

Urban Flooding in the United States

Committee

David R. Maidment

Chair

DAVID R. MAIDMENT (NAE) is the Hussein M. Alharthy Centennial Chair in Civil Engineering and Director of the Center for Research in Water Resources at the University of Texas, Austin. Prior to joining the faculty in 1981, he was a research scientist at the Ministry of Works and Development in New Zealand, and at the International Institute for Applied Systems Analysis in Vienna, Austria. Dr. Maidment is a specialist in surface water hydrology, and in particular the application of geographic information systems to hydrology. He has authored or edited several books on these topics, including "Applied Hydrology," the "Handbook of Hydrology," "Hydrologic and Hydraulic Modeling Support with GIS," and "Arc Hydro Groundwater: GIS for HydroGeology." Dr. Maidment is an outstanding committee chair and has led the NRC Committee on FEMA Flood Maps, the Committee on Floodplain Mapping Technologies, and several hydrologic science committees. He has also been a member of the Mapping Science Committee. In addition to NRC committees, he is the leader of the Hydrologic Information Systems program of the Consortium of Universities for the Advancement of Hydrologic Science, Inc. In 2010 he received the American Water Resources Association's Award for Water Resources Data and Information Systems, which was also permanently renamed the David R. Maidment Award for Water Resources Data and Information Systems. He received ESRI's Lifetime Achievement Award for his contributions to the application of GIS in water resources in 2003. Dr. Maidment is a fellow of the International Water Resources Association and a national associate of the National Academies. He received his B.S. in agricultural engineering from the University of Canterbury, New Zealand, and his M.S. and PhD in civil engineering from the University of Illinois at Urbana-Champaign.

Chad Berginnis

Member

CHAD BERGINNIS, is the Executive Director for the Association of State Floodplain Managers (ASFPM), a national non-profit organization of over 16,000 members and 35 state chapters whose mission is to promote education, policies, and activities that mitigate current and future losses, costs, and human suffering caused by flooding; and to protect the natural and beneficial functions of floodplains - all without causing adverse impacts. Mr. Berginnis has over 20 years of experience in various aspects of natural hazard management, flood loss reduction, and land use planning / programs at the state, local and private sector level. As a state official, Mr. Berginnis worked in the Ohio Floodplain Management Program and was Ohio's State Hazard Mitigation Officer. He has been involved in creating/administering the Appalachian Flood Risk Reduction Initiative, administered the FEMA Community Assistance Program, revised model state floodplain management regulations, oversaw state hazard mitigation operations after three Federally declared flood disasters and authored the 2008 update of Ohio's mitigation plan. As a local official, Mr. Berginnis administered land use, economic development and floodplain management programs in Perry County, Ohio. In the private Sector, Mr. Berginnis was the national Practice Leader in hazard mitigation for Michael Baker Jr. Inc. Mr. Berginnis is an expert in floodplain management and hazard mitigation. He is past Insurance Committee Chair, Mitigation Policy Committees' Coordinator, Vice Chair, and Chair of ASFPM, and previously served as an appointed Planning Commissioner for Licking County Ohio. Mr. Berginnis holds a B.S. in natural resources from Ohio State University and is a Certified Floodplain Manager.

LtGen. Thomas P. Bostick, (Ret.)

Member

LIEUTENANT GENERAL THOMAS P. BOSTICK (Ret) is currently serving as the Senior Vice President of the Environment Sector at Intrexon. Most recently, he served as the 53rd Chief of Engineers and Commanding General of the U.S. Army Corps of Engineers. Bostick also served as the Deputy Chief of Staff, G-1, responsible for total Army personnel and manpower; Commanding General, U.S. Army Recruiting Command; and as the Assistant Division Commander-Maneuver; and then Assistant Division Commander-Support of the 1st Cavalry Division. He deployed with the Division in support of Operation Iraqi Freedom before commanding the Army Corps of Engineers Gulf Region Division, where he was responsible for more than \$18 billion of reconstruction in Iraq. Bostick also served as an Associate Professor of Mechanical Engineering at West Point and was a White House Fellow, working as a special assistant to the Secretary of Veterans Affairs. Bostick has been one of the leading advocates in the federal government on resilience and developing a systems approach to watersheds. He has appeared on CNN, FOX News, CBS Evening News, the Daily Show and more. He has spoken extensively on resilience including remarks at the United Nations, Risk Analysis World Congress in Singapore, and the National Academy of Sciences. He led the U.S. Army Corps of Engineers in the completion of the North Atlantic Coast Comprehensive Study: Resilient Adaptation to Increasing Risk report to Congress in 2015. Lt. Gen. (Ret.) Bostick is a 1978 graduate of the U.S. Military Academy and holds Master of Science Degrees in both Civil Engineering and Mechanical Engineering from Stanford University, and a PhD in Systems Engineering from George Washington University.

Samuel Brody

Member

SAMUEL D. BRODY is a Professor and holder of the George P. Mitchell '40 Chair in Sustainable Coasts in the Departments of Marine Sciences and Landscape Architecture and Urban Planning at Texas A&M University. He is the Director of Center for Texas Beaches and Shores and the Co-Director of the Institute for Sustainable Coastal Communities. Dr. Brody's research focuses on coastal environmental planning, spatial analysis, flood mitigation, climate change policy, and natural hazards mitigation. He recently authored the book, *Rising Waters: The causes and consequences of flooding in the United States* published by Cambridge University Press. Dr. Brody teaches graduate courses in environmental planning and sustainable/resilient coastal development. Dr. Brody holds a B.A. in environmental studies and anthropology from Bowdoin College, a M.S. in resource policy and behavior from the University of Michigan, and a Ph.D. in city and regional planning from the University of South Carolina.

Jeffrey Czajkowski

Member

JEFFREY CZAJKOWSKI is the Willis Re Research Fellow at the Wharton Risk Management and Decision Processes Center. His primary research fields are the economics of natural hazards and environmental economics where his research is principally focused on: the modeling of direct economic losses associated with natural hazard event occurrences such as hurricanes, flood, and hail; quantifying risk-based insurance premiums related to catastrophic events; estimating the benefits associated with short and long-term natural hazard preparation and mitigation activities; modeling and understanding economic decision making in the presence of a natural disaster; modeling the coastal and inland fatality risk associated with hurricane landfalls; and the economic valuation of environmental goods via revealed and stated preference techniques. Prior to his position at the Risk Center, Dr. Czajkowski was an assistant professor of economics at Austin College. Through September 2009 he was an adjunct assistant research professor at the International Hurricane Research Center (IHRC) at Florida International University (FIU), where he was awarded two National Oceanic and Atmospheric Administration Florida Hurricane Alliance research grants. During his tenure at FIU he was an E.P.A fellow as well as a FIU dissertation fellow. Preceding graduate school he worked in New York City as a research associate for Coopers & Lybrand Consulting and a vice-president for JP Morgan. He holds a B.S. from Carnegie Mellon University, an M.S. in environmental and urban systems from Florida International University, and a Ph.D. in economics from Florida International University.

Dr. Dara Entekhabi

Member

DARA ENTEKHABI is the Bacardi and Stockholm Water Foundations Professor at the Massachusetts Institute of Technology (MIT) in the Department of Civil and Environmental Engineering. His research interests are in the basic understanding of coupled surface, subsurface, and atmospheric hydrologic systems that may form the bases for enhanced hydrologic predictability. Dr. Entekhabi has served on the Academies Committee on Hydrologic Science, the Water Science and Technology Board and the Committee to Assess the National Weather Service Advanced Hydrologic Prediction Service Initiative program. He also served on the Committee on Earth Science and Applications from Space: A Community Assessment and Strategy for the Future. Dr. Entekhabi holds a B.A. and M.A. from Clark University. He received his Ph.D. in civil engineering from the Massachusetts Institute of Technology.

Harriet Festing

Member

HARRIET FESTING currently serves as President of Anthropocene Associates. She is an environmentalist and community engagement expert in urban livability, social justice, urban flooding and climate resilience and sustainable development. She has worked on the design of public spaces, water, housing, energy, agriculture, transportation, and regional resiliency planning. Under Ms. Festing's leadership, more than \$12.5m is being invested in disadvantaged communities as a result of the pioneering, multi-award winning RainReady service that she established. Ms. Festing has an M.S. in business management from the University of London.

Katherine Greig

Member

KATHERINE GREIG is a Deputy Director focused on building resiliency, flood risk, flood insurance and climate change data at the NYC Mayor's Office of Recovery and Resiliency. She previously worked on the Hurricane Sandy Rebuilding Task Force, where she also worked on insurance policy. Prior to the Task Force, she worked at the Boston Consulting Group and the Federal Reserve Bank of New York. Ms. Greig has an MALD from the Fletcher School of Law and Diplomacy, an MBA from Dartmouth's Tuck School of Business and a B.A. from Stanford.

Jo Ann Howard

Member

JO ANN HOWARD is president of Austin's H2O Partners, Inc., a planning firm. NHMA President Ed Thomas presented the award to Howard at NHMA's January annual board meeting in Austin, Texas. Jo Ann Howard was appointed as Federal Insurance Administrator at the Federal Emergency Management Agency in 1998. She was responsible for managing the more than \$523 billion of flood insurance in force in the National Flood Insurance Program. In 2001, Jo Ann Howard established H2O Partners, Inc. in Austin. H2O Partners is a firm consulting in flood insurance, hazard mitigation planning, disaster protection and recovery, public assistance, HUD programs, homeland infrastructure security, and floodplain management issues. Prior to her tenure at FEMA, she served as head of the Texas Department of Insurance as chief insurance regulator for the State of Texas and as a member of the National Association of Insurance Commissioners. She received a law degree from the University of Texas School of Law in Austin, a master's in public administration from East Texas State University, and a BS in education from Abilene Christian University in Abilene.

Conor Jensen

Member

CONOR JENSEN is the Vice President of Strategic Execution for AmTrust's Specialty Risk division. He has a specific focus on strategic analytics within AmTrust Specialty Risk companies; serving entire Specialty Risk family and working closely with greater AmTrust data science and data warehouse group. He has spent over a decade working in the analytics space, both in model development and as a model user. Previously he was with Zurich insurance, serving as the Analytics Program Director for Zurich North America's Predictive Analytics unit, as part of an internal strategy consulting practice at Zurich, and worked in actuarial across multiple lines with Zurich's units in North America. Before moving to insurance, Mr. Jensen was a Weather Forecaster in the US Air Force supporting operations in Southwest Asia. Mr. Jensen earned his Bachelor of Science degree in Mathematics from the University of Illinois at Chicago.

Eric Tate

Member

ERIC TATE is an Assistant Professor in the Department of Geographical and Sustainability Sciences at the University of Iowa. Dr. Tate's research interests lie at the nexus of natural hazards and society, with particular focus on vulnerability and sustainability indicators, flood loss estimation, uncertainty analysis, and geospatial modeling. In the classroom, he teaches courses on water resources, hazards and disasters, environmental justice, and contemporary environmental issues. He earned his Ph.D. in geography from the University of South Carolina.

Claire Welty

Member

CLAIRE WELTY is the Director for the Center for Urban Environmental Research and Education at the University of Maryland, Baltimore County. Her research includes Urban hydrology; Contributing to fundamental understanding of transport processes in aquifers; Mathematical modeling of groundwater flow and transport in porous and fractured media; Application of stochastic methods to interpreting groundwater problems; Design and analysis of field-scale hydraulic and tracer tests. Dr. Welty holds a B.A. in environmental sciences from University of Virginia, a M.S. in environmental engineering from The George Washington University, and a Ph.D. in civil engineering from Massachusetts Institute of Technology.

James L. Wescoat, Jr.

Member

JAMES L. WESCOAT, is the Aga Khan Professor in the Department of Architecture at the Massachusetts Institute of Technology. He was previously the head of landscape architecture at the University of Illinois at Urbana-Champaign, and a professor in the Department of Geography, University of Colorado. His research has concentrated on water systems in South Asia and the United States from the site to river basin scales. Dr. Wescoat has conducted water policy research in the Colorado, Indus, Ganges, and Great Lakes basins, including the history of multilateral water agreements. He has contributed to multidisciplinary studies of climate risks in the Indus River basin of Pakistan sponsored by USEPA and the World Bank; and to several major reviews of Indus basin policy and planning. He is currently conducting comparative international research on water hazards and conservation innovations in the United States, South Asia, and Central Asia. Dr. Wescoat has served on and chaired several NRC Committees, most recently the Committee on Himalayan Glaciers, Climate Change, and Implications for Downstream Populations; and Delta Waters: Research to Support Integrated Water and Environmental Management in the Lower Mississippi River (2013). He received his B.L.A. in landscape architecture from Louisiana State University and his M.A. and Ph.D. in geography from the University of Chicago.