

Levees and the National Flood Insurance Program: Improving Policies and Practices

Committee

Gerald E. Galloway, Jr.

Chair

Gerald E. Galloway, Jr. (NAE), Chair, is the Glenn L. Martin Institute Professor of Engineering in the Department of Civil and Environmental Engineering, and an affiliate professor of public policy, at the University of Maryland. Dr. Galloway is a civil engineer, geographer, and public administrator whose research and interests focus on U.S. national water policy, in general, and national floodplain management policy, in particular. Dr. Galloway had a 38-year military career that included positions of commander of the U.S. Army Corps of Engineers District in Vicksburg, Mississippi, and professor and founding head of the Department of Geography and Environmental Engineering at the U.S. Military Academy at West Point. Dr. Galloway was promoted to brigadier general in 1990 and retired from active duty in 1995. He has served on several national and state committees that have reviewed levee and dam safety issues and concerns, including some panels supported by the Federal Emergency Management Agency. He received his B.S. degree (civil engineering) from the U.S. Military Academy, his M.S.E. degree (civil engineering) from Princeton University, and his Ph.D. degree (geography) from the University of North Carolina.

Patrick L. Brockett

Member

Patrick L. Brockett is the Director of the Risk Management and Insurance Program and the Gus S. Wortham Memorial Chair in Risk Management and Insurance at the University of Texas. Dr. Brockett teaches courses and conducts research in a wide variety of fields including risk management and insurance; financial risk; actuarial science; decision analysis; management science/operations management and research; statistical analysis and business applications, and; information theory. Dr. Brockett is the winner of the 2011 "Excellence in Teaching Award" given by the American Risk and Insurance Association. He was elected as a fellow to the Institute for Risk Management (2008). In 2006, he received the American Risk and Insurance Association Outstanding Achievement Award, for furthering the science of risk management through the promotion of education, research and communication during my nine year tenure as editor of The Journal of Risk and Insurance from 1998-2006. Dr. Brockett was a member of the NRC Board on Mathematical Sciences and their Applications from 2005-08. He also is an elected member of the International Statistical Institute. Dr. Brockett received his B.S. degree in mathematics from the Cal State University in Long Beach, and his his M.S. and Ph.D. degrees in mathematics from the University of California, Irvine.

Susan L. Cutter

Member

Susan L. Cutter is a Carolina Distinguished Professor of Geography at the University of South Carolina where she directs the Hazards and Vulnerability Research Institute. Her research interests are in disaster vulnerability/resilience science—what makes people and the places where they live vulnerable to extreme events and how vulnerability and resilience are measured, monitored, and assessed. She led a Hurricane Katrina post-event field team to examine the geographic extent of storm surge inundation along the Mississippi and Alabama coastline and its relationship to the social vulnerability of communities. She also provided testimony to Congress on hazards and vulnerability and was a member of the Corps of Engineers IPET team evaluating the social impacts of the New Orleans and Southeast Louisiana Hurricane Protection System in response to Hurricane Katrina. Dr. Cutter serves on many national advisory boards and committees including those of National Research Council, the AAAS, the National Science Foundation, and the Heinz III Center for Science, Economics, and the Environment. She was a founding member of the Executive Committee of the National Consortium for the Study of Terrorism and Responses to Terrorism (START, a DHS Center of Excellence focused on social and behavioral sciences). Dr. Cutter also holds the MunichRe Foundation Chair (2009-2012) on Social Vulnerability through the United Nations University-Institute for Environment and Human Security, in Bonn, Germany. Dr. Cutter received her B.S. degree from the California State University and her M.S. and Ph.D. degrees from the University of Chicago.

David T. Ford

Member

David T. Ford is the owner and president of David Ford Consulting Engineers in Sacramento, California. Dr. Ford is an internationally recognized expert in hydrologic, hydraulic, and water resources engineering, planning, and management. He has over 35 years of project management experience, including 20 as owner and president of David Ford Consulting Engineers, Inc., and 12 as a senior hydraulic engineer at the U.S. Army Corps of Engineers' Hydrologic Engineering Center (HEC). He has served as a consultant to the Corps of Engineers, the National Weather Service, government agencies in California, Nevada, Arizona, Texas, India, Portugal, the United Nations, World Bank, and USAID, and to engineering firms worldwide. Ford has (ghost)written and/or revised, in whole or in part, many Corps of Engineers guidance documents, including the Engineer Manual (EM) on risk-based analysis for flood risk management studies, the EM on hydrologic engineering requirements for flood risk studies, and the EM on hydrologic analysis of interior areas. He also has prior NRC committee experience, most recently with the WSTB Committee on Hydrologic Science. He has served on the faculty of the University of California and California State University. Dr. Ford received his B.S., M.S., and Ph.D. degrees in civil engineering from the University of Texas.

Clive Q. Goodwin

Member

Clive Q. Goodwin is assistant vice president and manager, natural hazard peril underwriting, for FM Global Insurance Company, located in Johnston, Rhode Island. In this position, Goodwin manages worldwide underwriting of wind, flood and collapse perils. This involves developing and maintaining strategies to capitalize on FM Global's engineering knowledge of these hazards to benefit clients in terms of risk improvement and insurance terms and conditions. Recently, Goodwin has been the leader of FM Global's efforts to collaborate with the U.S. Army Corps of Engineers, Federal Emergency Management Agency (FEMA) and other agencies to highlight the concerns regarding the aging inventory of levees while supporting their efforts to change U.S. national policy concerning the levee risk. Goodwin holds a B.S. in mechanical engineering and metallurgy from the University of Manchester, Manchester, U.K and received a Certified Diploma in accounting and finance. Additionally, he is a chartered engineer and a member of the Institution of Mechanical Engineers and has served on the Industry Leaders Council of the American Society of Civil Engineers.

Karin M. Jacoby

Member

Karin M. Jacoby is president of Spica Consulting, LLC, in Kansas City, MO, a firm she founded in 2009, focused on flood risk reduction through land, river and stormwater management. She has 25 years of experience in water resources management, much of that in drainage, stormwater, and flood damage reduction, including 14 years with the City of Kansas City, MO as an Assistant City Engineer/Division Manager providing oversight for a \$600 million waterways program. Prior to that she worked in the St. Louis area in the private sector as a project manager and design engineer on master planning and drainage studies, transportation, and site development projects. She has served as the Executive Director of the MO-ARC Association since 2001, a regional nonprofit focused on beneficial management of water and related land resources, and is a board member of the National Waterways Conference. Since her appointment in 2008 by the Assistant Secretary of the Army (Civil Works) she has been a member of the congressionally authorized National Committee on Levee Safety. Jacoby received her B.S. degree in civil engineering from the University of Missouri, Rolla, her M.P.A. and J.D. degrees from the University of Missouri, Kansas City, and is a registered engineer and licensed attorney.

David I. Maurstad

Member

David I. Maurstad is a director and senior vice-president with Optimal Solutions and Technologies, Inc. a provider of management consulting, integrated information technology, engineering services, and business process outsourcing in Washington, DC. Mr. Maurstad previously served as director of water policy and planning for a nationally recognized engineering firm specializing in flood mapping and floodplain management. He has more than 30 years of leadership experience with both the private insurance industry and federal, state, and local government. Mr. Maurstad served as assistant administrator for the U.S. Department of Homeland Security Federal Emergency Management Agency (FEMA). In June 2004, he was appointed by President George W. Bush to provide leadership for some of the nation's leading multi-hazard risk reduction programs. In this role he was the federal insurance administrator charged with the overall management of FEMA's National Flood Insurance Program. He previously served as the director of FEMA Region VIII from 2001 to 2004 coordinating federal, state, tribal, and local management of emergencies through planning, preparedness, mitigation, response and recovery. A native Nebraskan, he served as Mayor of Beatrice, State Senator and Lieutenant Governor.

He received his B.S. degree in business administration and his M.B.A. degree from the University of Nebraska.

Martin W. McCann

Member

Martin W. McCann is the president of Jack R. Benjamin and Associates, Inc., in Menlo Park, California. Dr. McCann also serves as a consulting professor of civil and environmental engineering at Stanford University. At Stanford, he is the former chairman of the National Performance of Dams Program, which he founded and which has created a national network to report dam safety incidents and archive this information for wide use by the geotechnical and seismic engineering communities. Dr. McCann's professional background and research have focused on probabilistic hazards analysis, including hydrologic events, risk assessment, reliability and uncertainty analysis, and systems analysis. Dr. McCann has served as a consultant to several government and private sector groups in the U.S. and abroad. He currently also is serving as a member of the NRC Committee on Integrating Dam and Levee Safety and Community Resilience. Dr. McCann received his B.S. degree from Villanova University and his M.S. and Ph.D. degrees from Stanford University.

Andre D. McDonald

Member

Andre D. McDonald is the founder and President of Fort Bend Flood Management Association in Fort Bend County, Texas, a group of seventeen flood management agencies and the consultants that service that industry. He has served as an appointed Board Member of Fort Bend County Levee Improvement District since 2000, and been president of that board since 2004. He has an extensive background in construction primarily with management and operation of heavy civil construction engineering companies. His more than thirty years of experience include the day-to-day management with full profit and loss responsibilities of a heavy civil contracting company. The company was involved with direct construction and commissioning of underground utilities distribution and collection systems, earthwork, paving, and related infrastructure and other intra-urban development. He has been part of the management and direct field operations of Airport construction, mass earthworks, industrial plant construction, wastewater treatment plant construction, modernization of oil refineries and grass roots LNG facilities. Mr. McDonald studied engineering and business administration at Mississippi State University.

Earthea A. Nance

Member

Earthea A. Nance is an assistant professor in the Department of Planning and Urban Studies at the University of New Orleans. Dr. Nance has over 18 years of experience in the areas of environmental planning and management, hazard mitigation, sustainable urban development, environmental remediation, water, wastewater, hazardous waste, and alternative energy. After Hurricane Katrina, Dr. Nance served as a Ford Foundation loaned-executive to the City of New Orleans, where she directed the city's hazard mitigation, environmental, and alternative energy divisions and authored the city's sustainability strategy. She is a consultant to the RAND Corporation on policy adaptation to climate change in New Orleans and advises the US EPA Science Advisory Board as a member of their environmental engineering committee. She also serves as a consultant to local environmental groups trying to understand the impacts of the Deepwater Horizon oil spill. Her research has examined the impacts of disasters on social and ecological diversity, the development of executive education in resilience and risk management, community-based environmental monitoring in Gulf Coast communities, and participatory water and sanitation systems in developing countries. Dr. Nance received her B.S. and M.S. degrees in civil and environmental engineering from the University of California-Davis and her Ph.D. degree in civil and environmental engineering from Stanford University.

Kenneth W. Potter

Member

Kenneth W. Potter is a professor in the Department of Civil and Environmental Engineering at the University of Wisconsin. Dr. Potter's areas of research include hydrologic modeling and design, estimation of hydrologic risk and hydrologic budgets, aquatic ecosystem restoration, and water quality assessment and remediation. Dr. Potter has been a AAAS fellow, a fellow of the AGU, and a Woodrow Wilson fellow. He has extensive NRC committee experience, as well. He currently is study low-impact development alternatives as a means to accommodate population growth without sacrificing environmental quality (e.g. constructing impervious and pervious areas to help maintain natural rates of infiltration and groundwater recharge). He is a former member of the Water Science and Technology Board, chaired the NRC Committee on American River Flood Frequencies, served as vice-chair of the NRC Committee on Flood Control Alternatives in the American River Basin and, most recently, served on the NRC Committee on New Orleans Regional Hurricane Protection Projects. Dr. Potter received his B.S. degree in geology from Louisiana State University and his Ph.D. degree in geography and environmental engineering from Johns Hopkins University.

J. David Rogers

Member

J. David Rogers is the Karl F. Hasselmann Chair of Geological Engineering at the Missouri University of Science and Technology in Rolla, Missouri. Dr. Rogers has extensive experience in evaluating the stability of natural slopes, embankments, stream channels, highways and hydraulic structures. He has served as principal investigator for research funded by the NSF, U.S. Geological Survey, Federal Highway Administration, Department of Defense and the California and Missouri Departments of Transportation. Dr. Rogers has served on several panels, including the Technical Advisory Committee on Grading Standards for the California Geological Survey, and the Building Codes and Dam Safety Committees of the Association of Engineering Geologists. He recently has been working on development of computerized algorithms for electronic mapping of landslides using Geographical Information Systems, predictions of permanent deformation in seismically-induced landslides, and mapping of geologic hazards. Dr. Rogers received his B.S. degree in earth science and geology at Cal State University, Pomona, his M.S. degree in geological engineering from the University of California, Berkeley, and his Ph.D. degree in geological and geotechnical engineering from the University of California, Berkeley.