Integrating disasters into the planning curriculum

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Good planning = resilient communities
Research galvanizes interdisciplinary practice

Strong connections between urban planning (social and policy scientists) and marine sciences (physical scientists)

Shared:
- Faculty
- Space
- Courses

Development of GIS-based data sets of environmental, management, and demographic data of Texas coast

Strong relationships with agencies and organizations working along coast
Strong connections between urban planning (social and policy scientists) and marine sciences (physical scientists)

Shared:
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Development of GIS-based data sets of environmental, management, and demographic data of Texas coast
Strong relationships with agencies and organizations working along coast
Planning degree programs

BS in Urban & Regional Planning
Master of Urban Planning
Ph.D. in Urban & Regional Science
Master of Urban Planning

*Emphasis in Resilient Communities, with tracks in coastal management, hazard mitigation, emergency management, and disaster response*

*Graduate certificate in Environmental Hazard Management*
How we interject disasters into the curriculum

Establishing a fact basis for planning (planning methods sequence)

Applied planning studios

Elective courses and Environmental Hazard Management certificate

Plan Implementation
- Plan quality review
- Land use regulations
- Codes and ordinances

Local Hazard Pessimism Planning: A Texas Example
Establishing a fact basis for planning (planning methods sequence)

The overlap represents hotspots that are prime targets for resiliency planning issues whether considering mitigation, recovery, or other planning activities.
Plan Implementation

Plan quality/review
Land use regulations
Codes and ordinances

Local Hazard Mitigation Planning: A Texas Example

* In total the 12 plans proposed 836 mitigation actions:
  * Structural: 34.4%
  * Emergency management: 24.1%
  * Regulatory/planning: 25.8%
  * Education/Awareness: 14.4%
  * Natural resource protection/restoration: 1.4%
* There is a good deal of room for improvement
  * Particularly on fact basis and policies and actions which tended to be narrowly defined
  * Cities have the greatest need for improvement.
  * Disconnect between hazard mitigation plans and other plans.

* For a more complete discussion of these findings and data collection see: Kang, Peacock and Hussein 2010 and Peacock et al. 2005.
Applied planning studios

- Provides an understanding of the interrelationship between environmental systems and natural phenomena.
Elective courses and Environmental Hazard Management certificate

Provides students with an understanding of the interrelationship between the built environment, social systems, and extreme environmental events (natural, tech, terror).

Hazard mitigation

Emergency management

Environmental Hazards management

Disaster Health Systems
Professional Masters Papers

- Analysis of unmet FEMA and sheltering needs over time and location during Hurricanes Katrina and Rita in Texas.
- Determinants of Business’s Vulnerabilities to Physical Impacts of Hazards: Lessons Learned from Hurricane Ike
- Economic Assessment of Hurricane Katrina using GIS and Regression Models
- Using GIS to Guide Environmental Management of Failing Onsite Sewage Facilities in the Dickinson Bayou Watershed, Texas
- Developing and Testing a Conceptual Framework for Flood Resilience
- Examining the Relationship Between Developed Open Space and Flood Claims in Urban Environments – Harris County, Texas
- Clash of the Built and Natural Environments: A Vulnerability Index to Flood Risk in Galveston County, Texas
- Patterns of Post-Disaster Housing Recovery
- Public Housing after Hurricane: Urban Renewal or Removal? The Case Study of Beaumont and Galveston, Texas, U.S.A.
Outcomes for students

Leslie Lutz, ‘07: Emergency Management/Business Continuity Coordinator, Texas A&M Health Science Center
Ben Buchanan, ‘09: Texas Natural Resource Information System
Linda Salzar, ‘09: Staff Scientist at Zephyr Environmental Corporation (Emergency Management)
Travis Young, ‘11: Program Manager, Houston-Galveston Area Council (Disaster and Housing Recovery)
Stephany Caraballo, ‘13: Texas Coastal Watershed Program Assistant
Heather Wade, ‘12: Coastal Planning Specialist, Mission-Aransas National Estuarine Reserve
Dustin Henry, ‘10: Senior Planner, City of Galveston
Vicky Carrasco, '05, Maryland Sea Grant/Chesapeake Bay Program
Sarah Bernhardt, '10 Director, Galveston Bay Program, TCEQ, (PhD grad)
Jennifer Yust, '05, Harris Co. Flood Control District
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