

Presentation Abstracts – Session 8

*Presenters and their associations are highlighted.

❖ **Rusty Feagin, Department of Ecosystem Science & Management, Department of Ocean Engineering, TAMU**

Coastal erosion: Nature-based solutions

Abstract:

Coastal landscapes are naturally dynamic, with sediments and ecosystems migrating landward in response to rising sea levels and storms. Accordingly, people have sought to stabilize these eroding lands with engineered structures for socio-economic purposes. Yet, coastal stabilization projects inhibit the natural dynamism of the landscape, reducing the return flow of ecosystem services to society in the long-run. Engineers and resource managers have increasingly sought nature-based solutions that can protect socio-economic interests against natural hazards, while also maintaining a sustainable and dynamic coastal ecosystem. These natural solutions include the use of vegetation and other organisms for bio-stabilization efforts, the use of ecosystems as barriers to energy, the use of ecosystems to engineer the geomorphology of landscapes, the use of mimicry of natural form in civil construction, the integration of green and civil construction materials science, and the use of common metrics for engineered versus natural solutions.

❖ **Monty C. Dozier, Texas A&M AgriLife Extension, TAMU**

Extension Network's at Work in Times of Need

Abstract:

This presentation will focus not only on traditional roles of the Texas A&M AgriLife Extension Service during times of natural and man-made disasters but also new recovery-related roles AgriLife Extension assumed following Hurricane Harvey. These included serving as a liaison between local jurisdictions of the counties, municipalities, and schools in the Harvey impact zone and state and federal agencies providing recovery resources. Additionally, some Extension agents and Extension Specialists supported the housing mission of the General Land Office of Texas and provided financial technical assistance to local jurisdictions related to securing reimbursements through the FEMA Public Assistance Program. These expanded roles demonstrated the value of the Extension Network and the great asset a locally embedded Extension professional can play in recovery.

❖ **Ashley Ross, Lauren Clay, Thomas Haase, Wen Jiun Wang
Department of Marine Sciences, TAMUG**

Rural Resilience

Abstract:

Rural communities have been found to have less capacity for disaster resilience and slower recovery from disturbances. Despite this, scholarly and social attention is predominantly focused on urban areas, leaving big gaps in our understanding of rural resilience. This project takes a capitals approach to assessment of rural resilience and evaluates it from the perspective of individuals and decision-makers. Using data from in-person interviews and an online survey, the findings indicate that social capital is the

greatest asset in rural communities for post-disaster recovery while institutional, physical, and human capitals are largely lacking. These findings have implications for targeting capacity-building efforts in rural communities to more effectively support disaster recovery and resilience.

❖ **Thomas Chappell, Department of Plant Pathology & Microbiology, TAMU**
Predicting and Monitoring Biotic Sequelae to Environmental Injuries

Abstract:

Pathologists are concerned with conditions that result from several types of hazards. Environmental occurrences pose immediate hazard to human health and safety, and it is well-known that the occurrences also cause long-term hazardous effects related to disease and logistics. This presentation explores case studies concerning agricultural systems in which techniques for predicting and monitoring plant and vertebrate epidemic risk can be developed into efficient hazard-mitigating tactics. The use of rapidly deployable remote sensing technology and epidemic forecasting models are used to efficiently allocate monitoring resources.

❖ **Sierra Woodruff, Kent Portney, Ann Bowman, Bryce Hannibal, Garrett Sansom, Richard Feiock**

Department of Landscape Architecture & Urban Planning, TAMU
Resilience Policies and Programs in 101 U.S. Cities

Abstract:

How resilient are our cities? We quantify and compare cities' policies that tangibly affect resilience. First, we developed a set of 110 resilience policies and programs. Then, using web-based data collection, we assessed which of these policies and programs the 101 largest cities in the U.S. have adopted. On average, cities have adopted 54 of the policies. The results highlight differences in cities' approaches to building resilience. In addition, examining the adoption of policies and programs highlights gaps in the resilience agenda. Some policies, such as household recycling, are ubiquitous; others, such as hardening critical infrastructure, are relatively rare. Across cities, there is a need to adopt more policies to advance social equity and adapt for climate change. Complex governance arrangements surround many of the policy and programs of interest, demonstrating the need work with diverse partners across various governance and industrial sectors to build resilience.