Mapping Science Committee

Committee

Harvey J. Miller

Chair

Harvey J. Miller, Chair, is the Bob and Mary Reusche Chair in Geographic Information Science, director of the Center for Urban and Regional Analysis, and professor in the Department of Geography, The Ohio State University. He also a courtesy professor in the City and Regional Planning program in the Knowlton School of Architecture, on the advisory board of the Sustainability Institute, and an affiliated faculty of the Translational Data Analytics Institute, all at Ohio State. Dr. Miller's research and teaching interests are at the intersection between geographic information science and transportation, in particular, the analysis of human mobility within cities and regions. The main questions driving his research include sustainable transportation, livable cities, and the relationships between human mobility, health and social equity. Dr. Miller's awards and honors include the Edward L. Ullman Award for Outstanding Contributions to Transportation Geography from the Association of American Geographers (2009) and the Research Award for scholarly contributions to Geographic Information Science from the University Consortium for Geographic Information Science (2015). Dr. Miller received his B.A. and M.A. in geography from Kent State University, and his Ph.D. in geography from Ohio State University.

A. Stewart Fotheringham

Member

A. Stewart Fotheringham, NAS, is a professor of computational spatial science in the School of Geographical Sciences and Urban Planning at Arizona State University. He is also a senior scientist in the Julie Ann Wrigley Global Institute of Sustainability. Dr. Fotheringham's research interests are in the analysis of spatial data sets using statistical, mathematical, and computational methods. He is well-known in the fields of spatial interaction modelling and local statistical analysis; the latter as one of the developers of geographically weighted regression. He also has substantive interests in health data, crime patterns, retailing, and migration. Dr. Fotheringham established both the Centre for GeoInformatics at the University of St Andrews in Scotland and the National Centre for Geocomputation in Ireland. He serves on the Executive Committee of the Transportation Research Board. He is a member of the National Academy of Sciences and the Academia Europaea, and a Fellow of the UK's Academy of Social Sciences. He received a B.S. from the University of Aberdeen, and an M.S. and Ph.D. from McMaster University, all in geography.

Oceana P. Francis

Member

Oceana P. Francis is an associate professor in the Department of Civil and Environmental Engineering and Sea Grant Program at the University of Hawai'i at Manoa. Her research focuses on building the resilience of urban communities and infrastructure systems from hydrodynamic hazards, circulation and transport in nearshore regions and oceans, wave hydrodynamics, sea-level rise, and the effects of sea ice on oceanic processes. She is a licensed civil engineer in both Alaska and Hawaii. She received the Young Engineer of the Year Award (2010) from the Fairbanks Chapter of the Alaska Society of Professional Engineers and the National Center for Science and Civic Engagement's Inaugural Award (2015) for Exemplary Multi-Institutional and Regional Collaborations in the Service of Citizen Science. Some of her professional service currently includes serving as editor for American Meteorological Society's Journal of Atmospheric and Oceanic Technology, serving as American Society of Civil Engineers (ASCE) student chapter faculty advisor, and as founder and president of the Society of Native Hawaiian Engineers (SNHE). She has made a significant contribution to science and engineering for the State of Hawaii, which includes the Ocean Hazards Database (OHD) and the database for the Coastal vulnerability index GIS modeling of the Hawaiian Islands. Dr. Francis received a B.S. in physics and astronomy from the University of Nebraska, a B.S. and M.S. in civil engineering from the University of Alaska, and a Ph.D. in atmospheric sciences from the University of Alaska.

Hendrik F. Hamann

Member

Hendrik F. Hamann is the IBM Chief Scientist for Geoinformatics at the IBM T.J. Watson Research Center. Dr. Hamann has been leading the Physical Analytics program in IBM, which explores the intersection of big Internet of Things data, physical modeling, data analytics, machine-learning, and artificial intelligence. Since 2015 his focus has been as a Distinguished Researcher on developing advanced geospatial capabilities and technologies, for example, in precision agriculture and adjacent spaces and in applying advanced artificial intelligence and machine learning to a geospatial data at scale. Dr. Hamann is an IBM Master Inventor and holds more than 140 patents. His NASEM committee service is related to technology strategies and development. Dr. Hamann was awarded the 2016 AIP Prize for Industrial Applications of Physics. He is a fellow of the American Physical Society (APS) and a member of the New York Academy of Sciences. He earned his Ph.D. (summa cum laude) from the University of Göttingen, Germany.

Kristen Kurland

Member

Kristen Kurland is a Teaching Professor of Architecture, Information Systems, and Public Policy at Carnegie Mellon University's Heinz College of Information Systems and Public Policy and School of Architecture. She is also the president of a local consulting firm that has implemented computer technology programs in numerous organizations. She is a Past President of CMU's Andrew Carnegie Society and recently served as a Trustee of Carnegie Mellon University. Ms. Kurland's research focuses on interdisciplinary collaborations in health, the built environment, geospatial analysis, and 3D data visualization. Projects focus on addressing equity, health, urban design, economic development, sustainability, big data, and smart cities issues. She actively collaborates with healthcare, non-profit, and industry organizations in Pittsburgh and worldwide. Ms. Kurland is the co-author of a series of best-selling GIS workbooks that are used by universities, colleges, and self-learners. Her accomplishments were the focus of chapter in a recent book by Esri Press highlighting twenty-two global women of influence in GIS. She is the recipient of numerous awards, including the 2020 Carlow University Women of Spirit award; the 2012 Esri Health Communications Award; and the 2004 Esri Special Achievement in GIS Award. Ms. Kurland received a B.A. in architectural studies from the University of Pittsburgh.

Marguerite Madden

Member

Marguerite Madden is a professor in the Department of Geography and director of the Center for Geospatial Research (CGR) at the University of Georgia. Her research combines remote sensing and geospatial analyses with landscape ecology, particularly detailed vegetation mapping and human-animal-environment interactions. Recent projects include the use of uncrewed aerial systems, GPS tracking, and photogrammetry (Structure from Motion) analyses to assess animal movement behavior related to subsistence farming and human-wildlife conflict, and the incorporation of virtual and augmented reality technologies in teaching and research. Dr. Madden received the American Society of Photogrammetry and Remote Sensing (ASPRS) Lifetime Achievement Award in 2020 and NASA's Silver Achievement Medal in 2018. She is a fellow ASPRS and is a past president of that society. She is also a fellow of the International Society for Photogrammetry and Remote Sensing, and served as a technical president for its commission on digital mapping and geodatabases. She received a B.A. and M.A. in biology from the State University of New York, and a Ph.D. in ecology from the University of Georgia.

Keith J. Masback

Member

Keith J. Masback is the Owner of Plum Run, LLC, which provides advisory and consulting services to startups, small companies, and government organizations working in geospatial intelligence and related fields. Previously, he spent more than 10 years as president and chief executive officer of the U.S. Geospatial Intelligence Foundation (USGIF), establishing a professional certification program and substantially increasing the number of its other accredited academic programs. Before joining USGIF, he more than 20 years as an officer in the U.S. Army and as a government civilian employee, culminating in the Senior Executive Service at the National Geospatial-Intelligence Agency. Many of his positions involved planning, acquiring, and tasking airborne and spaceborne remote sensing assets for military and intelligence purposes. Mr. Masback has served on numerous boards and advisory committees, and is the immediate past chair of the National Geospatial Advisory Committee and a current member of the Board of Advisors of the Global Special Operations Forces Foundation. He is a Councilor and Fellow of the American Geographical Society, and was recognized as the Geospatial Ambassador of the Year at the 2019 Geospatial World Forum. Mr. Masback holds a B.A. in political science from Gettysburg College and completed the Post-Graduate Intelligence Program at the National Intelligence University.

Kathleen Stewart

Member

Kathleen Stewart is director of the Center for Geospatial Information Science and associate professor in the Department of Geographical Sciences at the University of Maryland, and an adjunct associate professor in the Department of Geographical and Sustainability Sciences, University of Iowa. Dr. Stewart is an expert in geographic information science with a particular interest in space-time GIS. She is interested in mobility, dynamics, and big geospatial data, and is investigating movement and mobility for a number of applications, such as public health, transportation, and natural hazards. Dr. Stewart’s awards and honors include the Dean’s Scholar Award from the University of Iowa (2010-2012) and the Dean’s Award of Excellence from the University of Maine (2006). Dr. Stewart is a member of the Board of Directors for the University Consortium of Geographic Information Science, and the steering committees for the International Conference on GIScience and the International Conference on Spatial Information Theory, as well as numerous other international expert panels. She received a B.A. (Hons.) in geography from McMaster University, Canada, an M.S. in geography from the University of British Columbia, Canada, and a Ph.D. in spatial information science and engineering from the University of Maine.

Eric Tate

Member

Eric Tate is an associate professor in the Geographical and Sustainability Sciences Department at the University of Iowa. His research interests are in the connections between natural hazards and society, primarily through modeling of social vulnerability and risk. His particular interest is in vulnerability to floods, including (a) assessing social equity in disaster mitigation and recovery spending, (b) validating indicators of vulnerability and risk, and (c) analyzing uncertainty and sensitivity of geospatial models. Dr. Tate chaired the Hazards, Risks, and Disasters Specialty Group (2017-2019) of the Association of American Geographers. He currently serves on the Climate Action Commission for Iowa City, the advisory board for the Anthropocene Alliance, and the NASEM Resilient America Roundtable. He received a B.S. in environmental engineering from Rice University, an M.S. in environmental & water resources engineering from the University of Texas, and a Ph.D. in geography from the University of South Carolina.