pedestrian counts. The LISA Cluster Map provides the statistically significant locations of spatial clusters with two types of spatial autocorrelation: high-high and low-low. BSV images located at high-high clusters display the presence of residential-commercial mixed use, the neighborhoods connecting to the street, the presence of windows on the street, and the presence of a variety of pedestrian generators such as restaurants and stores. On the contrary, BSV images located at low-low clusters display the presence of gated communities, single residential land use, few pedestrian generators, and neighborhoods close to highways.

The GWPR models have a larger percent deviance explained and a smaller AICc value than the OLS models. Thus, the results from the GWPR models are more pronounced compared with those from the OLS models, indicating a better fitness and explanation power of spatial analysis. The proportion of sky is negatively associated with pedestrian activity. The number of dominant building colors is positively associated with pedestrian activity. The presence of buildings with identifiers is negatively associated with pedestrian activity. The presence of street furniture and the presence of windows on the street are

positively associated with pedestrian activity, which are consistent with the previous studies. The presence of gated communities is negatively associated with pedestrian activity, since external surrounding streets of gated communities are typically wide arterials with fast traffic. The presence of street barriers is negatively related to pedestrian activity. Pedestrian generator density positively affects pedestrian activity, since the measure incorporates a series of amenities related to walkability.

The improvement of robustness in the GWPR models compared with the OLS models demonstrates the significance of controlling for spatial autocorrelation. The findings confirm previous studies on the association of several streetscape features, including the proportion of sky, windows on the street, and street furniture presence, with pedestrian activity. These features are crucial to the richness of the pedestrian experience. The spatially varying impact of each streetscape feature on pedestrian count are quantified and interpreted based on Shanghai's specific context, such as the large-scale presence of gated communities and street barriers. Contrary to the traditional suggestions for fostering pedestrianism, increasing urban density, street connectivity or land-use mix may be ineffective to promote walking in Shanghai. The study highlights the importance of modifying micro level streetscapes in addition to macro-level built environment to affect pedestrian experiences. The findings advocate a more fine-grained examination of the environmental features related to walkability and may be more cost effective and easily modified than macro characteristics such as the D variables.

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Key Words: streetscape features, pedestrian activity, geographically weighted Poisson regression, cluster analysis

NEW WORKING SPACES – NEW URBAN PLACES LOCATION PATTERNS OF NEW WORKING SPACES IN LISBON
Abstract ID: 573
Individual Paper Submission

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The paper explores the role of New Working Spaces [NWS] (Co-creation, Makerspaces, and similar structures) in the development of urban self-regenerating processes in obsolete places of the city and their location patterns. It seeks to explore the location patterns of New Working Spaces [NWS] in Lisbon, as a testbed for further contribution to 'COST ACTION 18214 'The Geography of New Working Spaces and impacts on the periphery' [1]. These places, while peripheral concerning social and economic wealth, are often located in potential areas in the city. Furthermore, if also providing services to the community or even offering co-living structures, they may become beacons in former no-ones land.

The work will focus in Lisbon, Portugal, where the phenomenon is not only striving but contributing to

the rehabilitation of different types of urban fabrics (Mouraria) and sites or compounds (Beato) on locations under the umbrella of Start-Up Lisboa. The research is at an exploratory stage. Hence the methodology is expected to undergo adjustments. Research should include:

1. Forms of urbanization and how they define NWS' location patterns, such as available former industrial sites, the proximity of intermodal transportation hubs and lad use diversity; hence, the potentiality of becoming a network node, possibly a future centrality;
2. land-use evolution and potentialities to accommodate these NWSs and contribute to consistent ecosystems, into a broader span of architectural options and typologies such as the coexistence of traditional housing and businesses with co-living and co-coworking with cultural and community profiles;
3. urban planning tools and funding, including the identification of the adequate ones to intermediate between local and more flexible approaches to the location of NWS and the regular national planning system hierarchy;

Start-Up Lisboa was founded in 2011 by the Municipality of Lisbon, Bank Montepio and IAPMEI, the Portuguese Agency for Competitiveness and Innovation. It was one of the most voted ideas in the 2009/2010 City Council Participatory Budget and represents an innovative perspective on the future of the city, not only by official institutions but, primarily, by its citizens [2]. Its mission encompasses not only supporting companies in their early years and the creation of new jobs but also expanding the ongoing urban rehabilitation of Lisbon's core to more peripheral and underprivileged fringes [3]. Invest Lisboa is another partner in the evolving ecosystem of start-ups, accelerators, multinational headquarters. Fruitful choices (e.g. being part of the Fab Lab network), vivacity, the keen capacity to attract young and resourceful entrepreneurs both national and foreigner, would lead to hosting the Web Summit and a first appearance in the Startup Genome Index.

New centralities have evolved in Lisbon since the 2008 crisis, under the Strategy for the Municipal Master Plan for Lisbon (already under elaboration and later approved and ratified in 2012, with later amendments). The Plan would anchor new centralities in the railway belt's stations, especially those in need of more in-depth urban rehabilitation (formal industrial fringes) and core areas losing population and activities, civic engagement and a range of innovative activities (Team Mission in Mouraria [4]). The Mouraria Creative Hub was the first incubator devised to support business ideas and projects in the fields of Design, Media, Fashion, and Tiles. Beato Creative Hub would follow it, in a large former Military Maintenance and Warehouse site in the Eastern side of Lisbon, marked by a mixture of architectural and urban heritage, industrial remnants and derelict land, real-estate projects that will clash with the local communities.

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Key Words: New Working Spaces [NWS], Location patterns, Urban rehabilitation, Urban design and public space, Lisboa

PRIVACY TERRITORIES IN STUDENT UNIVERSITY HOUSING DESIGN: INTRODUCTION OF THE HIERARCHY OF ISOLATION AND PRIVACY IN ARCHITECTURE TOOL (HIPAT)

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Choosing where to live as a university student may be one of the greatest determinants of student success and satisfaction. Pushed by students' demand for more privacy, the traditional residence hall has been challenged over the last two decades with new and diverse types of on-campus units constructed. Whereas traditional, dormitory halls with shared amenities foster more socialization and student interaction, new models of self-contained units have led to a privacy-isolation contradiction; students demand increased privacy but more privatized units create isolation to the detriment of students' well-being, sense of belonging and academic performance. Literature on student housing has largely focused these two types of design and little has been studied in how these new typologies affect student satisfaction, well-being and academic success through a spatial design lens. This paper brings together the literature of student development, student development practice and design to examine housing design through the lens of socialization-privacy spaces and the ability to foster human interaction.

As student residences evolve, coupled with complexity of types, units and amenities, there is a need to be able to classify the relationships of students with their environment and analyze the built environment's impact on privacy and control of space. This paper proposes the Hierarchy of Isolation and Privacy in Architecture Tool (HIPAT), a newly developed spatial analysis tool, as a method to measure, analyze and compare different levels of privacy, human interaction and their transformation by control mechanisms in the built environment. Building on Altman's levels of territory, HIPAT establishes six privacy levels within a hierarchy of territories, suitable for the complexity of student housing. The spectrum of control begins from an individual's control of private space, to small group spaces, and ending with larger spaces and public areas controlled by the university. HIPAT applies the hierarchy visually to diagrams of buildings to show the spatial relationships of control and analyze opportunities for encounter and socialization.

Desired privacy is the balance between excess privacy, leading to feelings of isolation, and inadequate privacy, leading to feelings of crowding. These can be regulated by behavioral and environmental mechanisms to ultimately achieve the preferred level of privacy. Pitman Hall at Ryerson University, which contains a variety of unit types, was used a case study to analyze socialization opportunities. Using HIPAT, the range of possible interactions and the activities that would most likely occur in each space were examined and compared between unit type and within spaces of different privacy levels. The tool reveals the spaces where a student has complete control, spaces of negotiation, spaces where control is limited and transition areas between these spaces. The level of control was quantified demonstrating how much control and therefore privacy each student would have in a particular unit. Here we begin to uncover the impact of design on students' daily life, interactions and well-being.

HIPAT provides a tool to aid university administrators in evaluating current housing offerings and planning for future housing from a privacy-socialization lens. Universities bring together students of diverse demographic, socioeconomic, and cultural backgrounds where each student will have a different appreciation of privacy and expectations. HIPAT can assist in the shaping of university housing portfolios, creating residences and units that will create a space allowing all future students to thrive. Further, the tool can be used to develop a new unit typology taxonomy which will allow a common language of residence types to lead to more nuanced discussions of student living spaces. Design shapes the spaces we live; student housing should go beyond the basic role of providing shelter to play a positive role in impacting the student experience at university.

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Key Words: student university housing, privacy, design, well-being, spatial analysis

A LIVABILITY AND SUSTAINABILITY FRAMEWORK OF VERTICAL CITIES IN ASIA
Abstract ID: 589
Individual Paper Submission

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Asia is the world's most populous continent and many Asian cities have the high population issue. A new paradigm of sustainable and land-efficient urban growth, Vertical City, has received increasing attention and interests. Hong Kong and Singapore are two typical cities that epitomize this approach (Heng, 2013). With the increasing emergence of high-rise buildings, the verticality from the building dimension and related research have been popular for decades. However, unfortunately, cities are grossly unprepared for integrating tall buildings. The chaotic proliferation of this building typology may lead to "vertical sprawl", that could have worse consequences than "horizontal" sprawl, as they may aggravate sustainability challenges, including social and racial segregation, traffic congestion, overcrowding, and overtaxing the urban infrastructure. Relevant research on the vertical city from the urban scope remain relatively rare, and most studies exclusively focus on the non-Asian context. The practical necessity and the literature gap motivates this research.

In this research, the "vertical city" refers to a city with several highly dense, mixed-use urban areas or townships made up with different high-rise buildings for integrated live-work-play development. Based on the Vertical Cities Asia (VCA) International Design Competition from 2011 to 2015, we aims to explore how to make vertical cities more sustainable and livable in the Asia context centered on five aspects: fresh air, aging, urban agriculture, connection, community. These five issues highlight the key social problems that matters to vertical cities. How to ensure the fresh air, accommodate the ageing populations, incorporate the urban agriculture, improve the connection to amenities, capital and public services, and synergize community dynamics is meaningful towards an inclusive and environmentally sustainable growth pattern in the dense context. This research could provide significant public policy implications regarding urban growth, social equity and well-being.

First, a comprehensive review study on the present literature and the VCA International Design Competition & Symposium will be conducted, to figure out the connections and difference between "vertical city" and other urban design and planning concepts, and to summarize the existing knowledge centered on the five research questions. Second, based on the Singapore context, a scenario-based Livability and Sustainability Framework for Vertical City is established, including the outcome indicators that measure the sustainability and livability of vertical city in the social, economic and environmental pillars and indicate the general planning principles. Third, a comparative study is conducted to refine the framework and illustrate its applicability to both Singapore and other representative Asian cities (like Tokyo, Hong Kong, Beijing, Shanghai, Delhi).

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Key Words: vertical city, high density, mixed use development

PUBLIC SPACE IN SUPPORTING URBAN INFORMALITY AND HYBRIDITY OF POLARIZED SOCIETIES OF THE GLOBAL SOUTH
Abstract ID: 605
Individual Paper Submission

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Communities across the global south are experiencing extreme challenges of increased polarization amid rapid urbanization and globalization. In many such cities of developing economies, pressures of domestic and international migrations give rise to social contestations and conflicts over the use of urban amenities like public spaces. These public spaces are not just for social gathering but are also means of survival. In India, the advent of the neoliberal economy in the 1990s gave rise to an uneven economic growth creating two extremes of the society – the liberalizing 'middle class' and 'new rich'; and the marginalized migrants from rural areas and neighboring countries. While this polarization triggered a 'politics of forgetting,' it also gave rise to 'informality' – a characteristic of subaltern urbanism signifying auxiliary processes of production and management of space and economy.

Kolkata has a population of around 4.5 million, of which 31.35% reside in slums, 19% are below the poverty level, and about 52% of its workforce constituting migrants (Census 2011). Despite its high population density, only 5% of the city area is open public space, making them highly contested urban amenities for informality. New Market Square is one of such places that situates in proximity to vast slums and cater to varied social classes as an essential commercial, social, cultural, and political epicenter of the city. Within the context of the square, the study asks – what various forms of relationships exist between them? What is the meaning and value of public space to different social classes? And finally, how public space support class relations?

From 2017 to 2019, the study conducts documentary based social inquiry through a series of systematic on-site observations and semi-structured interviews on the users of New Market Square. First, the study documents and maps the users, their typologies, activities, interactions, territorial and temporal patterns to understand the forms of cross-class interactions. The interviews then further analyze the users' purpose of visit and attachment to the place to understand the meanings and values of public space to different social classes.

The study finds four distinct user groups in New Market Square - insiders, outsiders, selectively insiders or outsiders, and law observers – representing the extreme poles of the society by defined by class status. Interactions between these social classes occur in forms of – economic, cultural, empathetic, and social exchanges; verbal, tacit, antagonistic, and political negotiations; territorial, intrusive, religious and careful conflicts; and symbiotic, visible, sympathetic and hierarchical resolutions. In terms of meanings and values, the lower classes and marginalized groups recognize the square as a space of survival, liberation, and recognition. In contrast, the middle and upper classes conceptualize the square as a space of consumption and 'adda' - free-spirited intellectual chitchat. Public space facilitates a symbiotic relationship among various social classes supporting the informal means of living and occupation for the marginalized populations. Moreover, the square fosters hybrid forms of 'class,' 'power' and 'identity' maintaining the co-presence of 'differences' and 'in-betweenness' within the same spatial realm.

In polarized societies like India, public spaces act as hybrid spaces catering to the needs of diverse cohorts – places for communal resolutions amidst extreme class contestations. This study intends to portray the

value of such public spaces in supporting 'urban informality' and 'hybridity' as lifelines when top-down and formal initiatives fail to serve the disadvantaged populations. Cities of developing economies should take advantage of the symbiotic relationships between social classes by investing in public spaces like New Market Square that play an essential role in creating an ecosystem of class-cohesion.

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Key Words: Social Class, Public Space, Global South, Kolkata, India

FILLING THE GAP: EXPLORING HOUSING, URBAN DESIGN, AND DENSITY IN THE STUDIO
Abstract ID: 611
Individual Paper Submission

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With an estimated population of nearly 12 million people, the city of Sao Paulo, located in southwest Brazil, is one of the urban scenarios that exemplify the accelerated urbanization experienced in Latin American cities in the 1950s and 1960s[1]. This condition helped shape cities where segregation and juxtaposition act not as opposite poles, but as phenomena that entangles itself in any space deemed urban. Paulista Avenue, one of the most iconic places in of Sao Paulo, served as ground for sixteen sophomores and fifteen junior undergraduate architecture students to develop possibilities of urban density as a new ground for housing.

The negative space is usually understood as an empty area; however, in this collaborative architecture and urban design studio, the negative was the site. The assignment questions were; if existent density and context are the hard edges of this current urban scenario, how the infill is appropriated towards a healthy future for the city? If the sky is the limit, how this new density occupation can be defined? How can cities grow on top of one another without neglecting each other, or its inhabitants? To investigate these propositions, the students had a research seminar exploring relevant concepts situated at the base of the studio's design philosophy, such as enablement[2], flexibility[3], open building[4], and self-help[5]. These elements of participation applied to the production of housing helped establish the theoretical framework for the envision of students' housing proposals.

Defiant and flexible housing scenarios surrounded by public space, different contexts, and contrasting cultures were developed in the class as a contribution to how contemporary citizen architects enhance the urban space through architecture. Established as a flexible space that has been enduring urban, architectural, and cultural transformations since its construction, Paulista Avenue also holds its ground as the core of all the relationships that take part in the city. The public then becomes more than an attribute; it becomes a verb. Thus, housing becomes more than a shortage; it becomes a necessary city embodiment.

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[1] Bouillon (2012)
[2] Turner (1972)
[3] Schneider & Till (2007)

[4] Kendal & Teicher (2000)
[5] Ward (1976)

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Key Words: Housing, Urban Design, Density, Flexibility

THE TAO OF PUBLIC SPACE: OPEN URBANISMS AND THE POWER OF THE QUALITY WITHOUT A NAME (LESSONS FROM MONTREAL)
Abstract ID: 625
Individual Paper Submission

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There are two main epistemological approaches to design: working with a program and working without a program. The former entails departing from a series of pre-established elements and forms that respond to a design problem and the latter entails exploring the nature of a design object by interrogating its ultimate purpose and raison d'être. The driving question of programmatic design is often a variation of, how should the object look like in order to meet the program? Non-programmatic design poses the question of, what does the object ultimately do? If the object in question is – say – a chair and we use the programmatic approach, the possibilities in terms of shapes, colors, textures, weight and materials is endless, but the result is ultimately a chair. In the non-programmatic approach, we depart from the fact that a chair is an artifact used for seating (that is what a chair does). Thus, the response to the question of seating can be addressed with a puff, a bench, a yoga mat, a rug, a stool or also with a chair. This is applicable to practically all the fields of design.

In this paper, I stress the differences between these two epistemological approaches and explore the potential and limitations of the non-programmatic approach, which even though has broader formal and functional possibilities it is far less used in the planning practice. More specifically, I explore the notion of open urbanisms (De la Llata, 2015) as a non-programmatic methodological approach to urban design. Open urbanisms combines critical design methodologies such as pattern language design (Alexander, 1977), placemaking and deliberative planning (Forester, 1999), and builds on participatory planning approaches used in the context of the square movements of 2011-14. And, it is based on two main principles, (1) planning the space from the space itself and (2) working with open-ended design questions. The method consists in undertaking deliberative processes (similar to assemblies) and design workshops in situ in order conceive spaces based on design principles rather than using a design program.

I have applied this method in the design of several public spaces (such as parks, placettes, alleyways and public squares) in Montreal in the last 5 years. In this paper, I specifically draw from a particularly illustrative case study to design placette and a park chalet in the borough of Notre-Dame-de-Grace in Montreal. In this exercise, the participants concluded that the space should be designed based on a number of imprecise principles (such as versatility, interactivity, modularity and so-called "seasonality") that resulted in a multifunctional esplanade that significantly differed from the previously existing

placette. I conclude that the non-programmatic approach shows a strong parallel with Alexander's notion of "the quality without a name" as well as with the notion of the Tao, a connection that has been rarely mentioned in urban design theory (Dovey, 1990) but that is crucial to explore further in order to create more vibrant and inclusive public spaces.

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Key Words: urban design, public space, pattern language, open urbanisms, critical design

PUBLIC SPACE RESEARCH FUTURES
Abstract ID: 640
Individual Paper Submission

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Public space has the potential to be an arena for expression, a forum for dialogue and contestation, a space for conviviality and leisure, for economic survival and refuge, and a site for exchange of ideas. One one hand, in the twenty-first century city, public space is inextricably linked to capital and is actively used as a catalyst and commodity by and for capital. On the other, as traditional public space gets usurped and produced by Neo-liberal processes and profit-oriented actors, other spaces have been claimed and new types of public spaces have emerged. Unable to claim the institutional public space—to make it their own, to use it for individual and group expression, and to help form their own unique identities—some ignored or marginalized groups, such as the poor, youth, the aged, many ethnic minorities, women, and others with different outlooks and lifestyles have found and occupied new geographies of public space in the urban landscape.

The "New Urban Agenda", the 2016 document of Habitat III, the Third United Nations Conference on Housing and Sustainable Urban Development, has affirmed the importance of public space as a key to creating more socially, economically and ecologically successful and sustainable cities. There is a proliferation of research on public space but limited exchange of knowledge between disciplines. To address this, over a dozen scholars from urban design, planning, anthropology, environmental psychology, economics, and sociology collaborated to create a public space database as a systematic effort to consolidate research findings, and bridge the epistemological gaps between disciplines. Based on more than half-a-century of theoretical knowledge and research on public space, the multi-disciplinary team created a two-tiered classification to organize the research articles. 14 Organizing Categories classify the broad domains of research. Each Organizing Category contains three to eleven Key Concepts. A rigorous 8-step method helped select and enter relevant articles into the database. The team has researched 29 journals in urban design, planning, anthropology, environmental psychology, sociology, geography and urban economics. Many were searched in their entirety from their first issue to 2017, others for the last fifty years of publication and some from 2007 to 2017.

The database has synthesized 400 empirical research articles into a working repository. Some of our findings show that over half of these address three Organizing Categories — public space and social relations, public space and social interactions, and public space and design. On the other end, there is very

limited research on public space and environment, artistic expression, and public space and care. Regarding behavior, majority of empirical research is in social exchange, crime and fear response, identity, cultural expression and walking. The least researched are working, health, performance and economic transactions. Even though there are obvious limitations to researching only English language journals, the results present very useful information on a "geography of research" with significant gaps. These are only some findings and this paper will present many more in detail, drawing new conclusions, and identifying significant gaps requiring further research. Ultimately, this paper will discuss the path forward for public space research in planning, urban design, geography, urban sociology, and related disciplines.

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Key Words: Public space, synthesis, research gaps, public space research futures, multi-disciplinarity

MEASURING STREETSCAPE VISUAL COMPLEXITY AND ENCLOSURE FOR WALKABILITY: APPLYING DEEP LEARNING ON GOOGLE STREET VIEW IMAGERY
Abstract ID: 650
Individual Paper Submission

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Multidisciplinary researchers and practitioners have been exploring ways to improve physical activity levels through modifying the built environment. Streets and buildings are important elements of the built environment and have a great influence on the fabric of places where much of the physical activity occurs. Zhang and Yin (2019), pointed out, however, that the research community has been focusing primarily on the D variables characterizing the built environment such as density, diversity, design, distance to transit, and destination access. Highlighting the more nuanced aspect of design and impacting pedestrian experience, the street scale design qualities are different from the more macro scale Ds on urban structure and form with regard to their impact on walkability. The streetscape design has been increasingly recognized by recent studies as one important factor requiring more attention.

Visual complexity and enclosure are examples of perceptual streetscape qualities related to affective assessment of the built environment and streets (Yin, 2017). They contribute to how pedestrians behave and feel walking on a street in ways that are not explained by the more macro scale D variables. Many studies have found that pedestrians' preference and satisfaction depend on these perceptual qualities (Yin and Wang, 2016).

The quality and reliability of the data collected and validity of the methods used to measure the built environment characteristics such as visual complexity and enclosure influence the quality and validity of the outcome of the studies that examine the relationship between the built environment and physical activity (Yin et al., 2013). There are no standard definitions for the streetscape design qualities such as visual complexity and enclosure. More importantly, current studies rely heavily on manual data collection through field work and survey with constrained sample sizes limited to small study areas. The data collected are often subjective and inconsistent across surveyors (Yin and Wang, 2016).

This study aims to push further the development of objective and quantitative measures of visual

enclosure and complexity applying deep learning on Google Street View imagery to help assess and understand their impact on walkability empirically. Built on Cavalcante et al. (2014) and Yin and Wang (2016), we focus on the assessment of building colors and continuous building facades that form street walls as representations of visual complexity and enclosure with the help of Convolutional Neural Network and Fully Convolutional Networks.

We collected parcel data from Erie County Assessor's Office, and street and orthoimagery data from New York State GIS Clearinghouse. Based on these data collected, we created sample location's coordinates that randomly scattered in the city. Following the method and suggestions proposed by Yin et al. (2015) and coordinates information on the sampled locations, 2784 Google Street View panoramic images were collected from 212 street blocks sampled in the City of Buffalo.

We extracted information on building colors and street walls applying fully convolutional neural network. CNN was used to learn classifications based on raw pixel input and its distribution. Then Fully Convolutional Networks (FCN) were developed to segment the image using the features learned by CNN.

The results of the study can help to substantiate the association between the built environment characteristics and pedestrian experience and provide empirical footing for policies and design codes aimed at developing built environment interventions to improve experiential streetscape quality to make them attractive for walking.

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Key Words: Visual Complexity and Enclosure, Walkability, Deep Learning

CHILDREN'S PARTICIPATION IN CITY-BUILDING: PLANNING FOR INFORMAL PLAYSPACES IN TORONTO
Abstract ID: 654
Individual Paper Submission

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There is a growing concern in planning discourse that the future of cities is childless. Despite the efforts of anti-sprawl planning movements such as Smart Growth that aim to keep a diversity of households within the urban cores, families with children are still more likely to reside in the suburbs (Estiri & Krause, 2018).

One of the influential factors in attracting families with children is the amenity provision for children's play. Parks and playgrounds are now widely accepted as children's formal playspaces in urban areas. However, the way the public realm itself can offer informal play opportunities has been overlooked within planning practices.

Previous research demonstrates that the availability of playgrounds does not necessarily guarantee their usability and functionality (Veitch et al., 2006). Furthermore, it has been argued that formal playgrounds alone do not entirely meet children's playing needs in urban environments (Hanssen, 2019). Therefore, it is important for planning to aim for play-inclusive public spaces that can serve both adults and children.

Providing informal play opportunities within the public realm is particularly important when it comes to dense urban neighborhoods with limited open spaces to be dedicated to parks and playgrounds. The challenge is that planning for a play-inclusive urban public realm can be very context-specific. Meaning that creating informal playspaces is, at least in part, related to the lived experiences of children and depends on the social and geographical dimensions of the area.

The purpose of this paper is, therefore, to take a socio-spatial planning approach to address children's playing needs. Socio-spatial planning is based on the dynamic interactions between people and places (Erdiaw-Kwasie and Basson, 2017). In other words, while public spaces influence the form and quality of children's play, children can also make changes to their environment to create and modify playspaces according to their needs. Therefore, it is important to ask 'how do children perceive and transform certain features of the urban public realm into informal play opportunities?'

In order to closely examine children's play experiences in urban environments, Thorncliffe Park neighborhood in Toronto, Canada is used as a case study. Although located in mid-town Toronto and characterized by its smaller housing units and high-rise dwelling types, the share of children's population is relatively high (27%) in this neighborhood as compared to the city-wide percentage (15%).

Moreover, the percentage of immigrants living in Thorncliffe Park neighborhood is 63% of the total neighborhood population. This number is the highest among the neighborhoods of a similar profile that are located in central Toronto (downtown and mid-town). Given the existing cultural diversity of the city of Toronto, this case study provides useful information regarding the correlation between children's cultural background and their informal play experiences within the neighborhood.

This study uses walk-along interviews with local children to identify potential informal play locations along the traveled pathways from home to the existing neighborhood parks. The information children provide is recorded as photographs and maps complemented with children's explanations of those locations. Later in the study, children will participate in design charrettes during which they are asked to design/modify one of the identified play locations in the neighborhood.

The results of this study inform local planning practices to provide wider play opportunities through a network of formal and informal playspaces, and consequently attracting more families with children to the urban cores. Overall, it is necessary to acquire a socio-spatial planning approach that values children's active citizenship and their participation in the processes of city-building (Francis & Lorenzo, 2006). The aim is to promote planning that gains insight by focusing on children's lived experiences besides relying on available design guidelines.

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Key Words: Informal playspaces, Urban neighborhoods, Children's participation, Socio-spatial planning

GEOGRAPHIES OF URBAN UNSAFETY: HOMELESS WOMEN AND MENTAL MAPS
Abstract ID: 692
Individual Paper Submission

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This study explores the intersection of urban unsafety and the marginalized community of homeless women; the experiences of homeless women are not well studied, understood, and often overlooked in research and policy. The research investigates the question of "How do homeless women perceive and navigate unsafe urban space?" Core here are homeless women's perception and identification of specific locations/places as unsafe, their responses to such unsafety, and the spatialization of these unsafe locations and responses. The research framework is phenomenological, focusing on the lived experiences of homeless women.

Mental maps and interviews are the primary data collection tools. The participants create mental maps of the spaces they live in and travel through, of locations/places that are unsafe (scale of 1-3, low to high unsafety), and their responses to unsafety. In a semi-structured interview format, the woman and I then discuss her map, which allows me more flexibility to pursue an idea or theme in more detail. Often used in spatial research, the mental mapping process is the critical source in gathering these stories. Information surfaced includes detailed unsafe locations/places, reasons why the space is unsafe (e.g., men on drugs, lack of lighting, traumatic event occurred there, neighborhood not kept up), what response they make (e.g., avoiding that place, travelling only during the day), which life activities are impacted by unsafe space (e.g., not going to a medical appointment in a perceived unsafe location), and their housing history over 12 months or so.

Mental maps demonstrate the dynamic lives of homeless women, and through GIS the spatialization of unsafe urban spaces and the women's responses present powerful visual stories. Mental maps offer an often-invisible group an opportunity to make themselves and their stories more visible. Further mental mapping with these vulnerable participants is an act of agency and power as they create the research through their stories. Mental maps allow a marginalized and difficult to research group the way to express their perceptions and understandings of space and unsafety.

Preliminary findings confirm the housing insecurity of the homeless women and the fluid nature of homelessness (i.e., individuals in and out of homelessness). Findings also established the physical and social isolation of these women – for example, having no or very little contact with their families. Most participants (85%) experienced trauma/violence as a child and/or adult. Results also showed the fragmentation and spatialization of services (e.g., medical care, therapy). Nearly all women (95%) consider buses and transits stops as highly unsafe for them. Findings also demonstrated the impact of the built environment on their perception of urban unsafety; for example, large, open spaces; streets without sufficient lighting; and neighborhoods with houses not well maintained all are perceived as highly unsafe.

This project has direct relevance and implications for research, policy, and provision of services. Homeless women are often overlooked or ignored in research; it is imperative that the Academy's research be more inclusive of these marginalized groups. Rarely used in social science studies, mental maps are wonderful tools for gathering the stories of a marginalized groups. The built environment is critical to the homeless women's perception of urban safety; policy makers could address these by making public transit safer, adding more lights, fixing streets, etc. Finally, those who provide services should look at ways to reduce the fragmentation and spatialization of services to this group; ideas

might include more wrap around services at a single location, mobile services, popup services which come to the same location on a regular basis.

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Key Words: urban unsafety, homeless women, mental maps, feelings of unsafety, gendered responses to unsafe urban space

PAPAKĀINGA AND URBAN ACUPUNCTURE: INDIGENOUS KNOWLEDGE AS NEEDLES OF INTERVENTION
Abstract ID: 759
Individual Paper Submission

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The metaphor of urban acupuncture is increasingly used to describe or conceptualize focused urban interventions aimed at improving the health of 'sick' or 'dying' spaces within cities. In the same way, eco-acupuncture addresses maladies in ecological systems. The idea draws on the techniques of traditional Chinese acupuncture, except that interconnected socio/legal and ecological systems are the malfunctioning bodies. This paper considers Indigenous-led, urban residential developments as one kind of intervention that have the potential to clear blockages and cure pathologies. It is premised on the fact that modern urban property developments in New Zealand are often founded on individualized property rights and, at the same time, are frequently characterized by poorly functioning communities. This begs the question of whether reintroduction (acupuncture) of tradition-based, community tenure principles that were central to Indigenous communities could in some instances improve the health of urban spaces.

This paper grew out of research that identified and ranked principles of community tenure in contemporary developments by Māori (the Indigenous peoples of Aotearoa New Zealand), as well as local and international non-Māori developments, and evaluated their success. At the onset of the New Zealand colonization process in the nineteenth century, Māori managed and governed land and resources communally, and membership and belonging to social kin networks such as whānau (extended families), hapū (sub-tribes) and iwi (tribes) were critical for access to resources and, therefore, for survival. Māori lived relatively socially in kāinga (villages), with a strong focus on whanaungatanga (relationships) supported by utu (reciprocal obligations). However, colonization brought with it a more commodified and individualized perspective of property rights and social organisation, and 180 years on, the contemporary property development system in Aotearoa New Zealand is biased towards the settler-colonial perspective, particularly in urban environments.

Based on a synthesis of resident and practitioner interviews, participant observation, guided field walks, and spatial analysis of Māori-led papakāinga (village, housing) developments, this paper questions what

critical pinch-points (or intervention points) in residential developments have shown most promise in effecting a shift from dominant, hegemonic, settler-colonial development processes to a process which realizes Indigenous expression and self-determination. In particular, the paper focuses on the Kāinga Tuatahi (first home) papakāinga in central Auckland, and the Kaumātua (elder) village in Hamilton. This research suggests that mātauranga Māori (Māori knowledge) cannot be 'retro-fitted' into a Western system easily; more hope is offered by making Indigenous and Western systems compatible and allowing for practice pathways. Acupuncture offers a new way to conceptualize how focused interventions by Indigenous communities could further their aspirations.

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Key Words: Indigenous, urban, acupuncture, papakāinga, property

COMBINED INTERACTION EFFECTS OF URBAN STREET DESIGN ELEMENTS ON PHYSIOLOGICAL THERMAL COMFORT OF PEDESTRIAN DURING HEAT WAVES - FOCUSED ON THE CASE OF THE HIGHLINE IN NEW YORK, U.S.A -
Abstract ID: 775
Individual Paper Submission

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The association of urban street design with outdoor thermal comfort has been a prominent topic for the past two decades in the bio-meteorology as well as environmental design. The street design elements are frequently explored with geometry, vegetation and surface materials respectively but rarely interactively. The geometrical relationship to microclimate is examined in terms of aspect ratio, sky view factor and orientation (Andreou 2014). The cooling effects of vegetation are investigated relying on coverage ratio, configuration, alignment, and leaf density (Brown and Gillespie 1995). The influences of ground materials on surface temperature are explored by optical properties such as albedo and emissivity (Lee and Mayer 2018). The thermal performance of individual street design elements has been thoroughly investigated using numerical simulations and scaled-model experiments.

The composite effects of street design elements play a crucial role in determining the thermal comfort. Due to trade-off effects, thermal comfort can be either improved or impaired. It is often occurred when the different thermal effects of design elements are interacted and associated with each other. When tree shading is available, the cooling effects of high albedo materials or vegetations on the ground are significantly pronounced (Erell et al. 2014). Conversely, dense trees in a narrow street tend to impede wind ventilation and have often radiative blanket effects leading to higher thermal stress (Kong et al. 2017). In some cases, the thermal effect of high albedo materials, designed to decreases the surface temperature on the building wall and ground, is mostly offset by increasing reflective radiation to the

human body (Lee and Mayer 2018). Despite the importance of thermal trade-offs, previous studies have rarely considered those interactions in their estimation of thermal comfort.

This cross-sectional study aims to assess the level of pedestrian thermal comfort in relation to different physical features of street design. The key focus lies on the interaction effects of street design elements on thermal comfort, which are determined by the different compositions of tree shading, façade materials and ground pavement in relation to street aspect ratio. By looking at the interactions, the synergies and mitigation effects of the design elements will be explored to reveal the optimal design composite to maximize their cooling efficiency. The COMFA model is adopted to estimate the level of thermal comfort and multivariate analysis is used to figure out each contribution of specific design elements to thermal stress in terms of an energy flux model. The study site is the Highline, New York, where pedestrians have suffered from high heat stress during summer due to heatwaves and urban heat island. The microclimate data was collected by field measurement conducted in July 2019.

The results show that the level of thermal stress is largely determined by the different composition of street design elements. The street with high aspect ratio and dense vegetation is assumed to experience lower thermal stress compared to the open street with less vegetation. The shading effect shaped by solar geometry and tree density is the most influential factors to shape the level of thermal stress. But, in highly dense urban settings, this shading effect may significantly offset due to interaction effects which are attributed by the radiative heat gain from high albedo surface materials. It is expected that, throughout the field measurement in an actual environment, this study provides practical knowledge and deeper understating about the optimal street design that is highly resistant to extreme heat events.

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Key Words: Heatwave, Urban street design, Pedestrian thermal comfort, Cooling effect, COMFA model

MEASURING THE AGE-FRIENDLINESS OF URBAN ENVIRONMENT FOR PREPARING KOREAN AGEING SOCIETY
Abstract ID: 805
Individual Paper Submission

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The United Nations(2018) reported that the number of people aged 60 or older worldwide will rise to 2.1 billion by 2050 and that the number of people aged 60 or older expected to rise more than 25 percent of the world's population outside of Africa. This means that the number of people aged 60 and older is larger than the number of children under 15. In Korea, the ratio of elderly people aged 65 or older exceeded 14.21 percent in August 2017. Comparing to 2000 Korea's population growth rate for the senior in 2050 is expected to reach the highest among OECD member countries(OECD, 2008).

The World Health Organization(WHO) proposed age-friendly cities and communities and published the "Global Age-friendly Cities: A Guide" in 2007 responding to the rise of the nationwide ageing population and urbanization. WHO established the "Global Network of Age-Friendly Cities & Communities" and 541 cities in 37 countries, including Seoul, have joined the network as of March 2018.

The process of joining the WHO's global network is divided into planning, implementation and evaluation, and the WHO emphasizes the need and importance of diagnosing the age-friendliness in each joining process. Among the WHO's eight areas of the diagnosis, "outdoor spaces and buildings," "traffic," and "housing" are most closely related to improving the age-friendliness of the urban environment.

The WHO guidelines are also reflected in the national plan of the Korean central government and implementation plans and ordinances of local governments. However, those plans and ordinances do not include specific details on the major components of each area presented by the WHO guidelines, and there is a lack of consideration, particularly for the age-friendly outdoor space and infrastructure. Local governments in Korea are drawing indicators based on eight areas of the WHO guidelines in developing action plans and diagnosing the age-friendliness. However, those plans and policies suggested are carried out only through a survey on the level of senior citizens' satisfaction.

This study, therefore, proposed diagnostic indicators and measuring methods for age-friendly outdoor space and infrastructure, considering the basic direction of the age-friendly cities and communities in other studies, plans, directions, policies and so on. Case areas were selected and applied for a pilot test to verify the diagnosis indicators and measuring methods of outdoor space and infrastructure' age-friendliness. This study also proposed improvement of the age-friendly city plan and policy based on the diagnosis results.

For indicators to measure the age-friendliness of outdoor space and infrastructure this study proposed to select walking paths, crosswalks, parks, bus stops, public restrooms and benches(rest facilities) and to measure their accessibility, convenience and safety. Case areas were selected by reviewing the level of aging population in city districts nationwide, population density, urbanization rate, the status of major facilities and the will(policies and projects) for age-friendly cities and communities in candidate areas.

This study suggested that the "National Land Planning and Utilization Act" and the local governments' "Master Plan Guidelines" need to be revised to induce age-friendly outdoor space and infrastructure. In addition, this study proposed that the ordinance, which the local governments use as the legal basis for age-friendly cities and communities, needs to include details on age-friendly space and infrastructure.

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Key Words: Age-friendly Urban Design, Age-friendly Outdoor Space and Infrastructure, Age-friendliness Diagnosis, Measuring Indicator, WHO Global Network of Age-friendly Cities & Communities

AMERICAN DOWNTOWN REVITALIZATION AND PEDESTRIANIZATION–IMPORTED TO ANTWERP, BELGIUM

Abstract ID: 822
Individual Paper Submission

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This research critically examines the historic and contemporary planning process behind Antwerp's downtown pedestrianization scheme, beginning with Victor Gruen International's 1970 downtown revitalization plan for Antwerp, Belgium. The primary research is based on archival documents and completes a critical link between post-war pedestrianization planning in Europe and America. This research uses Antwerp as a case study to better articulate how Gruen applied and reinterpreted lessons from his American downtown revitalization proposals to the European context. Victor Gruen the Austrian born Architect is widely renowned for his influence in developing modernist, suburban shopping centers. Arguably however, Gruen's comprehensive master plan for Fort Worth, Texas "A Greater Fort Worth Tomorrow," was just as influential at conceptualizing downtown renewal in the post-war as his suburban shopping center proposals were. The Fort Worth comprehensive plan was widely acclaimed by both professional and popular audiences at its time of completion in 1956. It was widely viewed as the solution to downtown decline. Many cities aspired to emulate the plan; and many city officials hired architects and urban designers to develop a comprehensive plan for their own cities, some even hired Gruen himself. While Gruen's plans for downtown revitalization fell short of his vision in the North American context. I argue that through his return to Europe in 1968 and his learned experiences with planning in North America he was able to positively influence downtown revitalization in Europe by promoting centralized development and reinvestment in the downtown core, as well as opposing auto centric downtown development. This influence was in the face of growing pressure decentralizing development and the accommodation automobiles in downtown cores in many European cities. While many European cities looked to America as the vanguard for planning for automobility (Ward, 2017), Gruen warned of the consequences of emulating American planning in accommodating automobility (Gruen, 1978). Gruen shared his experiences with downtown planning in North America throughout Europe through speeches, and developing downtown redevelopment plans for several European cities with Victor Gruen International. Today the downtown pedestrian streets in Antwerp are closely reminiscent of the proposals that Gruen put forward in the 1970s. Also, unlike many North American downtowns, Antwerp's downtown still broadly remains the center for retail shopping. Perhaps what Gruen was unable to envision was how long the process of downtown revitalization and pedestrianization would take to be fully realized in Antwerp and other downtowns. While many North American cities abandoned their pedestrian malls in the 1980s and 1990s without implementing any of the larger downtown centralization strategies, many European cities continued to expand their networks of pedestrian streets (Knack, 1982). The result of this long-term downtown development strategy can be seen today in the center of Antwerp, where the streets are teaming with pedestrians and the center of the city maintains an active and thriving retail base.

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Key Words: pedestrianization, pedestrian mall, transatlantic transfer of ideas, Victor Gruen, Post-war planning

USING URBAN MICRO-REGENERATION TO ACCESS SOCIAL EQUITY OF URBAN PUBLIC SPACE: A CASE STUDY IN SHANGHAI
Abstract ID: 877
Individual Paper Submission

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The phenomenon of inequality of class concerning on space use has emerged during the process of urban regeneration and renewal in recent years. The gentrification has also accelerated when the increasingly large-scale urban redevelopment projects have been constructed, especially the ones located in central urban areas. More and more fancy squares and parks have been designed and put into use while they attract middle-class citizens and form the rejection atmosphere of lower-class users in such public spaces. Accessibility of these places is also one of the main obstacle for rebuilding urban spaces with equality. Besides, the new programs and functions of newly built urban public areas are rejecting people by consumption threshold as a result of lack of consideration of space equality. Even though the intention of most urban regeneration schemes is to achieve a harmonious improvement both on physical and economical environment, the social structure changes of space uses seem to be inevitable. It shows a tend of rejection towards other social class, especially the low-income ones. Thus invisible boundaries start to appear referring to the occupation of urban spaces, particularly the public ones.

The problem of threshold caused by inappropriate urban design strategies needed to be taken seriously. It is also a fair responsibility of urban planners and designers to pay attention on social equity circumstances even under the situation of dealing with capital-oriented regeneration projects. How to avoid more social isolation during the gentrification and urban regeneration process has become an urgent issue that needed to be resolved.

This research aims to discuss the possibility of using urban micro-regeneration as main strategy to rebuild the relationship between the newly-regenerated urban spaces and users with diverse social classes. Since urban micro-regeneration has been widely used as one of the main urban redevelopment strategies in Shanghai in recent years, cases study including several redesign of neighborhood public spaces have been chosen as research object. By investigating and field research on these cases in Hengfu Historical District, this article shows a series of practices have been implemented to reduce the negative influences on social structure balance.

As a special type of urban regeneration, micro-regeneration usually works on more social-sensitive areas that need more refined treatment. Any inappropriate move will lead to the disruption of existing balance and deteriorating of social structure. There is also a comparative study between the effect of micro-regeneration, which focus more on comprehensive redevelopment, and ordinary house renewal, which emphasize physical changes and usually lack of participation of urban designers. Interviews on diverse stakeholders are also presented for references. Urban micro-regeneration could be considered as an experiment for further regeneration projects with larger scales. This article tries to discover the relationship between actual urban design strategies and performances of space users as well as the changes of social structure. The differences between micro-regeneration and normal regeneration could also be seen as the origin of answers about why gentrification process has expanded immensely.

Design with the intention of humanized design and specialized redesign for different groups of people are considered as effective ways to rebuild the public space with class-equity. These strategies summarized from the cases in Hengfu Historical District could be used as references for further urban regeneration projects, even the larger scale ones.

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Key Words: urban micro-regeneration, social equity, public space

CHICAGO RIVER'S RISE TO THE SECOND COAST OF CHICAGO: DO COMPREHENSIVE DESIGN GUIDELINES (2019) FOR A RIVER WITH NO COMPREHENSIVE PLANS MATTER?
Abstract ID: 982
Individual Paper Submission

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Chicago's River Design Guidelines is one of the most comprehensive and visually compelling document to guide development along a major urban river in the United States. Preceded by an ideas lab in 2017 and a vision document that declared the river's future as a green corridor, this framework works as an integrative protocol for the future of the river. This paper aims to explore the document and the planners' transformative approach to its once heavily polluted river from two scales. The first scale deals with how urban design ideas have impacted planning decisions in the realms of land use and zoning. The second scale reveals how concepts of continuity, adjacency and in-situ growth are promoted through several projects along this waterway and what the city's mediation role can be among several local and federal stakeholders. And finally an inquiry as such undoubtedly contributes to the larger discussions of ecological urbanism and raises questions about its applications in urban centers.

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Key Words: Chicago River, River Edge Design, Ecological Asset, Land Use

URBAN DESIGN STUDIOS: VEHICLES FOR CHANGE?
Abstract ID: 1183
Individual Paper Submission

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The importance of studios in the education of planners has been explored by a range of authors over the last few decades (see for example, Lang 1983, Grant Long 2012). Urban design studios are a particular subset of these discussions (see for example Macdonald 2013, Neuman 2016 and Senbel 2012). These have raised a range of issues, from the challenges of teaching design to planners, the advantage and challenges of interdisciplinarity, and the benefits of community-based projects. Most have addressed two broad studios situations – those that are mostly academic exercises, and those that serviced-based, working with some sort of 'client.'

This paper reflects on another, perhaps more political role for studio, one that attempts to engage in a public discourse about the future of urban environments, but is not serving a specific defined community in the conventional service-learning sense. In this case, the city in question, Winnipeg, Manitoba, lacks the planning capacity (and political will) in its municipal government to address the complexities of downtown redevelopment.

Through a series of urban design studios at the University of Manitoba over the last 7 years, we have been working to build an argument, and evidence for a different approach to urban (re)development and design, one that runs counter to the high-profile proposals for skyscrapers (most of which are not realized) that are so attractive to the local media and growth coalitions.

From the first iteration of the studio in 2012, the goal for the studio was to raise the profile of downtown issues. The centre of the city was (and still is) the site of too many surface parking lots, and at the time, the mayor was keen to fill the voids in the urban fabric with new development. But without a vision for the future of downtown, we argued that there would be no grounds for evaluating the appropriateness of development proposals that might be generated. With the support of the downtown business improvement zone, students in the studio suggested scenarios for concentrating development to create a critical mass of population, and public spaces conducive and supportive of everyday life. These experiments ended with press conferences and public exhibitions of the student work in storefronts.

The initial studio iterations involved only design students. Over the last three years however, we have engaged architecture and planning students. The planning students bring an eagerness to address the broader issues of urban development, including the challenges of real estate development, and a desire to understand the regulatory contexts and initiatives that may be necessary to produce the desirable environments for a broad range of urban dwellers. We have met with planners, developers, business groups, and local residents. Importantly, each group of students builds on the work of preceding years. Studio outcomes, and the questions they raise about conventional assumptions about downtown environments, and the economics of development, will be presented in a public forum, and will be made available on a website.

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Key Words: urban design studios

HEALTH AND URBAN DESIGN: A FRAMEWORK FOR ACTION AND IMPLEMENTATION
Abstract ID: 1238
Individual Paper Submission

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Building on a recognition of the positive relationship between built form and health outcomes this paper provides a detailed roadmap of design strategies and methods to actively shape healthy cities and places. It reflects and expands upon a collaborative teaching initiative with Vancouver Coastal Health and is inspired in part by Larco's "Sustainable Urban Design - a (draft) framework" (Larco 2016), presenting a matrix of strategies calibrated by scale. The paper takes an expansive approach to health, including encouraging physical activity, reducing harm and exposure to harm, enabling social interaction, and access to opportunity and health services.

In addition to gathering and considering urban design strategies from a health perspective, the paper explores the overlap and emerging gap between design for sustainability and health, answering the question of whether health requires a new approach to urban design thinking.

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Key Words: Health, Design

ANALYZING THE RESPONSE OF URBAN DESIGN PLANS TO THE EMERGING DRIVERS IN THE CONTEMPORARY URBAN ENVIRONMENT OF US CITY CENTERS.
Abstract ID: 1391
Individual Paper Submission

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Literature suggests that the role of urban design in the urban planning system has been recently reshaped where design was consolidated as a major concern in planning, and several new agendas were driving its development in both policy and control. There is a greater public concern with the protection of a sense of place in a globalizing world, greater environmental concern with sustainability at the macro and micro scale, a more strategic view of urban design as a shaper of urban form citywide. Those concerns were combined with other emerging drivers particularly the rapid technological change in the use of information and communication technology in urban planning and design practice. [Punter2007, Al-Waer & Illsley2017; White2015].

These economic, environmental and social shifts mean it is timely to reflect on the role of design control and review. Thus, a change in thinking is occurring as to what urban design needs to achieve and how a series of amendments can be introduced to the best practice principles. Recent studies showed that current urban design plans are limited in scope, scale, and design guidance, and fail to consider the full set of drivers that are shaping the urban environment (Habe1989; Southworth 1989; Linovski&Loukaitou-Sideris2013; 200Mech & Retzlaff2017). Although the urban form is the core of what urban design deals with, current trends in urban design practice were highly-focused on micromanaging architecture with little to no focus on citywide urban design issues that could respond to the new political, social, cultural, and ecological conditions and goals, such as equity, livability, health, sustainability, walkability, and socio-cultural diversity and with what design aspects and scales of intervention these goals could be achieved.

There is a grounded belief that evaluation of plans' content can advance knowledge and provide an empirically accurate and theoretically relevant view of urban design and planning practice. This research is a single case study that used the mixed-method approach to critically examine the substantive content of a selected plan in the US city center: San Diego Downtown Community Plan (SDDCP). The overall goal was to assess the extent to which the plan's content has covered the design aspects of the built environment, has shaped a citywide urban form and has addressed the emerging drivers shaping the urban environment. The study was pursued in three phases: literature review, content analysis, and analysis of empirical findings. A review of the related literature has been pursued to construct a conceptual model to which the empirical results were compared. The content analysis phase was focused on developing an evaluation protocol to assess the plan's content and coverage. The analysis phase involved two analytical tasks: first, the results were contrasted with the conceptual model and the findings of recent studies; and the second task involved comparing and contrasting the plan's content with that of an award-winning

plan, the Chicago Central Area Plan.

The results showed that the SDDCP plan was internally inconsistent, inconsistent with the conceptual model, and failed to consider design and sustainability as overarching cross-scale elements. Although most existing drivers were emphasized, the emerging drivers were neither explicitly emphasized nor reflected in the plan's themes and policies. The translation of the plan goals into design themes, focus areas, and high-coverage design aspects has involved many discrepancies due to low coverage of the related design aspects and due to the approach of the plan's development. Current urban dynamics suggest that urban designers examine innovative approaches, tools, and methods that would consider a wider scope of drivers and infuse design across scales. Further research is required to examine how they may contribute to consistent plan content and hierarchical design guidance.

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Key Words: Urban design plans in US cities, urban design practice, plan content, Downtown urban design plans, plan evaluation

TRACK 16 – POSTER ABSTRACTS

TRANSNATIONAL PLACEMAKING IN THE URBAN BUILT ENVIRONMENT: PRESERVING TANGIBLE AND INTANGIBLE HERITAGE ACROSS THE CHINESE DIASPORA
Abstract ID: 600
Poster

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This poster presents research surveying placemaking strategies utilizing heritage preservation in urban Chinatowns in North America, Southeast Asia, and elsewhere. Chinatowns are defined here as longstanding urban neighborhoods of the diaspora of ethnic Chinese living outside mainland China and Taiwan. While establishing social and economic relationships with their host cities and nations, these communities also maintain transnational and migratory social, economic, and cultural linkages with other sites in the diaspora and with their ethnic homelands. In recent decades, ethnic Chinese communities in the diaspora have steadily formalized activities preserving aspects of both tangible heritage, such as historic structures and buildings, and of intangible heritage, such as cultural and social practices. In the urban built environment, these communities undertake a range of placemaking activities that help preserve transnational identities bridging local and global contexts and generating a unique sense of place. While some highly visible aspects of tangible heritage, such as decorative gates, are well known and have long been associated with Chinatowns, other, perhaps more substantial, forms of heritage placemaking,

such as museums and archives that emphasize both transnational and local histories, have become increasingly ubiquitous. Further, cultural and social organizations that have long characterized Chinatowns, ranging from performing arts to merchant associations, as well as longstanding small businesses, are increasingly identified by these communities as forms of intangible heritage that contribute to the sense of place. These intangible practices have also become the object of deliberate preservation strategies.

My research identifies and compares tangible and intangible preservation principles, practices, and spatial characteristics across Chinatowns in multiple cities around the world, considering these practices across a global network of diasporic sites. Methodologically, I identify linkages, preservation practices, and strategies through a review of primary and secondary literature and with visits to selected sites. I relate my findings to existing academic literature which casts urban Chinatowns as, variously, immigrant enclaves, tourist sites, locations of transnational capital investment, and sites of resistance to gentrification. Using photography and mapping, I generate a spatial and functional typology of how heritage sites contribute to placemaking in a selection of diasporic Chinese communities.

Expected findings include: how both tangible and intangible heritage practices contribute to placemaking in Chinese communities; how this heritage placemaking helps to perpetuate Chinese communities in the diaspora; how heritage practices compare among sites across the diaspora; how heritage practices in Chinatowns interact with local heritage movements; and how between heritage principles and practices in the diaspora compare with those in the homelands. The poster will include graphics that demonstrate the spatial relationships between tangible and intangible heritage in selected Chinatowns by juxtaposing tangible heritage sites, such as museums, monuments, and historic buildings, with the locations where intangible cultural and social practices are enacted.

This research will help scholars and practitioners of planning, urban design, and preservation better understand the diversity of heritage practices in ethnic Chinese communities. It will also draw conclusions about how the mix of tangible and intangible heritage in such communities impacts urban design. I anticipate these findings will be transferable to non-Chinese contexts as well as to emerging overseas Chinese communities which are only beginning to establish heritage practices.

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Key Words: Chinatown, Diaspora, Placemaking, Heritage, Preservation

THE ROLE OF MOVABLE FURNITURE IN IMPROVING SOCIABILITY IN UNIVERSITY CAMPUS
Abstract ID: 641
Poster

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Public spaces are platforms where people can be a part of the public realm (Zakariya et al., 2014). One of the most important aspects of public spaces is creating essential opportunities for social interactions. This functional feature of public space is identified as "sociability." University campuses are among the popular public spaces in many cities, where students, faculty, staff, and many other residents spend time

in order to get to their offices, attend a meeting, or even eat a meal. In small college towns, campuses are the center of social interactions. Along with its educational function, one purpose of a successful campus is to bring people together in an environment that creates the potential for intellectual and social exchange. While the physical character and quality of campus are defined by both its buildings and open spaces, it is the open space that has the greatest potential for unifying and equalizing the shared space of the campus. Comprised of streets, walkways, greens, courtyards, plazas, and gardens, open space has the potential to knit together the diverse elements of the campus in a coherent way. Campus planning is more important than the past because the evolution of campuses is now contributing to identifying and reinforcing an institution's brand. In response to the growing need for student life and involvement, university and college leaderships are competing against one another to develop their campuses and better suit what their students want. This research focuses on campus furniture which serves as an influential campus element.

Public furniture is a rarely observed topic in the planning literature. The term furniture is usually associated with the private sphere, while the campus is a public space (Uffelen, 2010). Furniture on campus provides students with comfort, information, seating, light, and protection. It ensures a place is live, accessible and enriching for its community. The campus furniture creates a deeper bond between the university and the surrounding. Therefore, campus furniture, with emphasis on movable chairs and furniture, is the central topic of inquiry in this research. This study aims at investigating various criteria and elements that direct the process of decision making in campus planning in selected case studies to better understand why some campuses use specific type(s) of furniture and some do not. The main research question of this study is:

What are the most important elements that campus planners consider in (not) choosing movable campus furniture?

Using a qualitative research approach, this research aims at finding an answer to this question. While the principal methodological framework in this research is the case study, semi-structured interviews and document analysis are primary data collection methods. Along with the interview, indeed, document analysis is a complementary method implemented to gain background information about campuses, their planning goals, strategies, and design policies and plans. Significant documents that are used in this research are campus master plans, campuses websites and campus maps. Four university campuses are reviewed and analyzed in this research: Kansas State University (KSU) in Manhattan, Kansas; the University of Kansas (KU) in Lawrence, Kansas; the University of Nebraska (UNL) at Lincoln, Nebraska; and the University of Missouri at Kansas City (UMKC).

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Key Words: campus planning, movable furniture, sociability, public space

PLANNING PLAY IN THE DARK: URBAN PLAY-SPACES AFTER-DARK IN PORTLAND, OREGON
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Poster

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Nighttime is often perceived as a time (and therefore a space) for certain populations, commonly related to "adult leisure" (Lefebvre, 1991) activity such as music, art, bars, and other economically-driven activities. However, nighttime activity is broader than occurrences in these (mostly) private spaces, hence

we should consider the activity and experience in our cities after dark. Considering planning as a nighttime activity provides an opportunity for varied sensual experience, social encounters, and challenge cultural stigmas and conceptions related to darkness (van Liempt, van Aalst, & Schwanen, 2014)

In Portland, Oregon, the length of daylight during December falls below 8 hours. This means that 2/3 of a 24-hour period are spent in the dark. If we consider that planning in most cities is done through a single-lens of daytime use, we are missing out on great opportunities and restricting many potential users. And the question arises, why can't we do more of our daytime activities after dark?

This short project describes the use of 8 different play-spaces after dark; using photos, information from the city (or designated website), and observations I assess operation hours, lighting, types of activities, users, safety measures (in place), and location within the city.

The project is an introduction into how the planning, the policy (and how it's being carried out by the local authority), and the physical features of such spaces dictate use, or potentially inhibit it. It incorporates the use of "every-night" (Williams, 2008), arguing for a mundane understanding, to mainstream darkness into planning procedures.

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Key Words: after-dark, play, playgrounds, everyday-every night

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