Levee Investment Strategy Science Review Panel Members

James K. Mitchell, Sc.D., P.E.

Jim Mitchell received his Bachelor of Civil Engineering degree from Rensselaer Polytechnic Institute in 1951, and Master of Science and Doctor of Science degrees from the Massachusetts Institute of Technology in 1953 and 1956. He was a professor and research engineer at the University of California, Berkeley, from 1958 until 1993 and served as Chairman of the Department of Civil Engineering from 1979 through 1984. He joined Virginia Tech in 1994 as the Charles E. Via, Jr. Professor in the Department of Civil and Environmental Engineering, was appointed University Distinguished Professor in 1996, and University Distinguished Professor, Emeritus in 1999. His research activities in geotechnical engineering focused on experimental and analytical studies of soil properties and behavior, admixture stabilization of soils, soil improvement and ground reinforcement, in-situ measurement of soil properties, and mitigation of ground failure risk during earthquakes. He has authored more than 400 publications, including three editions of the book, *Fundamentals of Soil Behavior*. He is a consultant on geotechnical, geoenvironmental and earthquake engineering problems and projects of many types. Recently these have included the design of liquefaction mitigation options for several existing dams, ground improvement for a major bridge replacement project, a stability review board for large mine waste rockpiles, a seismic safety peer review panel for an urban rapid transit system, and land reclamation for development of a new marine terminal. He is a Distinguished Member of the American Society of Civil Engineers and has served on many boards and committees of several professional and technical organizations. The recipient of numerous awards, he is an elected member of the United States National Academy of Engineering and the National Academy of Sciences.

Kenneth A. Rose, Ph.D.

Dr. Kenneth Rose is a professor in the Department of Oceanography and Coastal Sciences and the Associate Dean for Research in the School of the Coast and Environment at the Louisiana State University. He received a B.S. degree from the State University of New York at Albany in Biology and Mathematics in 1975, and a M.S. (1981) and Ph.D. (1985) in Fisheries from the University of Washington. After several years in private consulting, he went to the Oak Ridge National Lab, where he was a Research Staff member in the Environmental Sciences Division for 12 years. In 1998, he joined the Department of Oceanography and Coastal Sciences at Louisiana State University. His research interests are in development and application of mathematical and simulation models to better understand and forecast the effects of natural and anthropogenic factors on aquatic populations and communities; or more generally, use of models in resource management, fisheries stock assessment and risk assessment. He has published more than 150 papers and served on more than 30 national and international advisory committees and editorial boards in the fields of fishery, ecology and environmental science and management. He also served on many expert panels related to fish and ecosystem management in the Sacramento-San Joaquin Delta and its watersheds.

Nathalie E.M. Asselman, Ph.D.

Dr. Nathalie Asselman is a specialist advisor on flood risk management at Deltares. She studied physical geography at Utrecht University (the Netherlands), where she gained much experience in the morphodynamics of coastal areas, estuaries and lowland river systems. Her Ph.D. research focused on the impact of climate and environmental change on transport and deposition of fine suspended sediment in the Rhine River. Since 2002 she has been working on integrated flood risk management studies. She has developed flood inundation models, carried out flood risk assessments and developed strategies aimed at flood prevention and mitigation of the consequences. She participated in the implementation of the EU Flood Directive. Since 2010 Dr. Asselman has been involved in the Netherlands' Deltaprogramme Large Rivers, aiming to reduce the expected increase in flood risk (due to economic developments and climate change) at acceptable costs. Together with the Ministry of Public Works, water boards, regional authorities and other stakeholders, she developed long-term flood risk management strategies that consist of measures that give space to the rivers as well as levee strengthening. She has also looked at different options for the prioritization of these measures, especially measures that give 'room to the rivers'.

John P. Bolte, Ph.D.

Dr. John Bolte is Professor and Head of the Biological & Ecological Engineering Department at Oregon State University. His areas of expertise include modeling and simulation of the dynamics of coupled human/natural systems, spatial analysis, stakeholder engagement through scenario planning processes, and development of decision tools for environmental and community planning, with more than 25 years of experience and more than 50 publications in this area. He is the lead developer of Envision, an integrated modeling platform for simulating and analyzing a broad variety of coupled natural/human systems that has been applied to analysis of water resource systems in the Pacific Northwest, forest-people-fire interactions in Central Oregon, urban/rural planning in the Puget Sound area, agricultural systems futures in Canada, assessment of ecosystem services under alternative future scenarios in Hawaii, and a number of other geographies and problem domains. More recently, he has explored the role of social networks in influencing decision-making behaviors and modeling the dynamics of these networks in adaptive systems. Many of his recent efforts have focused on incorporating climate change and associated uncertainties into alternative futures assessments related to water resources management, developing tools for modeling climate change impacts on hydrologic response and associated human and environmental demands and institutions.

Susan L. Cutter, Ph.D.

Dr. Susan Cutter is a Carolina Distinguished Professor of Geography at the University of South Carolina where she directs the Hazards and Vulnerability Research Institute. Her primary research interests are in the area of 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 has authored or edited thirteen books, more than 150 peer-reviewed articles and book chapters. In 2006, she led a Hurricane Katrina post-event field

team and ensuing five-year study to examine the long term recovery along the Mississippi Coast. In 2012, she led a Hurricane Sandy recovery team to examine the differential recovery along New Jersey's coast. She has provided expert testimony to Congress on hazards and vulnerability, was a member of the US Army Corps of Engineers IPET team evaluating the social impacts of the New Orleans and Southeast Louisiana Hurricane Protection System in response to Hurricane Katrina, and was a juror for the Rebuild by Design competition for Hurricane Sandy reconstruction. She serves on many national advisory boards and committees including those of the National Research Council (NRC), the AAAS, the National Science Foundation (NSF), the Natural Hazards Center, and the National Institute of Standards and Technology (NIST). She also served as Vice-Chair of the Integrated Research on Disaster Risk (IRDR) Science Committee supported by ISSC, ICSU, and UN-ISDR. She serves as co-executive editor of *Environment*, associate editor of *Weather, Climate, and Society*, and on the Advisory Board of the *Journal of Extreme Events*. She is also serving as the Editor-in-Chief for the *Oxford Research Encyclopedias Natural Hazard Science*. She held the Munich Re Foundation Chair (2009-2012) on Social Vulnerability through the United Nations University-Institute for Environment and Human Security, in Bonn, Germany. In 2006, she received the Decade of Behavior Research Award given by a multidisciplinary consortium of more than 50 national and international scientific organizations in the social and behavioral sciences. In 2010, she received the Lifetime Achievement Award from the Association of American Geographers, its highest honor.

Martin W. McCann, Jr., Ph.D.

Dr. Martin McCann is President of Jack R. Benjamin & Associates, Inc., a consulting professor of Civil and Environmental Engineering at Stanford University, and the director of the National Performance of Dams Program, also at Stanford University. His areas of expertise and professional experience includes probabilistic risk analysis for civil infrastructure facilities and, probabilistic hazards analysis, including seismic and hydrologic events, reliability assessment, risk-based decision analysis, systems analysis, and seismic engineering. He currently teaches a class on critical infrastructure risk management in the Civil and Environmental Engineering Department at Stanford. He has been involved in probabilistic risk studies for critical infrastructure (dams, levees, nuclear power plants, ports, chemical facilities) since the early 1980's. He has performed probabilistic flood hazard assessments for a number of Department of Energy sites and commercial nuclear power plants. Recently, he was the project technical manager for the Delta Risk Management Strategy project that conducted a risk analysis for more than 1,100 miles of levee in the Sacramento and San Joaquin Delta. He was also a member of the U.S. Army Corps of Engineers' IPET Risk and Reliability team that evaluated the risk associated with the New Orleans levee protection system following Hurricane Katrina. He is currently serving on a National Research Council/National Academy of Sciences committee looking at the flood risk methodology of the National Flood Insurance Program. In addition he is working on the ANS 2.8 committee that is updating the requirements for the assessment of external flood hazards at nuclear facilities. He developed the SHIP risk analysis software that is used to perform risk and uncertainty calculations for facilities exposed to external hazards (seismic, wind, flood). He received his B.S. in civil engineering from Villanova University in 1975, his M.S. in civil engineering in 1976 from Stanford University and his Ph.D. in 1980, also from Stanford University.

Ari M. Michelsen, Ph.D.

Dr. Ari Michelsen is Regents Fellow, Professor of Agricultural Economics and Center Director, Texas A&M AgriLife Research and Extension Center at El Paso, The Texas A&M University System. His research focus is on integrated water resources management, water resources economic valuation and policy analysis. Recent studies include hydrologic-economic evaluations for policy analysis, benefit-cost analysis, economic assessment of flood control damage, mitigating water shortages in a multiple risk environment, and water resources management and decision support systems for water policy analysis in the U.S., China and Chile. He has authored or co-authored more than 140 publications and technical reports. He serves on the Board of Directors and is President-elect of the Universities Council on Water Resources, is Past-President of the American Water Resources Association, serves on the National Water Census Advisory Committee, Rio Grande Salinity Coalition, Journal of Natural Resources Policy Research Editorial Board, and served on the National Committee on Levee Safety Review Team, was the 6th World Water Forum IWRM Thematic Priority Chair and US-China Water for Megacities 2013 Technical Program Co-Chair. Prior to joining Texas A&M University in 1999, he was faculty in the Department of Economics at Washington State University teaching in the MBA and Environmental Science and Regional Planning Programs, Associate Professor and Associate Director of the Wyoming Water Resources Center, and Senior Associate at RCG/Hagler, Bailly Inc., working with government and industry in both water and energy resources. He holds a B.S. in Conservation and Resource Management from the University of Maryland, an M.S. in Economics and a Ph.D. in Agricultural and Resource Economics from Colorado State University.