### COMPANY ROLE

Senior Research Scientist

### PROJECT ROLE / FOCUS AREAS

Community vulnerability & resilience

Social policy planning

Urban data analysis & integration with modeling

Qualitative research & integration

### EDUCATION

PhD Geography, Louisiana State University, 2007

MS Urban Studies, University of New Orleans, 1999

BS Environmental Studies, State University of New York at Buffalo, 1992

### PROFESSIONAL MEMBERSHIP

American Association of Geographers

# SCOTT HEMMERLING PHD

## *Senior Research Scientist*

Scott Hemmerling, is a Senior Research Scientist at The Water Institute, focusing on research related to climate adaptation and community resilience. A cultural geographer with more than twenty years of experience investigating the impacts of environmental change on coastal communities, his recent work is focused on developing approaches to incorporate local knowledge into assessments of community resilience and quantifying the social value of ecosystem restoration projects.

Dr. Hemmerling 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). Most recently, Dr. Hemmerling developed approaches to incorporate local knowledge into assessments of community resilience and quantify the social value of ecosystem restoration projects.

### PROFESSIONAL EXPERIENCE

2015-Present: Senior Research Scientist/Director of Human Dimensions, The Water Institute

2013-2015: Associate Director of Human Dimension, The Water Institute

2006-2013: Geographer - U.S. Geological Survey, National Wetlands Research Center

2005-2006: GIS Specialist - IAP World Services, National Wetlands Research Center

2001-2005: Research Assistant - Coastal Marine Institute, Louisiana State University

1999-2001: Graduate Assistant - CADGIS Research Lab, Louisiana State University

### SELECTED PROJECTS

**Incorporating Equity and Social Vulnerability into the Design of Flood Risk Mitigation Strategies.** *National Academies of Science Gulf Research Program (Ongoing). Key Personnel.* Scenario building workshops with local stakeholders identified decision-relevant measures of the impacts nonstructural risk mitigation

and their impacts on equity, social vulnerability, resilience, and economic risk. These data will be used to develop an analysis workflow to assess Louisiana's nonstructural program design and performance.

## SELECTED PROJECTS

**Assessing Wetland Restoration Alternatives in Port Fourchon (LA): Coastal Evolution Management for a Resilient Working Coast.** *National Fish and Wildlife Foundation and The Partnership for Our Working Coast (2019-2022). Key Personnel.* Convened an environmental competency group consisting of residents and local stakeholders, scientists, and modelers to co-develop coastal restoration projects utilizing sediment generated by planned channel dredging that will optimize social and ecological co-benefits. This community/ researcher collaboration used participatory modeling activities to co-design a computer model representing the hydrology and ecology surrounding Port Fourchon and then use the model to test different nature-based restoration and protection projects.

**A Community-Informed Framework for Quantifying Risk and Resilience in Southeast Louisiana.** *Walton Family Foundation and the Foundation for Louisiana (2019-2020). Principal Investigator.* An integrated risk mapping model was developed to capture how social and physical interventions designed to reduce the susceptibility and exposure of communities and engineered systems to coastal hazards can improve the resilience of these systems. The final framework assessed the quantitative interactions among infrastructure, environment, and society in southeast Louisiana and measured the relative effects of different types of investments. The final data model incorporated stakeholder engagement outputs to identify local variations in resilience.

**Participatory Modeling: Connecting Local Knowledge and Scientific Understanding.** *The Baton Rouge Area Foundation and the Coastal Protection and Restoration Authority (2017-2019). Key Personnel.* Community members and fisherfolk in St. Bernard Parish were involved in a participatory modeling activity with a number of numerical modelers. The goal of the community/researcher collaboration was to co-design a computer model representing the hydrology and ecology of Breton Sound Estuary and use the model to test different nature-based restoration and protection projects. The models were adjusted based on the community group's feedback.

**Finding the Means: Investment and Adaptation in Vulnerable Communities.** *Tulane Institute on Water Resources Law and Policy (2018-2019). Principal Investigator.* This study used stakeholder insight to assess the social impact of nonstructural mitigation measures and potential funding streams through a series of semi-structured interviews and qualitative data analysis. The study sought to identify the main social tipping point(s) in the implementation and/or funding process for nonstructural residential programs at which it would become so taxing on the community that residents would choose to move elsewhere.

## SELECTED PUBLICATIONS


1. **Hemmerling, S.A.**, DeMyers, C., Parfait, J., Piñero, E., Baustian, M.M., Bregman, M., Di Leonardo, D., Esposito, C., Georgiou, I.Y., Grismore, A., Jung, H., McMann, B., & Miner, M.D. (2023). A Community-Informed Transdisciplinary Approach to Coastal Restoration Planning: Maximizing the Social and Ecological Co-Benefits of Wetland Creation in Port Fourchon, Louisiana, USA. Frontiers in Environmental Science, Volume 11.
2. **Hemmerling, S.A**., DeMyers, C.A, & and Carruthers, T. J. B. (2022). Building resilience through collaborative management of coastal protection and restoration planning in Plaquemines Parish, Louisiana, USA. Sustainability, Volume 14, Number 5.
3. **Hemmerling, S.A.**, DeMyers, C.A, & Parfait, J. (2021). Tracing the flow of oil and gas: A spatial and temporal analysis of environmental justice in coastal Louisiana from 1980 to 2010. Environmental Justice.
4. **Hemmerling, S.A.**, Carruthers, T.J.B., Hijuelos, A.C., & Bienn, H.C. (2020). Double exposure and dynamic vulnerability: Assessing economic well-being, ecological change and the development of the oil and gas industry in coastal Louisiana. Shore & Beach, Volume 88, Number 1, pp. 72-82.
5. **Hemmerling, S.A.**, Barra, M., Bienn, H.C., Baustian, M.M., Jung, H., Meselhe, E., Wang, Y., & White, E. (2020). Elevating Local Knowledge through Participatory Modeling: Active Community Engagement in Restoration Planning in Coastal Louisiana. Journal of Geographical Systems, Volume 22, Number 2, pp. 241-266.