

Geographical and Geospatial Sciences Committee

Committee

Kristen Kurland

Co-Chair

Kristen Kurland is a University 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.

Hendrik F. Hamann

Member

Hendrik F. Hamann is the IBM Chief Scientist and Global Strategy leader for Climate and Sustainability 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. with summa cum laude from the University of Göttingen, Germany

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.

Elisabeth D. Root

Member

Elisabeth D. Root is a Senior Research Manager at the Institute for Disease Modeling at the Bill & Melinda Gates Foundation, where she leads the Women's, Reproductive, Infant and Child Health team. Prior to joining the Foundation, Dr. Root was a professor in the Geography Department and the Division of Epidemiology at The Ohio State University and affiliated with the Translational Data Analytics Program and the Institute for Population Research. Her current research focuses on using complex statistical modeling to examine: 1) social determinants of health and the ways in which population and environmental factors jointly impact women's and children's health and well-being, 2) community-level structural and policy factors that impact maternal and child health and family planning, and 3) complex evaluation of overlapping health interventions using dynamical models. She has extensive field-based experience in Bangladesh, Honduras, Philippines, and Indonesia, where she led major survey-based global health projects. She received her B.A. in anthropology and public policy analysis from Pomona College and her M.A. and Ph.D. in geography from the University of Maryland and the University of North Carolina-Chapel Hill, respectively.

Charles Burgis

Staff Officer