

Benefits, Applications, and Opportunities of Natural Infrastructure: A Workshop

Committee

Hussam Nabil Mahmoud

Chair

Dr. Mahmoud is the George T. Abell Professor in Infrastructure in the Department of Civil and Environmental Engineering at Colorado State University (CSU) and is the director of the Structural Laboratory. He obtained his BSc and MSc in civil engineering from the University of Minnesota and his Ph.D. from the University of Illinois at Urbana-Champaign (UIUC). Prior to pursuing his Ph.D., he was the manager of the NEES Earthquake Laboratory at the UIUC. Prior to arriving at UIUC, he was a research scientist at Lehigh University working on assessment and repair of deteriorated infrastructure. Dr. Mahmoud's research program has three major thrusts including assessing community resilience and recovery of infrastructure and socio-economic institutions following extreme events with a focus on climate-driven hazards, quantifying building damage to extreme single and multiple hazards, and evaluating deteriorated infrastructure such as bridges and underwater systems. He has authored over 250 publications and has given more than 100 presentations including 70 invited talks at national and international conferences. He has chaired and served on numerous technical committees, including the ASCE Committees on fire protection and on Multi-hazard Mitigation. His research has received media coverage through citations and interviews in numerous venues, including Nature Climate Change, Smithsonian Magazine, the Independent, Business Insider, and CNN.

Brian Paul Bledsoe

Member

Brian Bledsoe is Georgia Athletic Association Distinguished Professor in Resilient Infrastructure, and founding director of the Institute for Resilient Infrastructure Systems in the College of Engineering at the University of Georgia. Brian has over 30 years of experience as a civil and environmental engineer, hydrologist, and environmental scientist in the private and public sectors. He holds degrees from Georgia Tech, North Carolina State University, and Colorado State University (Ph.D. Civil Engineering - Hydraulics). Before entering the professorate, he worked as a consulting engineer and surveyor, and for the State of North Carolina as a watershed restoration engineer. Brian's research is focused on the interface of engineering, hydrology, and ecology with emphasis on infrastructure systems, stormwater and flood management, water quality, and natural infrastructure. He received a National Science Foundation CAREER Award in 2006, served as a Fulbright Scholar in Chile in 2008, was elected a Fellow of the American Society of Civil Engineers in 2017, and is past president of the American Ecological Engineering Society.

Paul L. Freedman

Member

Paul Freedman is co-founder (1975) and CEO of LimnoTech a nationally and internationally recognized research and consultancy providing services related to water quality and resource protection. He was an early pioneer and advocate of watershed management and green infrastructure which involves using land practices to protect surface waters. He also was a pioneer in developing corporate water stewardship which typically involves the use of land practices to replenish and protect water supplies and environment. LimnoTech under his oversight has also been working with the Army Corps of Engineers supporting their program entitled Engineering with Nature. He is a member of the National Academy of Engineering, a Fellow of both the Water Environment Federation (WEF) and American Society of Civil Engineers. He is a Past President of WEF and the founding chair of their Watershed Management Committee, among many other roles. He has chaired 5 national conferences involving watershed management. He has hundreds of papers, presentations and expert workshops to his credit. He is the recipient of numerous state and national awards. He has participated in 3 NASEM NRC panels which addressed in part land use activities to protect water quality. He has a Masters Degree in Civil Water Resource Engineering from the University of Michigan.

Hans Louis-Charles

Member

Louis-Charles is an Assistant Professor in the Homeland Security and Emergency Preparedness program at the L. Douglas Wilder School of Government and Public Affairs at Virginia Commonwealth University (VCU). He earned his PhD in Disaster Science and Management from the University of Delaware and was a doctoral researcher at the Disaster Research Center. At VCU, Louis-Charles teaches courses in risk and vulnerability assessment, and disaster response & recovery. His research includes mix-methods studies on household disaster preparedness and evacuation behavior, as well as emergency management policy and practice. His research on ethical post-disaster fieldwork was selected for the opening plenary of the 2020 International Researcher Committee on Disasters- Researchers Meeting held in conjunction with the 45th Annual Natural Hazards Research and Applications Workshop. Louis-Charles was the Co-Pi of the National Science Foundation INCLUDES project- Minority SURGE Capacity in Disasters, which mobilized underrepresented STEM graduate scholars towards disaster recovery efforts in the U.S. Virgin Islands following the 2017 Atlantic hurricane season. He is a Founding Fellow and the current Vice President of the William A. Anderson Fund, a non-profit that mentors underrepresented doctoral students within the academic disciplines relevant to hazard mitigation and disaster risk reduction.

Oluponmile Olonilua

Member

Oluponmile Olonilua is a professor of emergency management, homeland security, and public administration at her alma mater, Texas Southern University, Houston, Texas. She was the first PhD graduate from the urban planning and environmental policy program in 2006. Oluponmile is an expert on hazard mitigation, disaster management, homeland security. She is well published and her publications have focused primarily on public engagement and equity issues in hazard mitigation. Some of her publications have been in top journals in the field of emergency management including but not limited to the Journal of Emergency Management, Journal of Security, Intelligence, and Resilience Education. She has won the Mary Fran Myers scholarship award of the Natural Hazards Workshop, Colorado, and has won the advisor of the year with the Network of Schools of Public Policy, Affairs and Administration.

Eileen Shader

Member

Eileen Shader is Director of River Restoration at American Rivers. She leads the organization's national Floodplain Program to build capacity for equitable, integrated, and nature-based floodplain management. Through this initiative she seeks reforms to local, state and federal floodplain management policies; fosters a nation-wide Community of Practice to support equitable, integrated and nature-based floodplain management; and builds institutional capacity to implement and manage floodplain restoration projects across the United States. Eileen works at the confluence of the river conservation and flood management fields to break down silos and foster integrated planning and management strategies that maximize the benefits that rivers and floodplains provide to communities. She has more than fifteen years of experience advocating for improvements to federal water resources policies to foster support for river restoration and the use of nature-based solutions. She serves as Co-Chair of the Natural and Beneficial Functions Committee, and Co-Chair of the Social Justice Task Force for the Association of State Floodplain Managers and participates in the leadership teams for numerous coalitions including the Natural Floodplain Functions Alliance and the Water Protection Network. Eileen is a Certified Floodplain Manager and has a M.A. in Natural Resources Policy from the George Washington University.

Joseph David Waggoner III

Member

David Waggoner is the founding principal of Waggoner & Ball, an award-winning, internationally active architecture and environment practice located in New Orleans. The firm grounds its architectural work in historic preservation with a concentration on modern institutional projects and educational facilities. After Hurricane Katrina, David saw an opportunity for New Orleans to reinvent itself as a sustainable city that embraces its lifeblood: water. He developed a process that examines history, soils, infrastructure networks and urban space, along with water, as the foundation for design, communicating the realities of the landscape to leaders and the public to inspire change. He initiated Dutch Dialogues, an exchange between Dutch professionals and American counterparts focused on water-based urban design. David subsequently led an international team to develop the Greater New Orleans Urban Water Plan, which addresses sustainable storm water management at all scales and envisions a region that embraces water to improve resiliency, quality of life, and create new economic and development opportunities. The firm's environment work is focused on the infrastructure and spatial identity of water. This important evolving methodology has been explored productively nationally and internationally. David is a graduate of Yale School of Architecture, a Fellow in the American Institute of Architects, and a recipient of the AIA Louisiana Medal of Honor.

Negin Sobhani

Staff Officer