NATIONAL ACADEMIES *Sciences Engineering Medicine*

BOARD ON EARTH SCIENCES AND RESOURCES

2024 SPEAKER BIOGRAPHIES

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Dr. Susan Anenberg is a Professor and Chair of the Environmental and Occupational Health Department at the George Washington University Milken Institute School of Public Health. She is also the Director of the GW Climate and Health Institute. Dr. Anenberg's research focuses on the health implications of air pollution and climate change, from local to global scales. She currently serves on the U.S. Environmental Protection Agency's Science Advisory Board, the World Health Organization's Global Air Pollution and Health Technical Advisory Group, and the National Academy of Science's Committee to Advise the U.S. Global Change Research Program. She also serves as President of the GeoHealth section of the American Geophysical Union. Previously, Dr. Anenberg was a Co-Founder and Partner at Environmental Health Analytics, LLC, the Deputy Managing Director for Recommendations at the U.S. Chemical Safety Board, an environmental scientist at the U.S. Environmental Protection Agency, and a senior advisor for clean cookstove initiatives at the U.S. State Department.

Dr. Rita Colwell is Distinguished University Professor at the University of Maryland at College Park and Johns Hopkins Bloomberg School of Public Health and Founder of CosmosID, Inc. Her interests are focused on global infectious diseases, water, and health. She has authored or co-authored 20 books and more than 800 scientific publications. Dr. Colwell served as 11th Director of the National Science Foundation and Co-chair of the Committee on Science, National Science and Technology Council. Dr. Colwell served as Chairman of the Board of Governors of the American Academy of Microbiology, President of the American Association for the Advancement of Science, Washington Academy of Sciences, and American Society for Microbiology, Sigma Xi National Science Honorary Society, International Union of Microbiological Societies, and American Institute of Biological Sciences. Dr. Colwell is a member of the National Academy of Sciences, Royal Swedish Academy of Sciences, Stockholm, Royal Society of Canada, and Royal Irish Academy, American Academy of Arts and Sciences, and American Philosophical Society. Dr. Colwell has been awarded 64 honorary degrees from institutions of higher education and is the recipient of the Order of the Rising Sun, Gold and Silver Star, bestowed by the Emperor of Japan, 2006 National Medal of Science awarded by the President of the United States, the 2010 Stockholm Water Prize awarded by the King of Sweden, 2018 Lee Kuan Yew Water Prize of Singapore, and 2024 Lifetime Achievement Award from the American Society for Microbiology.

Dr. Este Geraghty is the Chief Medical Officer at Esri where she leads strategy and messaging for the Health and Human Services sector. In this role, she's helped organizations worldwide use location intelligence to combat Zika virus, grapple with the opioid crisis, combat homelessness, enhance health preparedness & response, inform strategic planning, optimize healthcare access, and traverse the COVID-19 pandemic while tackling inequity. Formerly the Deputy Director of the Center for Health Statistics and Informatics at the California Department of Public Health, Dr. Geraghty focused on open data and interoperability. As an Associate Professor of Clinical Internal Medicine at the UC Davis, she conducted research on geographic approaches to advancing community development. In addition to degrees in Medicine, Medical Informatics, and Public Health, she is a board-certified public health professional and a Geographic Information Systems Professional. She has been the recipient of two Larry L. Sautter Golden Awards for innovation. In 2020, Dr. Geraghty was featured in the Emmy Award winning documentary, "Geospatial Revolution: Mapping the Pandemic." In 2021, she was named by HIMSS as one of the most influential women in Health IT. And in 2022, she was listed as one of the Top 50 Women Leaders in Medicine by Women We Admire.

Dr. Claire Horwell is a Professor of Geohealth at Durham University, UK, where she researches the health hazards and impacts of air pollution, particularly from volcanic eruptions. As an interdisciplinary scientist, she works across the Earth, health, and social sciences to improve community protection from exposures to harmful particles. Horwell is founder and director of the International Volcanic Health Hazard Network, an organization which provides public information and advises governments on how to prepare for the health impacts of eruptions. She has advised governmental agencies in many countries including the UK and United States and works closely with the World Health Organization and UNICEF, and provincial, national and international non-governmental organizations. She was a founding leader of the American Geophysical Union's GeoHealth Section and recently won their GeoHealth Award. In 2020, she was awarded the European Geosciences Union's Plinius Medal for interdisciplinary research on natural hazards.

Dr. Lucy Hutyra is an environmental ecologist investigating the impacts of urbanization on environmental carbon cycle dynamics. She draws on a range of tools—including field observations, remote sensing, spatial analysis, and mathematical modeling—to measure where, when, and how much carbon moves between different reservoirs, like plants, soil, water, and air, in forests and urban areas. Hutyra received a BS (1998) from the University of Washington and an AM (2006) and a PhD (2007) from Harvard University. She was subsequently a research scientist at the University of Washington (2007–2009). She joined the faculty of Boston University in 2009 and is currently a professor in the Department of Earth and Environment. During her 2023–2024 academic sabbatical, she is a visiting faculty researcher at Google. Hutyra is also an associate of the Arnold Arboretum (since 2015) and the Department of Earth and Planetary Sciences at Harvard University (since 2016). Hutyra has published in a variety of scientific journals, including *Proceedings of the National Academy of Sciences*, *Nature*, *Journal of Geophysical Research*, *Global Change Biology*, and *Science of the Total Environment*, among others.

Dr. Gabriel Filippelli is a Chancellor's Professor of Earth and Environmental Sciences and Executive Director of the Indiana University Environmental Resilience Institute. Filippelli received his B.S. in Geology from the University of California, Davis, and his PhD in Earth Sciences from the University of California, Santa Cruz. Filippelli is a biogeochemist with broad training in climate change, exposure science, and environmental health. Author of over 200 publications, in 2022 Filippelli also published the book *Climate Change and Life* with Elsevier and edited *Climate Resilience in Indiana and Beyond* with Indiana University Press. He was the Editor-in-Chief for the journal GeoHealth, a Fellow of the International Association of Geochemistry, a 2022 Fulbright Distinguished Chair, and former National Academy of Sciences Jefferson Science Fellow, where he served as a Senior Science Advisor for the U.S. Department of State. Filippelli has current funding from the NSF, EPA, NIH, and the USGS.

Dr. Jay Lemery, MD, Is a Professor of Emergency Medicine at The University of Colorado School of Medicine, Chief of the Section of Wilderness and Environmental Medicine, and Faculty in the Department of Environmental and Occupational Health at the Colorado School of Public Health. He is a past President of The Wilderness Medical Society. Dr. Lemery has expertise in austere and remote medical care, as well as the effects of climate change on human health. At the University of Colorado, Lemery co-founded the Program on Climate & Health, based at the School of Medicine. He inaugurated the nation's first graduate medical education climate & health science policy fellowship for physicians in 2017, in partnership with numerous federal agencies and nonprofits. In 2022, the program will launch the 'Diploma in Climate Medicine' for healthcare providers, the first of its kind at a School of Medicine, offering a distinction for expertise and leadership in this novel field. He is currently the Medical Director for the National Science Foundation's Polar Research program and a physician consultant to the Exploration Medical Capability Element of NASA's Human Research Program. From 2014-2016, he was the EMS Medical Director for the United States Antarctic Program. He also holds academic appointments at the Harvard School of Public Health (FXB Center), where he is a contributing editor for its Journal, 'Health and Human Rights,' and was Guest Editor for the special edition on 'Climate Justice.' Dr. Lemery is a member of the Council on Foreign Relations and in 2021, was elected to the National Academy of Medicine.

Dr. Melissa Lombard is a Research Hydrologist with the U.S. Geological Survey in the New England Water Science Center. Her research interests include connecting environmental geochemistry with human and ecosystem health and using machine learning models as a tool to understand, estimate, and predict contaminant occurrence. She enjoys collaborating with epidemiologists and public health scientists to link the occurrence of trace elements in drinking water to human health outcomes. Her career has included positions in academic research and teaching, environmental consulting, and environmental regulation. She holds a B.A. from William Smith College, M.S. from Rensselaer Polytechnic Institute, and Ph.D. from the University of New Hampshire.

Dr. Kyle P Messier is a Stadtman Tenure-Track Investigator at the National Institute of Environmental Health Sciences (NIEHS) in the Division of Translational Toxicology (DTT). He leads the Spatiotemporal Exposures and Toxicology group, within the Predictive Toxicology Branch. The Spatiotemporal Exposures and Toxicology group has a broad interest in geospatial exposomics and risk mapping. Key areas of research include (1) Spatiotemporal exposure mapping of environmental and climate variables (e.g. chemical mixtures, social, behavioral, environmental, and climate factors); (2) Source-to-outcome modeling, or GeoTox, which is the integration of geospatial exposures, toxicokinetic modeling, and nonanimal toxicological data such as high-through in vitro screen assays to develop mechanistically informed risk maps; and (3) Developing and promoting software and computational best-practices such as open-source code for the environmental health sciences. Dr. Messier received a B.S. in Environmental Studies from the University of North Carolina at Asheville and a M.S. and Ph.D. in Environmental Science and Engineering from the University of North Carolina at Chapel Hill.

Dr. Jasquelin Peña is a professor in the Department of Civil and Environmental Engineering at the University of California, Davis. She is also a Faculty Scientist in the Energy Geosciences Division at the Lawrence Berkeley National Laboratory. Her research is in the area of molecular and environmental biogeochemistry. She aims to advance mechanistic knowledge of contaminant, carbon and nutrient transformations in natural and engineered systems in order to address critical environmental problems related to water security and environmental quality in the face of climate change. Her research brings together perspectives from soil chemistry, environmental mineralogy, microbiology and water quality engineering. Prior to joining UC Davis, Jasquelin was a faculty member in the Institute of Earth Surface Dynamics at the University of Lausanne in Switzerland (2011-2020). She received her B.S. in chemical engineering from Yale University in 2001, and her M.S. and Ph.D. degrees in environmental engineering from UC Berkeley in 2004 and 2009. From 2001 to 2003, she worked as a research associate at the Lawrence Berkeley National Laboratory.

Dr. Laura Ruhl is the Hydrogeology Studies Section Chief at the United States Geological Survey's Lower Mississippi-Gulf 5 State Water Science Center. Prior to USGS, Ruhl taught a variety of classes including hydrogeology, geochemistry, environmental geology, geology and ecology of the Bahamas, physical geology, medical geology, and field geology to undergraduate and graduate students for ten years at the University of Arkansas at Little Rock in the Earth Sciences Department. Ruhl's research as a professor focused on water chemistry associated with energy resources and mining, development and application of environmental isotopic tracers, urban geochemistry and hydrology, health issues related to water chemistry, and medical geology issues related to human stone growth. She received her BS and MS degrees in Geological Sciences from the University of Florida in 2006 and 2008, respectively. In 2012, Ruhl completed her PhD at Duke University in Earth and Ocean Sciences.

Dr. Mónica Ramírez-Andreotta is an Associate Professor and Distinguished Scholar of Environmental Science (ENVS) with joint appointments in Public Health and Global Change at University of Arizona (UArizona). She is pioneering new methods in exposure science, identifying community-level resiliencies to combat environmental health vulnerabilities and developing novel communication strategies. She develops and implements programs with, and for EJ/climate justice communities in the areas of pollution prevention, climate change, and environmental sustainability, resiliency, and monitoring. She is the Director of the University of Arizona NIEHS Superfund Research Program's Research Translation Core and oversees three co-created community science (CS) programs, *Gardenroots*, *Project Harvest*, and *Rethinking Wildfires, Floods and Health*, partnering with EJ communities to answer their research questions and following a community-first reporting model. Since 2020, she is an Associate Editor for Environmental Justice and sat on the Journal of Exposure Science and Environmental Epidemiology Editorial Review Board. Dr. Mónica Ramírez-Andreotta served on the Association for the Advancing Participatory Sciences Board of Directors (2021-24) and now serves on the USEPA Office of Research and Development's Board of Scientific Counselors (2022-25).

Dr. Elisabeth Root is the Deputy Director for Gender, Vulnerability, and Health Equity at the Bill & Melinda Gates Foundation. Within the Foundation's Institute for Disease Modeling, she leads a team that investigates the dynamic, cumulative, and interrelated factors that give rise to health inequities, primarily those affecting women and children. The team conducts research on the social, economic, and structural vulnerabilities that influence health and health behaviors including key aspects of health systems that lead to more equitable provision of care. Before joining IDM in 2021, Elisabeth was a professor of geography and epidemiology at The Ohio State University and served on the leadership team at the Institute for Population Research. Her research focused on the long-term and intergenerational effects of health and development programs on women and children in low- and middle-income countries, spatiotemporal patterns of mortality and disease, and modeling the contributions of social determinants to health and well-being. Elisabeth holds a Ph.D. in health and medical geography from the University of North Carolina at Chapel Hill.

Mr. Billy Williams is the Executive Vice President for Ethics, Diversity and Inclusion at American Geophysical Union. He was the principal investigator and lead organizer for the National Science Foundation (NSF)-funded workshop, Sexual Harassment in the Sciences: A Call to Respond and serves as a co-principal investigator on the 2017 NSF grant, ADVANCE Partnership: From the Classroom to the Field: Improving the Workplace in the Geosciences. He currently serves as the principal investigator on Catalyzing Cultural Change in the Sciences with New Resources and Tracking Tools, a project funded by the Alfred P. Sloan Foundation. Williams was a member of the 2017-2018 National Academy of Sciences' Committee on Impact of Sexual Harassment in Academic Science, Engineering and Medicine, as well as the 2019-2020 Committee on Increasing the Number of Women in STEMM. Prior to joining AGU in 2012, he served as a senior program officer at the National Academy of Sciences and as a global research and development director at Dow Chemical Company. Williams serves on the Advisory Board for the STEMM Equity Achievement (SEA) Change Initiative at the American Association for the Advancement of Science. He also co-led the development of the Societies Consortium on Addressing Harassment in STEMM, which is an initiative to advance professional ethics, conduct, climate and culture.