

### MTE HIGHLIGHTS SPECIAL ISSUE / NOVEMBER 2021

### student and trainee committee

# NEWSLETTER

#### MEET THE EXPERTS SPECIAL EDITION

This year saw the second virtual iteration of INSAR's Meet-the-Experts (MTE) event. We are excited to share some key pieces of advice from MTE 2021 in this special issue!

The EINSAR Student and Trainee Committee's (STC) MeetThe-Experts (MTE) event was established in line with the STC's goals to provide support for the student membership of INSAR through learning, networking, and mentorship opportunities, and to increase representation and access of INSAR activities. This year, the STC hosted the second virtual iteration of the longstanding MTE event in May. The STC is excited to share key pieces of invaluable career advice from the experts in this Newsletter!

Suvey results indicated that attendees joined the event from six different countries and highly valued the increased accessibility offered by the virtual format. The informal nature and small group size of the vMTE sessions provided a unique opportunity to interact with leading experts in autism research and offered space for students and trainees to

ask about topics that were most important to them. Words of wisdom from the group of experts spanned a range of topics from balancing responsibilities across work and life, integrating activism into research, networking, and handling rejection, among many others.

The STC would like to acknowledge the support of the INSAR Board and the efforts and contributions of the many people who made this event a success. First and foremost, the MTE would not be possible without the experts who took time out of their busy schedules to participate in the event. A team of STC members including Alan Gerber, Alana McVey, Alicia Montgomery, Charlotte Pretzsch, Desi Jones, Hillary Schiltz, Michal Cook, Nick Fears, and Sowmyashree Kaku helped to facilitate the vMTE sessions. The STC is incredibly grateful for the support and participation of everyone involved.

We hope that readers around the globe enjoy and absorb the career advice and passion for autism research in this Special Issue of the Student and Trainee Newsletter!

Hillary K. Schiltz, M.S. MTE Working Group Leader INSAR STC Treasurer



### Evdokia Anagnostou, MD

Dr. Evdokia Anagnostou is a Professor in the Department of Pediatrics at the University of Toronto and a Senior Clinician Scientist at Bloorview Research Institute as well as a co-Lead of The Autism Research Centre at Holland Bloorview Kids Rehabilitation Hospital. Her research is focused on how genes affect the brain, body, and behavior with the goal of translating that understanding into new ways and effective treatments to help individuals with autism and associated neurodevelopmental disorders. She serves as the lead of the Province of Ontario Neurodevelopmental Disorders (POND) network and the Canada Research Chair (Tier II) in Translational Therapeutics in Autism. She is also a co-lead of the Autism Treatment Network (Toronto site) focused on providing the best quality care to children with ASD and their families. She has been Inaugural Autism Chair at Holland Bloorview Kids Rehabilitation Hospital since December 2016.

During her vMTE session,
Dr. Anagnostou shared about having
ADHD traits as a researcher, being a
woman in academia, and engaging in
cross-disciplinary research as an early
career researcher.



### In This Issue:

**Virtual MTE Introduction** 

Dr. Evdokia Anagnostou

Dr. Fred Volkmar

Dr. Dora M Raymaker

Dr. Guillaume Dumas

Dr. Sven Bölte

Dr. Jonathan Green

Dr. Benjamin Yerys

Dr. Susan White

## On having ADHD traits as a researcher

Dr. Anagnostou shared that she finds her ADHD traits helpful in some situations and challenging in others. Specifically, she indicated that it helps her move on quickly from the disappointment of rejection or confrontation with other people and also allows her to be more comfortable saying things that challenge norms in the field as she does not think as heavily about the social impacts. It helps with thinking outside the box and creatively. On the other hand, she does make impulsive mistakes and does not always take time to think through her responses and moderate her reactions which can upset others. In the latter case, she copes by apologizing for not moderating her tone when that would have allowed her to more effectively communicate her thoughts. As for organizational skills and attention to detail, with career progress and success, she has been able to develop her team's skills where she finds her own lacking to ensure the quality of the work.

### Dr. Anagnostou on being a woman in academia

Dr. Anagnostou described her experience as a woman in academic research as very hard. She acknowledged the difficulties faced by men, but acknowledged that women scientists are more often placed in the research coordinator role and mentored more to focus on "balance." She emphasized the importance of finding a senior sponsor who understands the trainees' goals and aspirations and commits to them, especially if a young researcher doesn't want to follow the footsteps of the "balanced" career path that is typically offered to women. Overall. she advocated tha women need to find what gives us joy and focus on that. Young scientists/clinicians need to figure out the path they consider meaningful for them and build a team of mentors that will talk openly about being in science and in academia to facilitate their research and development as a scientist.

### On engaging in crossdisciplinary research as an early career researcher

Dr. Anagnostou laid out several steps to engage in cross-disciplinary research as an early career researcher. First, she encour-aged students and trainees to identify what experience they can offer to a group. Then, students and trainees should attempt to develop a community of people who complement their skills although interested in the same things. This is often the begin-ning of long-term fruitful collaborations that go beyond training years.

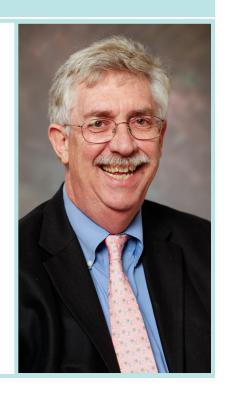
# A few final pieces of advice from Dr. Anagnostou:

- With respect to balancing clinical work and research, Dr. Anagnostou suggested that it is hard to be a clinician-scientist and never just a 100% full-time equivalent job but a meaningful path for those who choose it. Ultimately, young scientists/clinicians must determine their passion, career trajectory aspirations, and distribute time spent on clinical and research work accordingly.
- It is important for students and trainees to clarify their own space within a research group and be mindful to not become everyone else's research coordinator. On the other hand, when working as part of large research groups, a lot of the data and research product comes from others, and it is important to be respectful of the publication policies and research arrangements set up before they joined larger groups.
- Young investigators must have frank discussions with their senior colleagues about managing their space, their trainees, and the shared data generated from the research.

### Meet the Expert: Fred Volkmar, MD

Dr. Fred R. Volkmar, M.D. is Irving B. Harris Professor of Child Psychiatry, Pediatrics, and Psychology at the Yale University Child Study Center, School of Medicine. A graduate of the University of Illinois where he received in undergraduate degree in psychology in 1972 and of Stanford University where he received his M.D. and a master's degree in psychology in 1976, Dr. Volkmar was the primary author of the American Psychiatric Association's DSM-IV autism and pervasive developmental disorders section. He is the author of several hundred scientific papers and chapters as well as a number of books including Asperger's Syndrome (Guilford Press), Health Care for Children on the Autism Spectrum (Woodbine Publishing), the Handbook of Autism (Wiley Publishing), and A Practical Guide to Autism: What Every Parent, Teacher and Family Members Needs to Know (Wiley Publishing) with another three books in varying stages of production. He has served as an Associate Editor of the Journal of Autism and Developmental Disorders, the Journal of Child Psychology and Psychiatry, and the American Journal of Psychiatry. He currently serves as Editor of the Journal of Autism and Developmental Disorders. He has served as cochairperson of the autism/intellectual disabilities committee of the American Academy of Child and Ado-lescent Psychiatry. In addition to having directed the internationally known autism clinic he also served as director of autism research at Yale before becoming chairperson of the De-partment. Dr. Volkmar has been the principal investigator of three program project grants including a CPEA (Collaborative Program of Excellent in Autism) grant from the National Institute of Child Health and Human Development and a STAART (Studies to Advance Autism Research and Treatment) Autism Center Grant from the National Institute of Mental Health.

During his vMTE session, Dr. Volkmar shared advice with students and trainees about bal-ancing clinical practice and research, supporting families, and the importance of listening to autistic voices.



### On balancing clinical practice and research

Dr. Volkmar discussed the valuable reciprocity he has found between research and clinical work with patients. He highlighted the ways in which clinical practice can inform one's understanding of the patient's perspective and help to design meaningful research questions that center on the needs of the study population. Dr. Volkmar emphasized how this patient centered approach has helped to foster long-term relationships and how meaningful it has been to watch those individuals progress through the years.

### On supporting families in research

Dr. Volkmar discussed his extensive history working with families and emphasized the need for transparency and clarity when communicating about clinical and research procedures. He encouraged students and trainees to explain assessments thoroughly and to "be there for the long haul" by supporting families throughout their experience with the clinic and/or study. To the extent possible, Dr. Volkmar urged students and trainees to provide resources to enrolled families and to prioritize building relationships with community members.

### Other valuable advice from Dr. Volkmar

- Surveying the autistic community (both adults and adolescents) is a great way to build a meaningful stakeholder-centered research agenda.
- Needs assessments are critical.
- When guided by the needs of the community, research can play an important role in the development of social policy and law.
- Outcome literature is fairly limited to following up individuals in their 20s and 30s; future work should focus on outcomes over the lifespan.
- Don't be afraid to reach out to faculty or other professionals you'd like to learn from!
- There are many opportunities to get involved if you are open to them.

### MEET THE EXPERT: DORA M RAYMAKER, PHD



Dr. Raymaker is a Research Assistant Professor at Portland State University's Regional Research Institute for Human Services, a systems scientist and services intervention researcher; they conduct community based participatory research in collaboration with the autistic and mental health communities to improve health and life outcomes. Dr. Raymaker Co-Directs the Academic Autism Spectrum Partnership in Research and Education, is the Associate Editor of Autism in Adulthood, and has a particular interest in supporting the next generation of autistic researchers.

#### On funding community based participatory research (CBPR):

Dr. Raymaker identified that the National Institutes of Health (NIH) value CBPR and may be a good funding mechanism for students and trainees in the US interested in this work. Dr. Raymaker also recommended applying for smaller institutional or pilot grants which students and trainees can use to collect preliminary data to support future grant applications. They also highlighted that some foundations that are friendly to CBPR, such as the Organization for Autism Research, have student and trainee mechanisms. Students and trainees can also start a study without funding, if their community partners are okay with it.

#### On integrating activism into research:

Dr. Raymaker shared that before they were in autism research, they did policy work and blogging, but they found it wasn't a good fit for them personally. Combining research and advocacy goals has led them to better achieve social change. Science can inform policy, which influences the community, they said. As activists, students and trainees can disseminate their work to change perceptions and help to spread important messaging.

Dr. Raymaker encouraged students and trainees to help shift public perceptions of autism and work within the system of academia to affect change. For example, students and trainees can use peer review opportunities to call attention to stigmatizing language or unethical study designs. Students can also work with the community to structure their own developing research agenda around community priorities. Dr. Raymaker also highlighted the importance of communicating one's own research in a way that is accessible to the public.

#### Other valuable advice from Dr. Raymaker:

- Don't be afraid of complexity in applied and community-engaged autism research. Understanding messy, interwoven real-world complexity can help you develop effective solutions.
- Conducting research means continuously learning and redefining what is known. Dr. Raymaker encourages students and trainees to always be rigorous, and to become comfortable with uncertainty and the potential need to revise their understanding of what is true.
- Be transparent and open when working with community partners and treat them as team members, with the same level of respect as any other collaborator.
- It is important to do science that you're interested in.



## Dr. Dumas on learning new skills:

Dr. Dumas highly encouraged students and trainees to "have a playful mindset" when exploring a new skill. In order to gain insight into the landscape of a certain topic of interest, he recommended that students read books and review articles on new topics of interest, especially if they are interested in transitioning between different fields or areas of research. He highlighted how reading can orient one to the language and terminology of a particular field and familiarize students with influential people in that area.

In addition to reading, Dr. Dumas also recommended attending conferences, watching online seminars, and looking into online courses to gain deeper insight.

Dr. Dumas encouraged students and trainees to experiment with various statistical programs and to not be afraid to get their hands dirty!

"have a playful mindset"

### Introducing Guillaume Dumas, MEng, MSc, PhD, HDR

Dr. Guillaume Dumas is Assistant Professor in Computational Psychiatry of the Faculty of Medicine at the University of Montral and the Director of the Precision Psychiatry and Social Physiology laboratory in the CHU Sainte-Justine research center.

He holds the IVADO Chair in "Al and Mental Health", the FRQS J1 grant in "Al and Digital Health," and is an affiliated aca-demic member of Mila - Quebec Artificial Intelligence Institute. He is also an affiliate member of the Human Brain and Behavior Laboratory, in the Center for Complex Systems and Brains Sciences of Florida Atlan-tic University. Dr. Dumas investigates the neurobiology of social cognition through the lens of complex systems theory and computational methods. His scientific in-terests connect with biomedical research, specifically in psychiatry which requires the integration of biological, psychological, and social dimensions of the human mind.

Dr. Guillaume Dumas' interdisciplinary team develops new approaches to psychiatry, from digital tools for assessment and rehabilitation to mathematical modelling for clinical decision-making and precision medicine. Dr. Dumas also participates in numerous projects at the interface between Science, Art, and Society, from raising awareness about open science to maintaining citizens' rights in terms of cognitive freedom.

During his vMTE session, Dr. Dumas shared advice with students and trainees about learning new skills, maintaining work-life balance, and networking.

# Dr. Dumas on maintaining work life balance

Dr. Dumas emphasized the importance of sustaining enjoyment in his work by taking purposeful breaks from work (e.g., weekends), and structuring his work hours to maximize his attention and deep work. For example, he discussed how installing software to help him focus during specified work sessions (e.g. by blocking social media) has helped him attend to important tasks. He also highlighted the benefit of having collaborators that complement his skill set and motivate him. He encouraged

"Be good at what you're good at and find collaborators who excel where you do not."

## Other valuable advice from Dr. Dumas:

- When networking, keep email communication succinct; a straightforward request often receives a straightforward response!
- Reach out to potential collaborators by asking faculty if they may be interested in co-writing a paper or by offering to replicate their results in your own study.
- If you can identify a niche area of research, you may have more success with funding agencies. It's sometimes better to be at the top of a little hill than the side of a huge one in order to really set your expertise apart.
- It's never too late to learn something new or to explore a different topic. A good mentor is a mentor who helps you find your next place and helps you to get there.



### Meet the Expert: Sven Bölte. PhD



Dr. Sven Bölte, Ph.D., is professor of child and adolescent psychiatric science at the Department of Women's and Children's Health, Karolinska Institutet (KI), and senior clinical psychologist at the Division of Child and Adolescent Psychiatry, Center for Psychiatry Research, Region Stockholm, Sweden. He is director of the KI Center of Neurodevelopmental Disorders ("KIND"), editor of Autism, editor in chief of the Scandinavian Journal of Child and Adolescent Psychology and Psychiatry, and associate editor of Child and Adolescent Psychiatry and Mental Health. He is founder of the Scientific Society Autism Spectrum (www.wgas. org) and international A DOS and ADI-R trainer. For his work, he has received several recognitions, such as the "Life Watch Nordiska Priset," "Årets Ljus" (Society Attention), Psynk award GNET" (Sweden's Municipalities & Regions), Autism CRC (Australia) Achievement in Autism Research

and "Fellow of the International Society for Autism Research" (INSAR). Among his commissions of trust are appointments at the Swedish Research Council, the European Network of Hyperkinetic Disorders, the National Society Attention scientific board, the Swedish Autism and Asperger Society, the Swedish Psychiatry Foundation, Swedish National Board of Institutional Care, and the National Agency for Special Needs Education and Schools. Professor Bölte has published more than 350 original articles, reviews, book chapters, assessment and intervention tools in the field of autism spectrum, ADHD, and other neurodevelopmental conditions, and has been cited more than 19,000 times (H-index 64).

During his vMTE session, Dr. Bölte shared advice with students and trainees about handling rejection and negative feedback, the importance of the connection between clinical and biological science, networking, specialization, and obtaining a job in autism research.

#### On rejection and negative feedback

Dr. Bölte described that the way people respond to negative experiences, whether that is having a paper rejected, not receiving a grant, or receiving negative feedback, is vital to career success. His advice was to move on from the rejection, not take it personally, and most importantly, explore if there is something to learn from the experience. He emphasized that rejection is inevitable. Dr. Bölte encouraged students and trainees to embrace that receiving rejection and negative feedback is part of the nature of being in academia.

#### On the clinical and biological science connection

Dr. Bölte highlighted the importance and value of having knowledge and experience in both clinical and biological domains. In particular, he advised that clinicians broaden their expertise to include biological techniques such as genetics, neuroimaging, spectroscopy, etc. Similarly, he also recommends that biological scientists gain experiences in the clinical field (e.g., observing assessments). He noted that often there is no formal structure for this type of cross-field training, and he encouraged individuals to take the initiative to ask supervisors for these experiences.

### Other valuable advice from Dr Bölte:

- Build networks and connections with other researchers as early as possible in your career
- It is very helpful to be very skilled in one specific area, especially early in your career, but it may also be helpful to broaden and learn more about other related areas of interest later in your career. This can help with bridging connections with other researchers.
- There will always be fun and interesting opportunities, but you have to carefully decide what opportunities to accept, as these can quickly add up and contribute to burnout.
- Two critical components of securing a job in autism research are 1) production of good sci-ence (publications) and 2) success in acquiring funding. Additionally, he shared that funding is important, but publications and the quality of those publications are more important.

### Meet the Expert: Jonathan Green, MD



Dr. Jonathan Green is a clinical scientist with a focus on early development and autism intervention. His work on parent-mediated early intervention has including leading RCTs of the iBASIS prodromal intervention for infants at risk for autism in the first year, and the post-diagnosis Pediatric Autism Communication Therapy (PACT) - which both showed reductions in symptom severity sustained for 2 and 6 years respectively post-treatment. PACT has been widely implemented internationally and successfully adapted for low-income contexts in South Asia using task-shifting (PASS and PASSPLUS trials). Dr.Green is currently leading a trial to scale of PASSPLUS in Delhi and collaborating on a number of international trials of parent-mediated therapy for autism in infancy and early childhood. He also investigates adjunctive biological treatments within monogenic syndromic models of autism such as Neurofibromatosis 1, in basic science collaborations and experimental medicine trials. Clinically, he runs a specialist Social Development Clinic at the Royal Manchester Children's Hospital, undertaking assessment and treatment innovation with ASD and other impairments of social development. Jonathan has been associate editor for the Journal of Child Psychology and Psychiatry, a member of the UK 2013 NICE guideline for autism treatments and on an MRC methodology research group into process and causal analysis in clinical trials.

## DR. GREEN ON COMMUNICATING WITH STAKEHOLDER COMMUNITIES

During his vMTE session, Dr. Green shared advice with students and trainees about how to communicate research results with stakeholder communities and how to develop meaningful research questions. Dr. Green shared his experience communicating with stakeholders in his research endeavors and stressed the need to embed scientific work into a larger ecosystem. To that end, he encouraged engagement in mindful open dialogue with service users. When met with criticism from the community, he urged students to embrace it; both negative and positive feedback are equally important in maintaining research aims that align with the needs and priorities of the autistic community. Dr. Green described how dialogue with the stakeholder community can truly enrich the research process and outcomes.

### On developing meaningful research questions

When designing a research question, Dr. Green discussed the importance of identifying a feasible scope. For example, though many graduate students are interested in treatment trials, Dr. Green cautioned that dissertation work may be more appropriately focused on unpacking an existing intervention.

He emphasized the need for future research to move beyond comparing treatments to instead ask "what works and why does it work?" He highlighted how identifying the active ingredients in an intervention can help clinicians determine how to combine them for a client's specific needs.

#### Other valuable advice from Dr. Green:

- Examining existing data sets in order to analyze mechanistic effects is a great way to meaningfully contribute to an understudied area of research as a student or trainee, while having a project of reasonable scope.
- Try to be creative in thinking about new ways to implement the "active ingredients" of an intervention in feasible ways for specific communities and contexts. Evaluating the translation of an existing intervention in a new context can form the basis of excellent research projects that are more realistically feasible than testing an intervention from scratch. This is especially important in order to adapt research and intervention tools to low resource settings.
- Consider the qualitative meaning of clinical significance in addition to the statistical results. This can be done by facilitating focus groups to ask your participants, "What do you feel has changed in your life? What has felt meaningful for you? What has not?"

### Introducing: Benjamin Yerys, PhD

Dr. Benjamin Yerys is an Assistant Professor of Psychology in Psychiatry, Child Psychologist, and Scientist at the Center for Autism Research (CAR) at Children's Hospital of Philadelphia, and serves as CAR's Director of the Data and Statistical Core in the Department of Psychiatry. After graduating from the University of Denver with a PhD in Clinical Psychology, Dr. Yerys completed an internship at the University of California-San Diego/VA Healthcare, and served as a postdoctoral fellow at Children's National Medical Center. In his role as a clinician, Dr. Yerys specializes in the assessment of neurodevelopmental disorders, including autism, ADHD, and intellectual disabilities, and provides cognitive behavioral therapy to autistic youth. Drawing from his clinical experiences, Dr. Yerys' research focuses on executive function abilities in autistic children, and the development of novel, individualized therapies to improve these abilities. He is currently leading a study to promote better daily living skills, and to investigate the link between these abilities and quality of life in autistic adolescents. Through his work, he hopes to identify the factors that autistic people find challenging, and work to alleviate these challenges.

During his vMTE session, Dr. Yerys shared his advice about how to find the right postdoctoral position, and how to work with qualitative data.

### On Finding the Right Postdoc

Dr. Yerys highlighted the importance of using post-doctoral training to adress gaps in a student's training and publications in the area they would like to work. Based on this idea, he suggested that students and trainees identify the type of research that they would like to do and the skills needed to perform this work. Then, search for post-doc positions that can help them gain the skills and experiences to accomplish their goals. He shared that his own post-doctoral fellowship helped him to address gaps in the ages of children he had worked with. Dr. Yerys encouraged trainees to highlight their new skills and knowledge when applying for career development grants.



On Working with Qualitative Data

Dr. Yerys believes that qualitative interviews are an important tool for understanding the experiences of autistic people. He emphasized, however, that qualitative research can be a big undertaking and should not be taken lightly. Dr. Yerys highlighted the importance of understanding qualitative research methods and even collaborating with a qualitative researcher. In particular, Dr. Yerys suggested that researchers pay close attention to their study design. For example, by using open-ended questions and providing participants with multiple avenues of communication, researchers can ensure that their study is accessible to a range of people, allowing them to share their stories.

### Other valuable advice from Dr. Yerys:

- Gain experience in programming/coding and advanced statistical methods (e.g., Bayesian statistics, machine learning, methods for understanding developmental trajectories).
- There are many different models of autism, so take opportunities to collaborate with people from different backgrounds.
- Researchers at all levels should engage with autistic people and autistic-led organizations to better understand their experiences.

### Meet the Expert: Susan White, PhD

Dr. Susan White is the Doddridge Saxon Chairholder in Clinical Psychology and Director of the Center for Youth Development and Intervention at the University of Alabama. Dr. White's research in developmental psychopathology primarily addresses treatment of transdiagnostic processes underlying neurodevelopmental disorders, such as autism spectrum disorder. Her research has been funded by the National Institutes of Health, the Department of Defense, and research foundations. She is associate editor for the Journal of Clinical Child and Adolescent Psychology and prior associate editor for the Journal of Autism and Developmental Disorders, and she is the Editor in Chief of the ABCT Series on Implementation of Clinical Approaches.

### On applying to graduate school

Dr. White recommended that trainees prioritize finding the right mentor when applying to graduate school. Dr. White emphasized that the mentor-mentee relationship cannot be underestimated. She described that a graduate student's academic mentor is similar to a platonic spouse — a student's relationship with their mentor lasts the rest of the student's career. Dr. White has welcomed her students to add to and expand upon her own interests. She also discussed the benefit of having multiple mentors in student's graduate training. For example, she advised selecting dissertation committee mem-bers that can support mentorship needs in addition to directly sup-porting the student's research.

### On transitioning to independent research

Dr. White spoke about key strategies and considerations for making the transition from trainee to independent researcher. Dr. White described the importance of finding a balance between maintaining a connection with mentors and advisors while also showing independence. She shared that relying upon and learning from a cohort of colleagues throughout training can be helpful in making the transition. With regards to the job market, Dr. White reminded students and trainees that often a student's first faculty position isn't their "final" faculty position. She highlighted the need to consider the balance between family, work, and other obligations, as well as the ratio between research and clinical practice.



She described that research productivity (e.g., publications), demonstration of grant writing abilities, and experience in particular settings (e.g., hospitals) are all important factors when applying for a faculty position. Dr. White also shared that an applicant is more marketable if they have already secured funding, but early in a student's career, it is a good idea to demonstrate grant writing skills by applying for funding even if it is not awarded.

#### Other valuable advice from Dr. White:

- Team science is where the field is at, and it's not going away! This is critical for adequate sample characterization. She recommends finding collaborators with complementary interests.
- Dr. White highlighted the important role of implementation science in the future of autism research. She described the need to ensure that the impact of clinical research is really being felt.

# We would love your feedback on this and other STC Newsletters!

Please take a moment to share your thoughts with us at the following link:

https://www.surveymonkey.com/r/STCNov21Newsletter

STC Newsletter Special Issue Team Members: Alan Gerber, Alana McVey, Alicia Montgomery, Desi Jones, Hillary Schiltz, Michal Cook, Nick Fears, and Sowmyashree Kaku