

Hazard Mitigation and Resilience Applied Research Topics

Committee

Steve Moddemeyer

Chair

Steve Moddemeyer is a principal of Collinswoerman with 30 + years' experience leading governments, land owners, and project teams towards increased sustainability and resilience. He creates tools, policies and programs that empower communities to implement resilience principles into planning for land use and urban infrastructure. He works on climate change adaptation, sustainability strategies for large urban redevelopments, and advanced sustainability strategies for land owners, cities, counties, and utilities. He is a past member of the National Academies of Sciences Resilient America Roundtable (two terms). He serves as an advisor to the University of Washington Masters in Infrastructure Management and Planning, Member of the International Union for the Conservation of Nature: Resilience Theme Group, and founding member of The Little Think Tank, a group of academic and policy experts that focus on resilient recovery actions for American communities. Trained as a landscape architect, Steve creates multi-benefit implementation strategies that bring together natural and human systems by applying socio-ecological principles to system design, urban design, policy design, and industrial symbiosis development.

Christopher T. Emrich

Member

Christopher Emrich is the Boardman Endowed Associate Professor of Environmental Science and Public Administration within University of Central Florida's School of Public Administration and Director of Research in UCF's newly formed National Center for Integrated Coastal Research (UCF Coastal). His research/practical service includes applying geospatial technologies to emergency management planning and practice, long-term disaster recovery analysis, and the intersection of social vulnerability and community resilience in the face of catastrophe. From 2004 - 2008 he provided geospatial support for response and long-term recovery to the states of Florida, Louisiana, and Mississippi and has since been actively involved in understanding how differential recoveries manifest across disaster-stricken areas. Dr. Emrich is actively working at pinpointing challenges to equity in disaster recovery and mitigation and where he has most recently assisted in building empirically based and result-oriented impacts assessments to inform recovery programs in several states and US territories. He has remained at the vanguard of theory, data, metrics, methods, applications, and spatial analytical model development for understanding in the field of hazard vulnerability science and the often very in-equitable and disproportionate pattern of disaster loss and recovery across communities.

Erick C. Jones

Member

Erick C. Jones, Sr. is the dean of the College of Engineering at the University of Nevada, Reno.

Before joining UNR in September 2022, Jones was the George and Elizabeth Pickett Endowed Professor in Industrial, Manufacturing and Systems Engineering at the University of Texas Arlington.

He is a noted engineer, researcher, and leader whose career has spanned industry, government, and academia. He joined the US State Department as a Senior Advisor (Expert) in the Office of the Chief Economist through the National Academies of Science, Engineering and Medicine, Jefferson Science Fellowship focusing on Resilient Supply Chains. His industry background spanned working as an engineer to an executive at Fortune 500 companies leading projects including ERP implementations, business process re-engineering, and corporate merger and acquisitions. His industry experiences facilitated his success in academia with supply chain engineering and led to four academic textbooks, over 200 publications, 17 Ph.D.s (seven of whom are from underrepresented groups), funding from national agencies including NASA, DOT, and NSF, and tenured professorships from two Tier 1 Universities. His fundamental theories on automated inventory control, quality, and supply chain economics and logistics engineering have impacted the fields of artificial intelligence, manufacturing, and supply chain management.

Jones's leadership and administrative activities include leading government funded public/private multi-university research centers, funding large-scale programs at the National Science Foundation as a director, initiating academic programs as a chair and dean, and fundraising as a board member on public and private foundation boards. He represents and is an advocate for diverse and equitable conditions for all. Jones is an alum of Texas A&M University and Distinguished Engineering Alumni of the University of Houston, a scholar of William J. Fulbright and Alfred P. Sloan programs, and a Fellow of AAAS and the Institute of Industrial and Systems Engineering.

Elena M. Krieger

Member

Elena Krieger is the Director of Research at the energy science and policy research institute Physicians, Scientists, and Engineers for Healthy Energy (PSE). She joined PSE in 2013 to launch the organization's clean energy practice area, and now oversees its scientific research efforts. Her current work focuses on accelerating the transition to clean energy resources, and developing transition pathways that realize non-energy co-benefits. She serves as principal investigator on numerous research projects, and simultaneously works closely with community organizations, non-profits, policymakers, and other stakeholders to use science to inform energy and climate policy. Her current research areas include designing solar+storage resilience hubs and deployment strategies, and integration of resilience, health, equity, and environmental metrics into state-level deep decarbonization efforts. She is a member of the Disadvantaged Communities Advisory Group to the California Energy Commission and the California Public Utilities Commission, a member of the National Academies' New Voices in Science, Engineering and Medicine Program 2021 Cohort, and a science advisor to the American Resilience Project. She received her PhD in Mechanical & Aerospace Engineering from Princeton, where her research focused on optimizing energy storage in renewable systems, and holds an AB in Physics and Astronomy & Astrophysics from Harvard.

Therese P. McAllister

Member

Therese McAllister is the Community Resilience Group Leader and Program Manager in the Engineering Laboratory (EL) at the National Institute of Standards and Technology (NIST). She is also the NIST Liaison for the NIST-funded Center of Excellence, Center for Risk-Based Community Resilience Planning, that is led by Colorado State University. Dr. McAllister conducts research on community resilience, with a focus on the integrated performance of physical infrastructure and social and economic systems. She has expertise in structural reliability, risk assessment, failure analysis of buildings and infrastructure systems, and the performance of structures in fire. She co-led detailed structural analyses of the WTC towers and WTC 7 for the NIST WTC Investigation, conducted reliability studies of levee systems for the USACE following Hurricane Katrina flooding in New Orleans, and evaluated Hurricane Sandy flood effects on infrastructure systems as part of the FEMA MAT. She recently was recognized with the 2021 ASCE Walter P Moore, Jr award and 2018 ASCE Ernest E Howard Award for her research on structural codes and standards and on resilience. Dr. McAllister is an ASCE Structural Engineering Institute Fellow and serves on the ASCE/SEI 7 standard committee, Infrastructure Resilience Division, the Technical Council on Life-Cycle Performance, Safety, Reliability and Risk of Structural Systems, and the SEI Board Level Resilience Committee. She previously served on the International Code Council (ICC) Structural Committee. She is an advisory panel member for NIBS, DHS and HUD resilience activities. She has a PhD and MS in Civil/Structural Engineering from Johns Hopkins University, an MS in Civil/Ocean Engineering from Oregon State University, and a BS in Ocean Engineering from Florida Atlantic University.

Adam Z. Rose

Member

Adam Rose is a Research Professor in the University of Southern California Sol Price School of Public Policy, and Research Fellow in USC's Center for Risk and Economic Analysis of Terrorism Events (CREATE). He obtained his Ph.D. in Economics from Cornell University. Professor Rose's primary research interest is the economics of disasters. He has spearheaded the development of CREATE's comprehensive economic consequence analysis framework and has done pioneering research on resilience at the level of the individual business/household, market/industry and regional/national economy. He is currently the PI on an NSF grant on advanced computational methods to improve reliability and resilience of interdependent systems and a contract with the Critical Infrastructure Resilience Institute to measure static economic the cost-effectiveness of individual resilience tactics. Professor Rose is the author of several books and over 250 refereed professional papers. He has served as the American Economic Association Representative to the American Association for the Advancement of Science and as a member of the Board of Directors of the National Institute of Building Sciences Multi-Hazard Mitigation Council. He is the recipient of several honors and awards, including, among others, the Distinguished Research from the International Society for Integrated Risk Management, a Woodrow Wilson Fellowship, East-West Center Fellowship, American Planning Association Outstanding Program Planning Honor Award, and Applied Technology Council Outstanding Achievement Award. He is also an elected Fellow of the Regional Science Association International. Professor Rose has served on NAS Panels on Earthquake Resilience and on Seismic Warning.

Stacy A. Swann

Member

Stacy Swann is the CEO and Founding Partner of Climate Finance Advisors, a benefit LLC based in Washington, DC with expertise in banking, development finance, and climate change. During her career, Ms. Swann has held senior positions with the International Finance Corporation (IFC), as well as with the US Department of Treasury, Enron Corporation, and other organizations. For more than twenty five years she has worked with investors, financial institutions and policymakers on mainstreaming climate considerations across both investment and policy and has particular expertise in blended finance, climate finance, climate-smart fiscal policies, and approaches to identify, assess and manage climate risk.

In addition to leading Climate Finance Advisors, Ms. Swann is currently the Chair of the Export-Import Bank of the United States (EXIM) Chair's Council on Climate Change, a sub-committee of its Advisory Board. She also sits on the Board for the Montgomery County Green Bank the United States' first county-level green bank and is Chair of its Investment Committee. She is a member of the Steering Committee/Board of the Global Water Partnership, a global action network of more than 3,000 Partner bodies in 179 countries focused on building sustainable water systems globally. Stacy holds an MBA in Finance and Development Economics from American University, a Master's degree from Harvard University and a Bachelors degree from City University of New York - Hunter College.

Negin Sobhani

Staff Officer