

Community Engagement in Southeast Texas: Pilot Project to Enhance Community Capacity and Resilience to Floods

Committee

Scott Hemmerling

Chair

Dr. Scott Hemmerling is the Director of Human Dimensions for The Water Institute of the Gulf, focusing on research related to climate adaptation and community resilience. He has more than fifteen years of experience investigating anthropogenic alterations to the landscape and the impacts of development on coastal communities.

Dr. Hemmerling's recent work with the Water Institute is focused on analyzing the societal impacts of environmental change in coastal Louisiana and developing methods to examine the linkages between human and natural systems. He is the principal investigator on the Louisiana Coastal Atlas project, a geographical study examining the effects of historical social, economic, and environmental stresses on community resilience. He is also working on several projects to develop methodological approaches for measuring socioeconomic change in coastal communities. This includes a social impact assessment methodology for coastal restoration projects and a human systems monitoring plan as part of the Louisiana's System-Wide Assessment and Monitoring Program (SWAMP). Dr. Hemmerling also developed a statewide comprehensive water resources assessment that quantified the sustainability of both groundwater and surface water resources for current and future societal needs. Most recently, Dr. Hemmerling developed approaches to incorporate local knowledge into assessments of community resilience and the social value of ecosystem restoration projects.

Prior to joining The Water Institute of the Gulf, Dr. Hemmerling was a Geographer with the U.S. Geological Survey's (USGS) National Wetlands Research Center, based in Lafayette, Louisiana. As part of his work for the USGS, Dr. Hemmerling worked closely with the Coastal Protection and Restoration Authority (CPRA) on coastal community resilience issues and was part of the Master Plan Delivery Team and the Cultural Heritage Working Group for Louisiana's 2012 Coastal Master Plan. He also worked with the Louisiana State Land Office on issues related to historical navigability, land rights, and public access to Louisiana's waters. Prior to joining the USGS, Dr. Hemmerling served as a research associate with Louisiana State University's Coastal Marine Institute, conducting research related to the impacts of oil and gas development on Louisiana's low income and minority communities.

He earned a Bachelor of Science in environmental studies with a minor in physical geography from the State University of New York at Buffalo and a Master of Science in urban studies with a concentration in applied urban anthropology from the University of New Orleans. He earned his doctoral degree from the Department of Geography and Anthropology at Louisiana State University.

Phillip R. Berke

Member

Dr. Philip Berke is a Research Professor of Land Use and Environmental Planning at The University of North Carolina at Chapel Hill. His work focuses on the relationship between community resilience and urban planning with a specific focus on methods, theory and metrics of local planning and outcomes. He is the lead co-author of an internationally recognized book, *Urban Land Use Planning* (University of Illinois Press, fifth edition, 2006), which focuses on integrating principles of sustainable communities into urban form, and co-author of a book, *Natural Hazard Mitigation: Recasting Disaster Policy and Planning*, which was selected as one of the “100 Essential Books in Planning” of the 20th century by the American Planning

Association Centennial Great Books. His 2015 publication on community resilience to hazards and climate change received the Best Article Award, the highest award for scholarly research given by the American Planning Association.

His current research focuses on development of the Plan Integration for Resilience Scorecard. The aim is to better understand interactions among networks of policy institutions, networks of land use and development plans produced by such institutions, and social and physical vulnerability to hazards and climate change. Application of the Scorecard is currently funded by the U.S. Department of Homeland Security and the National Science Foundation to assist cities in the US and the Netherlands to improve urban resilience planning.

Dr. Berke currently serves on multiple advisory boards including the Urban Institute’s Global Evaluation of the Rockefeller Foundation Global 100 Resilient Cities, National Science Foundation’s Social Science Extreme Events Reconnaissance Platform, and Planet Texas 2050 Technical Advisory Board of UT-Austin.

D. Patrick Jones

Member

Dr. Patrick Jones has been the Executive Director of EWU's Institute for Public Policy & Economic Analysis since its inception. His past and present professional and volunteer work includes the executive director of the Biotechnology Association of the Spokane Region, chair of the St. Luke's Rehabilitation Institute community advisory board, a member of the Spokane Economic Development Council, chair of the Spokane Entertainment Arts & Convention Advisory Board, member of the board of the Association of University Business & Economic Research Bureaus and board member of the Spokane Convention and Visitors Bureau. He is currently the chair of the City of Spokane Mayor's Advisory Council on Economic Vitality and was recently inducted into the Spokane Hall of Fame. Dr. Jones has a Ph.D. in applied and agricultural economics from the University of Wisconsin-Madison.

Brooke Liu

Member

Dr. Brooke Liu is the Associate Dean for Academic Standards and Policies, and ADVANCE Professor in the College of Information Studies at The University of Maryland. Dr. Brooke Liu's qualitative and quantitative research investigates how government messages, media, and interpersonal communication can motivate people to successfully respond to and recover from hazards. Much of her recent research focuses on tornado risk communication as well as crisis narratives and other message strategies.

Liu's research has been funded by government agencies such as the Defense Advanced Research Projects Agency (DARPA), the Department of Homeland Security (DHS), the National Science Foundation (NSF), and the National Oceanic and Atmospheric Administration (NOAA). She has published more than 60 journal articles and book chapters. Additionally, Liu is the co-founder and editor of the first journal dedicated to crisis and risk communication research: the Journal of International Crisis and Risk Communication Research.

Previously, Liu served as a member of the Food and Drug Administration's (FDA) Risk Communication Advisory Committee and the National Academy of Sciences Committee studying the future of emergency alert and warning systems. She also has developed and delivered risk communication training for a variety of government stakeholders including the Department of Homeland Security, the National Weather Service, and for the Australian Institute for Disaster Resilience. As the ADVANCE Professor for the College of Information Studies, Liu supports a campus-wide initiative to recruit, develop, retain, and promote women and under-represented minority faculty. Currently, Liu is the Associate Dean for Academic Standards and Policies in the University of Maryland Graduate School.

Michelle Meyer

Member

Michelle Meyer is the Director of the Hazard Reduction and Recovery Center and an Assistant Professor in the Landscape Architecture and Urban Planning Department at Texas A&M University. She is also the Community Resilience Lead for the Institute for Sustainable Communities at Texas A&M. She received her Ph.D. from the Department of Sociology at Colorado State University (CSU). She earned her BA from Murray State University in Murray, KY in Sociology and a MA from CSU in Sociology.

Michelle's research interests include disaster resilience and mitigation, climate change displacement, environmental sociology, and community sustainability, and the interplay between environmental conditions and social vulnerability. Particularly, Michelle studies inequality and how disaster and environmental settings intersect with structural forces that maintain or transform inequality. Michelle's dissertation research focused on the interrelation of individual and community resilience and social vulnerability in hurricane-prone communities. Michelle has worked on various research projects including disaster risk perception, social capital in disaster resilience, organizational energy conservation, volunteer training program evaluation, evaluation of disaster response plans for individuals with disabilities, social media use among vulnerable populations, how to increase protective action knowledge in Haiti, citizen science protocols for measuring storm-water condition equity, and environmental attitudes and behaviors. Her teaching interests include research methods and statistics, sociology of disaster, environmental sociology, social stratification, and community sociology.

She has conducted research in Florida, Louisiana, Texas, Colorado, New York, California, Sri Lanka, and Haiti. As well as survey research throughout the Gulf and Atlantic coastlines and in Peru, India, and Turkey.

She regularly collaborates with nonprofit organizations on applied research including t.e.j.a.s. (Texas Environmental Justice Advocacy Service), GeoHazards International, local long-term recovery organizations, Louisiana Environmental Action Network (LEAN), as well as with high school students. She implements mechanisms for undergraduate and graduate student involvement in research that supports their education and helps communities become more resilient.

Diana Mitsova

Member

Dr. Diana Mitsova is an Associate Professor at the School of Urban and Regional Planning; and Director of the Visual Planning Technology Lab, Florida Atlantic University. Dr. Mitsova holds a Ph.D. in Regional Development Planning from the University of Cincinnati and a Master's from the School of Public and Environmental Affairs at Indiana University Purdue University, Indianapolis. She joined the School of Urban and Regional Planning in August 2008. Previously, she was a recipient of a NATO Democratic Institutions Research Fellowship, worked as a research assistant at the Center for Urban Policy and the Environment, Indianapolis, and held the position of a Program Director I/ Research Analyst with the State of Indiana. Dr. Mitsova's research focuses on the use of geographic information systems, spatial and statistical analysis to conduct interdisciplinary research aimed at understanding the interactions between ecosystems and urban environments, and informing sustainable urban planning and environmental practices. Her collaborations include projects with USGS, the National Park Service, The Nature Conservancy, and the Harbor Branch Oceanographic Institute. Her recent publications focus on the impact of sea-level rise on coastal communities and the implementation of planning approaches related to enhancing shoreline stabilization and coastal resilience. She has also a longstanding interest in understanding the impact of urban development on ecosystems and other environmentally sensitive areas. Her work focuses on identifying the functional boundaries of such areas and methods of incorporating them in land use planning in order to minimize the formation of stormwater runoff, and protect water resources against sedimentation, nutrient enrichment, and contamination.

Hal Needham

Member

Dr. Hal Needham is the founder and president of Marine Weather and Climate, a company that works with communities to improve resiliency from coastal hazards. He serves as director for the U-Surge Project (www.u-surge.net), an initiative to provide the first data-driven storm surge and sea-level rise analyses for coastal communities. Needham has worked extensively along the Gulf Coast over the past decade and has provided insights into flood risk during disasters like Hurricane Harvey. He developed an interest in flood impacts on historic preservation during his tenure as director of the Center for Coastal Heritage and Resiliency at Galveston Historical Foundation. He earned M.S. and Ph.D. degrees from Louisiana State University and a B.S. from Penn State.

Monica Schoch-Spana

Member

Dr. Schoch-Spana, a medical anthropologist, is a Senior Scholar with the Johns Hopkins Center for Health Security and a Senior Scientist in the Department of Environmental Health & Engineering at the Johns Hopkins University Bloomberg School of Public Health. She also holds faculty positions at the Department of Anthropology at Texas State University and the National Consortium for the Study of Terrorism and Responses to Terrorism (START). Her areas of expertise include community resilience to disaster, public engagement in policymaking, crisis and risk communication, and public health emergency preparedness.

Since 1998, Dr. Schoch-Spana has briefed federal, state, and local officials, as well as medical, public health, and public safety professionals, on critical issues in health security. National advisory roles include currently serving on the Homeland Security Subcommittee of the Board of Scientific Counselors for the US Environmental Protection Agency, the Resilient America Roundtable of the National Academies of Sciences, Engineering, and Medicine (NASEM), and the NASEM Standing Committee on Medical and Public Health Research during Large-Scale Emergency Events.

Dr. Schoch-Spana has led research, education, and advocacy efforts to encourage authorities to enlist the public's contributions in epidemic and disaster management. Her studies have been influential in debunking myths about mass behaviors in the context of bioterrorism, reframing the management of catastrophic health events to include social and ethical-moral dimensions, and persuading leaders to share governance dilemmas with the public including how to allocate scarce medical resources in a disaster. She has chaired national working groups to produce peer-reviewed, evidence-based consensus guidance for authorities on how to partner with citizens and civil society in relation to bioterrorism response, influenza pandemic planning, and nuclear incident preparedness, and she has organized 3 national meetings on how to strengthen community resilience to extreme health events. From 2003 to 2017, Dr. Schoch-Spana worked at the UPMC Center for Health Security; prior to that, she worked at the Johns Hopkins University Center for Civilian Biodefense Strategies, starting in 1998. She received her PhD in cultural anthropology from Johns Hopkins University (1998) and a BA from Bryn Mawr College (1986).

Larry J. Weber

Member

Dr. Larry Weber holds the Edwin B. Green Chair in Hydraulics at the University of Iowa College of Engineering. From 2004–17, Dr. Weber served as the director of IIHR—Hydroscience & Engineering at the University of Iowa, a world-renowned research institute focusing on education, research, and public service in hydraulic engineering and fluid mechanics. In 2009, he became one of the co-founders of the Iowa Flood Center.

Weber's research interests are broadly focused on fish passage facilities, physical modeling, river hydraulics, hydropower, computational hydraulics, and ice mechanics. Specifically, he focuses on the design of fish passage facilities by combining hydrodynamic data and biological data on fish response. Weber and his team apply computational fluids dynamics codes to natural river reaches and hydraulic structures to develop detailed fish passage facilities design.

Weber serves the state of Iowa as a member of the Water Resources Coordinating Council; he also serves on numerous state and federal agency committees related to water resources planning. Weber frequently presents to community groups on water resources-related topics.