

State-of-the-Science and the Future of Cumulative Impact Assessment

Committee

Weihsueh A. Chiu

Chair

Weihsueh A. Chiu is a professor in the Department of Veterinary Physiology and Pharmacology at Texas A&M University. He also has a Research Fellow appointment at the Institute for Science, Technology, and Public Policy at the Bush School of Government and Public Service. Before joining the university in 2015, he worked at the U.S. Environmental Protection Agency (EPA) for more than 14 years, most recently as branch chief in the Office of Research and Development. His research in human health risk assessment includes toxicokinetics, physiologically-based pharmacokinetic modeling, dose-response assessment, characterizing uncertainty/variability, environmental justice, climate and disaster risks, systematic review, and meta-analysis, with particular interest in Bayesian and probabilistic methods. Chiu has participated or chaired expert review panels for multiple government agencies, including EPA's Science Advisory Board and Chemical Assessment Advisory Committee, international committees, and work groups. Chiu received an A.B. in physics from Harvard University, an M.A. and Ph.D. in physics from Princeton University, and a Certificate in Science, Technology, and Environmental Policy from the Princeton School of Public and International Affairs. He has served on seven National Academies committees, including chairing the Committee on the Variability and Relevance of Current Laboratory Mammalian Toxicity Tests and Expectations for New Approach Methods (NAMs) for use in Human Health Risk Assessment.

Julia G. Brody

Member

Julia Green Brody is Senior Scientist and Executive Director Emeritus at Silent Spring Institute and a Research Associate in Epidemiology at the Brown University School of Public Health. She is an expert on environmental chemicals and breast cancer and a leader in community-engaged research and public engagement in science. She joined Silent Spring Institute in 1996, shortly after its founding, and led the organization for 28 years, transforming it into a leading scientific research center on environmental chemicals and women's health. Brody's current research focuses on reporting back to communities and to individuals who participate in environmental health studies to inform them about their own chemical exposures. This interest grew out of Silent Spring Institute's Household Exposure Study, the first comprehensive assessment of endocrine disrupting compounds in homes. Her research has been supported by the National Institutes of Health and National Science Foundation. Her experience includes co-leading an NIH T32 training program at the intersection of social science and environmental health science. She has served on the National Advisory Environmental Health Sciences Council and as an advisor to the California Breast Cancer Research Program. The U.S. Environmental Protection Agency recognized her research with an Environmental Merit Award in 2000. Brody received a Ph.D. in psychology at the University of Texas at Austin.

Zhen Cong

Member

Zhen Cong is Professor and Chair of the Department of Health Sciences in the Crean College of Health and Behavioral Sciences at Chapman University. She used to serve as Professor and Director of the Climate and Health Initiative in the Department of Environmental Health Sciences of the School of Public Health at the University of Alabama at Birmingham. She was previously on the faculty of Texas Tech University and the University of Texas at Arlington; for the latter, she also served as Associate Dean for Research and Faculty Affairs as well as Ph.D. program director. Her research focuses on using convergent integrated frameworks and approaches to examine older adults' vulnerability and resilience to disasters and community resilience as well as social, health, and environmental disparities related to disasters. Cong has conducted a series of research projects related to hurricanes and tornadoes to address critical issues such as exposure to risks, risk perception and communication, access and response to warnings, mitigation behaviors, and the recovery process associated with disasters. She is an inaugural cohort member of the U.S. National Institutes of Health Climate and Health Scholars and also a Fellow of the Gerontological Society of America. Cong received a Ph.D. in gerontology from the School of Gerontology at the University of Southern California.

Deborah A. Cory-Slechta

Member

Deborah Cory-Slechta is a Professor of Environmental Medicine at the University of Rochester Medical School and previously served as Dean for Research, Chair of Environmental Medicine and Principal Investigator of the Department's National Institute of Environmental Health Sciences Core Center Grant. Her research, including both animal models and human studies, is focused on the consequences of exposures to environmental chemicals on the brain and their relationship to neurodegenerative and neurodevelopmental disorders. These studies have focused on the impact of air pollution, including ambient air as well as inhaled metals in air pollution. Cory-Slechta has received sustained funding from the NIH over the course of her career for this research. She has served on advisory panels for the U.S. National Institutes of Health, Food and Drug Administration, Environmental Protection Agency, and the Agency for Toxic Substances and Disease Registry. In 2017, she received the Distinguished Neurotoxicologist Award from the Neurotoxicology Specialty Section of the Society of Toxicology, and in 2021 was the recipient of the Distinguished Toxicology Scholar Award from the Society of Toxicology. In 2022 she received the Susan B. Anthony Lifetime Achievement Award from the University of Rochester. She has served on several National Academies committees on military and veterans' health, including as chair of the Committee on Gulf War and Health, Volume 10.

Andrew L. Dannenberg

Member

Andrew L. Dannenberg is an Affiliate Professor in the Department of Environmental and Occupational Health Sciences and in the Department of Urban Design and Planning at the University of Washington. Previously he served as Team Lead of the Healthy Community Design Initiative in the National Center for Environmental Health and as director of the Division of Applied Public Health Training at the Centers for Disease Control and Prevention, as Preventive Medicine Residency director and injury prevention epidemiologist at Johns Hopkins School of Public Health, and as a cardiovascular epidemiologist at the National Institutes of Health. His research and teaching focus on the health aspects of community design, including land use, transportation, equity, climate change, and other issues related to the built environment. He has a particular interest in the use of health impact assessments as a tool to inform community planners about the health consequences of their decisions. Dannenberg received an M.D. from Stanford University, a Master of Public Health from Johns Hopkins Bloomberg School of Public Health, and completed a family practice residency at the Medical University of South Carolina.

Mia V. Gallo

Member

Mia Gallo, a research scientist, is the Associate Director for Operations and Research and co-investigator at the Center for the Elimination of Health Disparities (CEMHD) and a senior member of the Institute for Health and the Environment at the State University of New York's University at Albany. She also holds a position as a Research Assistant Professor in the Department of Anthropology. She has a diverse background in the fields of biological and medical anthropology, epidemiology, toxicology, and emergency toxicology and her research incorporates concepts of physical and biomedical anthropology to study the relationship between environmental factors and human health. With expertise in environmental toxicology and a focus on how pollution affects human populations, Dr. Gallo has been a co-investigator on three U.S. National Institutes of Health funded projects conducted in collaboration with the Akwesasne Mohawk Nation using the principals of Community-Based Participatory Research (CBPR) allowing all stakeholders, including the Tribal Council, the health service providers, and community members, to offer their expertise and partake in the decision-making process. Her research began with a focus on the effects of persistent organic pollutants (POPs), including polychlorinated biphenyls (PCBs), and heavy metals on children's growth and development, endocrine disruption, and thyroid function, and has expanded to include women's reproductive function and the role of persistent organic pollutants in the development of cardiovascular disease and autoimmune diseases. Early in her career, Dr. Gallo was the recipient of the National Institute of Environmental Health Science's Young Investigator Award, the Reginald Whitehouse Award, and the David Axelrod Award.

Rima Habre

Member

Rima Habre is an Associate Professor of Environmental Health and Spatial Sciences at the University of Southern California (USC). Her expertise lies in environmental health, air pollution, and exposure sciences. Her research aims to understand the effects of complex air pollution mixtures in the indoor and outdoor environment on the health of vulnerable populations across the life course. Habre's expertise spans measurement, spatiotemporal and GIS-based modeling, and mobile health approaches to assessing personal exposures and health risks. She leads the Exposure Sciences Research Program in USC's Southern California Environmental Health Sciences Center. Habre received an Sc.D. in environmental health from the Harvard T.H. Chan School of Public Health.

Jerreed D. Ivanich

Member

Jerreed Dean Ivanich is an Assistant Professor at the Colorado School of Public Health, Centers for American Indian and Alaska Native Health, and an Adjunct Assistant Professor at the Johns Hopkins Bloomberg School of Public Health, Center for Indigenous Health. He is also the Director of the University of Colorado's American Indian and Alaska Native Health certificate program. As a member of Alaska's Metlakatla Indian Community (Tsimshian), he is dedicated to health research for North American Indigenous (Alaska Native, American Indian, First Nations, and Native Hawaiian) populations. Ivanich's work meets at the intersections of prevention science and social network analysis to improve the health and well-being of American Indian and Alaska Native peoples. He is an Aspen Ascend Fellow (2023 cohort) and a National Academy of Medicine's Emerging Leaders in Health and Medicine Scholar. Ivanich received a B.S. in Criminal Justice from Weber State University, a M.S. in Criminology and Criminal Justice from Georgia State University, and a Ph.D. in Sociology from the University of Nebraska.

Jonathan I. Levy

Member

Jonathan Levy is Professor and Chair of the Department of Environmental Health at Boston University School of Public Health. His research centers on urban environmental exposure and health risk modeling, with an emphasis on spatiotemporal exposure patterns and related environmental justice issues. He has led multiple studies evaluating the cumulative health risks of chemical and non-chemical exposures, including novel approaches for exposure modeling and multi-stressor epidemiology. He has emphasized community-engaged research through his career, through individual research projects in partnership with community organizations and co-leadership of a Center of Excellence on Environmental Health Disparities Research. He is a recipient of the Walter A. Rosenblith New Investigator Award from the Health Effects Institute and the Chauncy Starr Distinguished Young Risk Analyst Award from the Society for Risk Analysis. Levy received a B.A. in applied mathematics from Harvard College and an Sc.D. in environmental science and risk management from Harvard T.H. Chan School of Public Health. He has been a member of several National Academies committees, including the Committee on the Effects of Changes in New Source Review Programs for Stationary Sources of Air Pollution, the Committee on Improving Risk Analysis Methods Used by the US EPA ("The Silver Book"), the Committee to Develop Framework and Guidance for Health Impact Assessment, and the Committee on Science for EPA's Future.

Emmanuel Cris Liban

Member

Cris B. Liban serves as Chief Sustainability Officer at the Los Angeles County Metropolitan Transportation Authority (LA Metro). He has worked at LA Metro since 2003 and has grown his agency's environmental and sustainability practice into the most progressive and forward-looking in the country, implementing over 150 sustainability initiatives to date. Liban was the Transportation Chapter Lead of the recently completed Fifth National Climate Assessment. He has previously held political appointments in the U.S. Environmental Protection Agency's National Advisory Council for Environmental Policy and Technology and the California Climate Safe Infrastructure Working Group. In 2016 he received the Philippines' highest civilian honor for Filipinos living overseas, the Pamana ng Pilipino Award. He was also awarded the Engineering-News Record's (ENR) 2020 Award of Excellence; and in 2021 was elected to the National Academy of Construction, and in 2022, he was honored as a Distinguished Member of the American Society of Civil Engineers. Cris received degrees in geology, civil engineering, and environmental science and engineering. He previously served on the National Academies' Committee on Repurposing Plastics Waste in Infrastructure.

Kristen Malecki

Member

Kristen Malecki is a Professor and Division Director for Environmental and Occupational Health Sciences at the University of Illinois Chicago (UIC) School of Public Health. Previously, she was a member of the Risk Sciences and Public Policy Institute at Johns Hopkins University, and her research involved developing new scientific methods for indicator development to advance environmental health. As faculty in the Department of Population Health Sciences at the University of Wisconsin Madison, she was a member of the Molecular Environmental Toxicology Center and the Center for Demography Health and Aging and Center for Demography and Ecology. Her current translational environmental health research uses a molecular biology approach to examine combined chemical (air pollution, water pollution), physical, and social stressors, and their influence on adult chronic disease, aging, and health disparities. She applies emerging multi-omic tools including epigenetics, transcriptomics, and the microbiome to identify interim biomarkers of exposure and response to improve understanding of the biological mechanisms linking environmental stressors across the life-course to persistent health disparities. Malecki's work is grounded in communities and uses community-engaged approaches to population and environmental health sciences research. She currently supports environmental justice TCTAC funded by Blacks in Green in Chicago, IL and is director of the Translational Research Core within the NIEHS funded Chicago Center for Health and the Environment. Before becoming an academic, she served as a Council for State and Territorial Epidemiology fellow and the lead epidemiologist for the state Environmental Public Health Tracking Program along with Climate Change and Health Programs within the Bureau of Environmental and Occupational Health at the Wisconsin Department of Health Services. Malecki received a Ph.D. in environmental epidemiology and health Policy and a Masters of Public Health from Johns Hopkins University Bloomberg School of Public Health. She previously served on the National Academies Committee on the Use of Emerging Science for Environmental Health Decisions and chaired the workshop planning committee on Public Health Research and Surveillance Priorities from the East Palestine, Ohio Train Derailment.

Rachel A. Morello-Frosch

Member

Rachel Morello-Frosch is an environmental health scientist, epidemiologist and professor in the School of Public Health and the Department of Environmental Science, Policy and Management at the University of California, Berkeley. Her research examines structural determinants of community environmental health with a focus on social inequality, psychosocial stressors and how these factors interact with multiple environmental hazard exposures to produce health inequalities. Morello-Frosch's work explores this question in the context of environmental chemicals, climate change, air pollution, and effects on perinatal, maternal, and children's health, often using community-based participatory research methods. In collaboration with communities and scientists, she has developed science-policy tools to assess and map the cumulative impacts of chemical and non-chemical stressors to improve regulatory decision-making. She is a member of the White House Environmental Justice Advisory Council and the National Academy of Medicine. Morello-Frosch received a B.A. in development studies from the University of California, Berkeley and an M.P.H. in epidemiology and biostatistics and Ph.D. in environmental health sciences from the University of California Berkeley School of Public Health. She previously served on the National Academies Committee on Anticipatory Research for EPA's Research and Development Enterprise to Inform Future Environmental Protection.

David J. Slusky

Member

David Slusky is a Professor of Economics at the University of Kansas, where he is also the Chair of the Department of Speech-Language-Hearing and a Professor of Population Health (by courtesy). His research focuses on reproductive healthcare, health disparities, health consequences of environmental exposure, and health insurance, and he has published in top journals in public policy, economics, medicine, and public health, including the Journal of Policy Analysis and Management, the American Economic Journal: Applied Economics, the Journal of Health Economics, Pediatrics, and the American Journal of Preventive Medicine. Professor Slusky also serves as the Executive Director of the American Society of Health Economists and as a co-editor at the Journal of Policy Analysis and Management, is a Research Associate at the National Bureau of Economic Research and is a Research Fellow at IZA - Institute of Labor Economics. He is the recipient of the Byron T. Shutz Award for Excellence in Teaching and the De-Min and Chin-Sha Wu Research Award, and delivered the 2020 Seaver Lecture for the Humanities Program, all at the University of Kansas. Professor Slusky received B.S. degrees in physics and international studies from Yale University and an M.A. and Ph.D. in economics from Princeton University.

Yoshira Ornelas Van Horne

Member

Yoshira “Yoshi” Ornelas Van Horne is an exposure scientist and environmental justice scholar, with expertise in metals exposures, air pollution, and community health. She is an Assistant Professor in the Department of Environmental Health Sciences at the University of California Los Angeles. She also serves as the assistant director of Agents of Change Fellowship. Her research focuses on addressing unequal exposures to harmful contaminants that affect structurally marginalized communities. Her active projects are focused on utilizing novel methods for source apportionment of air pollution, assessing the compounding impact of heat using community-driven approaches, and evaluating the impact of federal environmental settlements on population exposures and health outcomes. She is committed to building health equity through community-driven research and is passionate about research translation and communication. To this end, her work not only characterizes inequities in cumulative exposures but also supports community-driven solutions and training efforts. She is currently a JPB Environmental Health Fellow through Harvard T.H. Chan School of Public Health. She is also the recipient of the HEIs Rosenblith New Investigator Award (2023). Dr. Ornelas Van Horne has a PhD in Environmental Health Sciences from the University of Arizona.

Courtney G. Woods

Member

Courtney Woods is an associate professor in the Department of Environmental Sciences and Engineering in the Gillings School of Global Public Health at the University of North Carolina at Chapel Hill (UNC). She directs the Environmental Justice Action Research Clinic (EJ Clinic) at UNC, which collaborates on applied research and technical assistance in communities impacted by environmental hazards across North Carolina and trains the next generation of public health leaders in community-driven research approaches. Woods is also founding member of the Earthseed Land Collective, a BIPOC-led organization that applies cooperative principles to land stewardship, community building and works to redefine the human-natural environment relationship. For over a decade, Woods has employed community-based participatory research methods in exposure and community health assessments. Her upbringing in rural South Carolina and lifelong residency in the southeastern United States has led her to focus on environmental health issues impacting rural communities, including issues of decentralized water and sanitation, industrial animal agriculture, and landfills. In recent years, Woods has been appointed to the U.S. Environmental Protection Agency Board of Science Counselors and to the North Carolina Governor’s Environmental Justice Advisory Council. She has also worked on environmental justice issues internationally as a Fulbright and Fogarty fellow. Woods received a B.S. in chemical engineering from the University of Tennessee, Knoxville, an M.S. in chemical engineering from the Georgia Institute of Technology, and a Ph.D. in environmental sciences and engineering with a minor in toxicology from the University of North Carolina at Chapel Hill.

Lauren Zeise

Member

Lauren Zeise (retired 2024) was director of the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA). She oversaw the department's activities, including the development of risk assessments, hazard evaluations, toxicity reviews, cumulative impact analyses, frameworks and methods for assessing toxicity and cumulative effects of vulnerability and environmental exposures on communities, and the department's activities in the California Environmental Contaminant Biomonitoring Program. She played a leading role in OEHHA's development of CalEnviroScreen, a tool used to identify the California communities most burdened by pollution from multiple sources and most vulnerable to its effects. She has contributed to hundreds of chemical health risk assessments, science-based regulations, and guidance documents for conducting risk assessments. Zeise was the 2008 recipient of the Society for Risk Analysis' Outstanding Practitioners Award and she has served on advisory boards and committees of the U.S. Environmental Protection Agency, the Office of Technology Assessment, the World Health Organization, and the National Institute of Environmental Health Sciences. Zeise received a Ph.D. from Harvard University. She has previously served on numerous National Academies committees, including the Committee on Toxicity Testing and Assessment of Environmental Agents and the Committee on Improving Risk Analysis Approaches Used by EPA.

Kathryn Guyton

Staff Officer

Kathryn Guyton is a Senior Program Officer on the Board of Environmental Studies and Toxicology at the National Academies. She joined the National Academies after seven years as a Senior Toxicologist at the International Agency for Research on Cancer, World Health Organization. Her prior experience includes eight years as a Toxicologist at the US Environmental Protection Agency, and seven years as the Director of Scientific Affairs at CCS Associates. Dr. Guyton received her BA and PhD from Johns Hopkins University and her postdoctoral training at the US National Institutes of Health. She has been certified as a Diplomate of the American Board of Toxicology since 1998.