Advancing Social and Behavioral Science Research and Application within the Weather Enterprise

Committee

Ann Bostrom

Co-Chair

DR. ANN BOSTROM (co-chair) is the Weyerhaeuser Endowed Professor in Environmental Policy at the Daniel J. Evans School of Public Policy and Governance of the University of Washington, Seattle. Dr. Bostrom previously served on the faculty at the Georgia Institute of Technology from 1992-2007, where she served as associate dean for research at the Ivan Allen College of Liberal Arts and professor in the School of Public Policy. She co-directed the Decision Risk and Management Science Program at the National Science Foundation from 1999-2001. Her research focuses on risk perception, communication, and management, and on environmental policy and decision-making under uncertainty. Dr. Bostrom serves as an associate editor for the Journal of Risk Research and is on the editorial boards of Risk Analysis and of Environmental Hazards. She is an elected fellow of the American Association for the Advancement of Science and of the Washington State Academy of Sciences, and is past president and an elected fellow of the Society for Risk Analysis. She has served on numerous science advisory boards, including the National Oceanic and Atmospheric Administration (NOAA) Science Advisory Board Environmental Information Services Working Group (EISWG) and several Academies committees, most recently the Committee on the Science of Science Communication: A Research Agenda, and on the Committee to Review the EPA IRIS Process. Dr. Bostrom received a Ph.D. in public-policy analysis from Carnegie Mellon University, an MBA from Western Washington University, and a B.A. from the University of Washington.

William H. Hooke

Co-Chair

DR. WILLIAM H. HOOKE (co-chair) is Associate Executive Director of the American Meteorological Society, where he has been a Senior Policy Fellow since 2000. He directed the AMS Policy Program from 2001-2013. Educated as an atmospheric scientist, he has published widely on atmospheric wave dynamics, remote sensing, and natural hazards science and policy. He worked for the National Oceanic and Atmospheric Administration (NOAA) from 1967-2000 in a series of research and management positions, including Deputy Chief Scientist and Acting Chief Scientist. He also served as Senior Scientist to then-Commerce-Secretary William Daley. Between 1993 and 2000, he chaired the U.S. Interagency Subcommittee for Natural Disaster Reduction, operated out of the White House. He was a member of the ICSU Planning Group on Natural and Human-induced Environmental Hazards and Disasters, 2006-2008, and subsequently a member of the ICSU/Integrated Research on Disaster Risk Scientific Steering Committee, 2008-2009. He was elected a member of the American Philosophical Society in 2006, a National Associate of the NRC/NAS in 2008, and a Fellow of the AAAS in 2015. In 2014 he received the AMS Joanne Simpson Mentorship Award. Educational background: S.B. Swarthmore College 1964, physics (honors); S.M. University of Chicago, 1966, Geophysical Sciences; Ph.D. University of Chicago, 1967, Geophysical Sciences. Dr. Hooke has experience with the Academies dating back to 1987. Most recently, between 2012 and 2015, he served as a member of the Board on International Scientific Organizations.

Raymond J. Ban

Member

MR. RAYMOND J. BAN is retired Executive Vice President of Programming, Operations and Meteorology at The Weather Channel, Inc. (TWC). Currently, Ban is Managing Director of Ban and Associates, providing consultative services to the weather/climate enterprise and is also a lecturer in the Meteorology Department at Penn State University. Ban has been associated with The Weather Channel for over 34 years and is considered one of the founding members of the all-weather television network. He served as a member of the senior leadership team that grew The Weather Channel from a modest cable television network into a top, multi-platform media brand. He currently consults with TWC in Weather/Climate Enterprise Partnerships. In the community, Ban has been an active member of the American Meteorological Society (AMS) for over 45 years. He is a Fellow of the Society and holds both the Television and Radio Seal of Approval. Ban was the Commissioner on Professional Affairs for the AMS for six years, served as Councilor for three years and served on the inaugural Steering Committee of the AMS Commission on The Weather, Water and Climate Enterprise. Ban is an Alumni Fellow of Penn State University and a Centennial Fellow of its College of Earth and Mineral Sciences. He has served as recent past Chair of the National Oceanic and Atmospheric Administration (NOAA) Science Advisory Board, on the Board of Atmospheric Science and Climate of the National Academy of Sciences, and was Chair of the Academy Committee on Effective Communication of Uncertainty in Weather and Climate Forecasts and recently Chaired the Academy Committee on Developing a Research Plan to Accelerate Progress on Improving Subseasonal to Seasonal Forecasts. Ban also served on the Governing Board of the National Environmental Education Foundation (NEEF) and as President of the Alumni Board of the College of Earth and Mineral Sciences at Penn State. Currently, he is active on several Boards and Committees including Co-Chair of the Weather Coalition, a member of the Board of Directors of the Hydrologic Research Center and chair of the Advisory Board to the Meteorology Department at Penn State. Ban received his BS in Meteorology from The Pennsylvania State University in 1973.

Ellen J. Bass

Member

DR. ELLEN J. BASS is a Professor and Department Head of the Department of Information Science in the College of Computing and Informatics and a member of the Department of Health Systems and Sciences Research in the College of Nursing and Health Professions at Drexel University. She has over 30 years of human-centered systems engineering research and design experience in air transportation, health informatics, healthcare, process control, and weather related applications. Early in her career, Dr. Bass was a systems engineering practitioner, specifying and testing the human-automation interaction for real-time, complex systems. Since then she has established a research program in that area of human factors engineering. The focus of her research is to develop theories of human performance, quantitative modeling methodologies, and associate experimental designs that can be used to evaluate human-automation interaction in the context of total system performance. The outcomes of the research can be used in the systems engineering process to inform system requirements, procedures, display designs and training interventions, and to support system evaluation. Dr. Bass is a Fellow of the Human Factors and Ergonomics Society. She is a senior member of the IEEE and the former Editor in Chief for the journal IEEE Transactions on Human-machine Systems. She is a member of the editorial board for the journals Human Factors and IIE Transaction on Occupational Ergonomics and Human Factors. She is Associate Editor for the Sociotechnical System Analysis Department of the Journal IIE Transactions on Healthcare Systems Engineering. She is a member of the Board on Human-Systems Integration (BOHSI) in the Division of Behavioral and Social Sciences and Education (DBASSE) of the National Academy of Sciences. Bass holds a Ph.D. in Systems Engineering from the Georgia Institute of Technology.

David V. Budescu

Member

DR. DAVID V. BUDESCU is the inaugural Anne Anastasi Professor of Psychometrics and Quantitative Psychology at Fordham University. He held tenured positions at the University of Illinois and the University of Haifa, and visiting positions at Carnegie Mellon University, University of Gotheborg, the Kellog School at Northwestern University, the Technion (Israel Institute of Technology) and INSEAD Business School. His research is in the areas of human judgment, individual and group decision making under uncertainty and with incomplete and vague information, and statistics for the behavioral and social sciences. He is Associate Editor of Decision Analysis, and on the editorial boards of American Psychologist; Applied Psychological Measurement; Journal of Behavioral Decision Making; Journal of Mathematical Psychology; Multivariate Behavioral Research; Organizational Behavior and Human Decision Processes (1992-2002), Psychological Methods (Past, Associate Editor). He is past president of the Society for Judgment and Decision Making (SJDM) (2000-2001), fellow of the Association for Psychological Sciences (APS) and an elected member of the Society for Multivariate Experimental Psychology (SMEP). Dr. Budescu received his Ph.D. from the University of North Carolina Chapel Hill in 1980.

Julie L. Demuth

Member

DR. JULIE L. DEMUTH is a Project Scientist at the National Center for Atmospheric Research (NCAR) in Mesoscale and Microscale Meteorology Lab. She has been working for over 10 years on integrating social sciences knowledge and research with the meteorological research and practitioner communities. She conducts research on risk communication, risk perceptions, and responses by members of the public and by experts (i.e., weather forecasters, public officials, media) for hazardous weather events, such as tornadoes, hurricanes, floods and flash floods, and winter storms. Julie's current work with members of the public is focused on (a) how people's past experiences with hazardous weather affects their risk judgments and decisions, and (b) how people's risk assessments evolved with the evolving threat of Hurricane Sandy, based on Twitter data analysis. Julie's current work with National Weather Service (NWS) forecasters includes understanding how they assess and communicate high-impact weather risks. As part of this research, she is working with atmospheric scientists who use numerical weather prediction ensembles to produce probabilistic information to aid NWS forecasters in their forecast process. Julie holds a B.S. in meteorology from the University of Nebraska-Lincoln (1999), an M.S. in atmospheric science from Colorado State University (2001), and a PhD in public communication and technology from Colorado State University (2015). Julie also was a Christine Mirzayan Science and Technology Policy fellow with the Disasters Roundtable and the Board on Atmospheric Sciences and Climate (BASC) in 2002. She then served as a Program Officer for BASC from 2003-2005.

Michael D. Eilts

Member

MR. MICHAEL D. EILTS is the President and CEO of Weather Decision Technologies, Inc. based in Norman, Oklahoma. He is passionate about saving lives and helping companies manage operations through effective communication of weather risks to businesses and the public. He has deep expertise in weather analytics and how these analytics can be applied to business solutions. Mr. Eilts was a co-founder of Weather Decision Technologies and has been the President and CEO since the beginning, over 15 years ago. Mike received his B.S. and M.S. degrees in Meteorology and an MBA from the University of Oklahoma. He is also a Harvard Senior Executive Fellow and is a Fellow of the American Meteorological Society. Before founding WDT in 2000, Mike worked at the National Severe Storms Laboratory (NSSL) for 18 years, the last 7 as the Assistant Director. Mr. Eilts has written over 75 publications on subjects such as severe storms, Doppler weather radar, automated severe weather analytics, and aviation weather. He also can often be found as a participant on panels as well as providing presentations regarding weather safety and communication to the public and to large enterprises alike.

Charles F. Manski

Member

DR. CHARLES F. MANSKI has been Board of Trustees Professor in Economics at Northwestern University since 1997. He previously was a faculty member at the University of Wisconsin Madison (1983-1998), the Hebrew University of Jerusalem (1979-1983), and Carnegie Mellon University (1973-1980). He received his B.S. and Ph.D. in economics from MIT in 1970 and 1973. Manski's research spans econometrics, judgment and decision, and analysis of public policy. He is author of Public Policy in an Uncertain World (Harvard, 2013), Identification for Prediction and Decision (Harvard, 2007), Social Choice with Partial Knowledge of Treatment Response (Princeton, 2005), Partial Identification of Probability Distributions (Springer, 2003), Identification Problems in the Social Sciences (Harvard, 1995), and Analog Estimation Methods in Econometrics (Chapman and Hall, 1988), co-author of College Choice in America (Harvard, 1983), and co-editor of Evaluating Welfare and Training Programs (Harvard, 1992) and Structural Analysis of Discrete Data with Econometric Applications (MIT, 1981). He has served as Director of the Institute for Research on Poverty (1988-1991) and as Chair of the Board of Overseers of the Panel Study of Income Dynamics (1994-1998). Editorial service includes terms as editor of the Journal of Human Resources (1991-1994), co-editor of the Econometric Society Monograph Series (1983-1988), member of the Editorial Board of the Annual Review of Economics (2007-2013), and associate editor of the Annals of Applied Statistics (2006-2010), Econometrica (1980-1988), Journal of Economic Perspectives (1986-1989), Journal of the American Statistical Association (1983-1985, 2002-2004), and Transportation Science (1978-1984). Service at the National Research Council includes being Chair of the Committee on Data and Research for Policy on Illegal Drugs (1998-2001) and a member of the Report Review Committee (2010-2016), the Committee on Law and Justice (2009-2015), the Board on Mathematical Sciences and their Applications (2004-2007), the Committee on National Statistics (1996-2000), and the Commission on Behavioral and Social Sciences and Education (1992-1998). Manski is an elected Member of the National Academy of Sciences, an elected Fellow of the American Academy of Arts and Sciences, the Econometric Society, the American Statistical Association, and the American Association for the Advancement of Science, and an elected Corresponding Fellow of the British Academy.

Richard J. Nelson

Member

MR. RICHARD J. NELSON is an independent contractor under contract to the American Association of State Highway and Transportation Officials (AASHTO) currently serving as the Snow and Ice Pooled Fund Cooperative Program (SICOP) Coordinator. Previously, Mr. Nelson spent 30 years at the Nevada Department of Transportation (NDOT) as a Civil Engineer, Assistant District Engineer, District Engineer (District II), and finally as Assistant Director of Operations. As the SICOP Coordinator, he supports the AASHTO Winter Maintenance Technical Service Program (commonly known as SICOP), whose mission is to advance the science and practice of winter maintenance to improve surface transportation mobility during winter storm events across the United States. The emphasis of Mr. Nelson's NDOT career was in surface transportation operations. As District Engineer, he had operational responsibility to provide mobility during winter events in high mountainous, urban, and rural regions. Mr. Nelson instituted the first Road Weather Information System (RWIS) in Nevada, thermal mapping of state highways, value added meteorological service, an active wind warning system controlled by RWIS, and the 511 traveler information system and website in the state. He served as the RWIS and Anti-icing team leader during the FHWA's Lead State Program for implementation of the first Strategic Highway Research Program (SHRP) products. As Assistant Director of Operations, his responsibilities grew to include statewide traffic operations and Intelligent Transportation Systems (ITS). Mr. Nelson received his B.S. in Civil Engineering from the University of Colorado, Boulder in 1981 with emphasis in environmental engineering.

Yvette Richardson

Member

DR. YVETTE RICHARDSON is a professor in the Meteorology Department at Penn State University and is the Associate Dean for Undergraduate Education in the College of Earth and Mineral Sciences. Dr. Richardson's research focuses on understanding the formation and evolution of severe storms through both numerical modeling and observations. In particular, her numerical modeling studies investigate the influence of temporal and spatial variations in environmental shear and/or convective available potential energy on storm strength, rotational properties, and longevity. Her observational work has focused on understanding storm rotation, in particular tornado genesis and maintenance, using mobile radars and other instruments to collect fine-scale observations of thunderstorms and tornadoes. Dr. Richardson was a principal investigator in the International H2O Project (IHOP) in spring, 2002 with a focus on convection initiation and boundary layer processes. She served as a steering committee member and a principal investigator for the second phase of the Verification of the Origins of Rotation in Tornadoes Experiment (VORTEX2) in 2009 and 2010. Dr. Richardson currently serves as the chair of the UCAR President's Advisory Committee on University Relations, an editor of the AMS journal Monthly Weather Review, and a member of several AMS committees. She earned her Masters and Ph.D. in Meteorology from the University of Oklahoma in 1993 and 1999, respectively. Dr. Richardson has been invited to participate in several Academy workshops and has also served as a reviewer twice for Academy reports, but has yet to serve as a member of an Academy committee.

Jacqueline Snelling

Member

MS. JACQUELINE SNELLING currently serves as Senior Policy Advisor to the Director in DHS/FEMA's Individual and Community Preparedness Division (ICPD) with responsibilities for national policy and guidance, research, evaluation and assessment, and initiatives to support individual and community preparedness and resilience at all levels. Her current responsibilities include social science research to inform effective behavioral change strategies in public preparedness and the scientific validation of recommended protective actions for the public. Since joining DHS in 2005, Ms. Snelling has developed programs and partnerships to integrate government and nongovernmental resources for preparedness, strategic metrics for reporting progress on individual and community preparedness, and research methods to refine our understanding of personal preparedness using hazard oversample data. Ms. Snelling's work for DHS/FEMA builds on a 30 year public service career of senior policy and management positions at all levels of government and extensive volunteer community service. Ms. Snelling has public policy and management experience in diverse areas serving as Special Assistant to the U.S. Secretary of Education and serving several Chancellors of the New York City Board of Education. Responsibilities for the Secretary of Education included liaison to the Office of Educational Research including responsibility for ensuring research support for the Secretary's initiatives. Ms. Snelling received her undergraduate and Master's degrees from Harvard University studying administration and social policy.

John Toohey-Morales

Member

MR. JOHN TOOHEY-MORALES is chief meteorologist at WTVJ NBC-6 in Miami, Florida and the founder of ClimaData, a small commercial weather firm. During his 32-year operational meteorology career, Morales has worked in the public sector as a lead forecaster for the National Weather Service, and in the private sector as a Certified Broadcast and Certified Consulting Meteorologist. He's also been an adjunct professor of meteorology at St. Thomas University in Miami. John attained his American Meteorological Society (AMS) Certified Consulting Meteorologist (CCM #589) designation in 1997, and is one of only a handful of AMS members with both the CCM and Certified Broadcast Meteorologist (CBM #5) accreditations. Morales, an AMS Fellow, served for six years as the Society's Commissioner on Professional Affairs, and as such was an ex-officio member of the AMS Council. John has chaired or participated in another half-dozen AMS committees and boards. He was honored with the AMS Award for Outstanding Contribution to Applied Meteorology in 2007, the AMS Award for Broadcast Meteorology in 2004, and the NWA Broadcaster of the Year Award in 2003. He is also Past-President of the National Council of Industrial Meteorologists (NCIM), as well as a member of the National Weather Association (NWA). While at NOAA, Morales was part of the Department of Commerce Silver Medal winning NWS San Juan team for "distinguished, at time heroic service during…Hurricane Hugo". As a broadcast meteorologist, he's won three regional Emmy awards. His experience in all sectors of the weather enterprise led to his selection as one of the charter members of the Environmental Information Services Working Group (EISWG) of NOAA's Science Advisory Board. Previously, John served on the Academies committee studying the Modernization of the U.S. National Weather Service, and co-authored the report "Weather Services for the Nation: Becoming Second to None". John attained his degree in atmospheric sciences from Cornell University in 1984. He also completed Masters-level coursework in remote sensing and tropical meteorology during World Meteorological Organization sponsored training at the National Hurricane Center and the University of Miami in 1988.

Joseph E. Trainor

Member

DR. JOSEPH E. TRAINOR is an Associate Professor in the School of Public Policy and Administration at the University of Delaware and a Core Faculty Member of the Disaster Research Center where he conducts research, provides consultation, teaches, and mentors students. Trainor conducts multi-disciplinary, mixed methods, qualitative, and quantitative research focused on many dimensions of disasters and crises. His studies include “basic” science, applied research, and rapid reconnaissance post-disaster fieldwork studies. Recent projects have focused on disaster researcher and practitioner integration; warnings, risk perception, and protective action decision making for short fuse hazards; post hurricane housing decisions; household insurance and mitigation decision, and multi-organizational response systems. Findings from these efforts have led to a number of peer-reviewed articles and book chapters, disaster related reports and invited publications, thesis, and dissertations, many that were co-authored with students. Trainor frequently presents research findings to academic, professional, and public audiences. Most relevant to this work, Trainor has recently been engaged in a great deal of work related to human behavior and decision making around severe weather risks through research funded by the National Science Foundation. That work has focused on the end to end (weather, forecast, dissemination, perception and response) warning process. As a result, he has been actively engaged in the integration of social science and physical science and a member at a number of Weather Ready Nation related meetings. Trainor has a Ph.D. and an M.A. in Sociology from the University of Delaware. He is a core faculty member in the Disaster Science and Management (DISA) program. He teaches courses and advises students in the DISA, the Urban Affairs and Public Policy Ph.D., and the Public Policy B.A. programs. He also serves on key committees for these programs and for the School of Public Policy and Administration.