

Review of EPA's 'Science to Achieve Results' Research Grants Program

Committee

Mark J. Utell

Chair

Mark J. Utell (chair) is a professor of medicine and environmental medicine, the director of occupational and environmental medicine, and the former director of pulmonary and critical care medicine at the University of Rochester Medical Center. His research interests have centered on the effects of environmental toxicants on the human respiratory tract. Dr. Utell has published extensively on the health effects of inhaled gases, particles, and fibers in the workplace and other indoor and outdoor environments. He was the co-principal investigator of a U.S. Environmental Protection Agency (EPA) funded particulate matter research center and is a former chair of the Health Effects Institute's research committee. He has served as chair of EPA's Environmental Health Committee and on the executive committee of the EPA Science Advisory Board. He is a former recipient of the National Institute of Environmental Health Sciences Academic Award in Environmental and Occupational Medicine and the Mercer Award from the International Society for Aerosols in Medicine. Dr. Utell has served on several National Academies committees, including the Committee to Review the NIOSH Respiratory Disease Research Program; Committee to Review the Department of Defense Enhanced Particulate Matter Surveillance Program Report; Committee on Research Priorities for Airborne Particulate Matter; Committee on Research Strategy for Environmental, Health, and Safety Aspects of Engineered Nanomaterials; Committee to Review the Department of Labor's Site Exposure Matrix; and Committee on Gulf War and Health: Literature Review of Selected Environmental Agents, Pollutants, and Synthetic Chemical Compounds. He also served on the Board on Environmental Studies and Toxicology. He received his M.D. from Tufts University School of Medicine.

Praveen Amar

Member

Praveen Amar is an independent consultant in the areas of air environment, energy, and climate change strategies. He is currently working as a member of the Technical Experts Group for the United Nations Environment Program (UNEP) in implementing the global treaty on reducing emissions of mercury under the Minamata Convention. From May 2011 to May 2013, he was the Senior Policy Advisor of Technology and Climate Policy at the Clean Air Task Force (CATF), an environmental organization with a focus on protecting the environment through research, advocacy, collaboration, and innovation. Before joining CATF, Dr. Amar worked with NESCAUM, a nonprofit association of air quality agencies in the Northeast for 19 years, including 16 years as its Director of Science and Policy, where his key role was to translate the implications of findings of science and developments in technology into workable and cost-effective policy options for the Northeast states. While at NESCAUM, his research projects focused on monetizing the public health benefits of controlling mercury emissions from coal-fired power plants in the U.S. and evaluating future impacts of global climate change on regional ground-level air quality in the U.S. (ozone and fine particles). Before NESCAUM, Dr. Amar was affiliated with the California Air Resources Board (1977-1992), where he managed programs on air pollution research (including research on acid deposition, atmospheric processes, and ecological effects), strategic planning, and industrial source pollution control. He was a member of the U.S. EPA's Advisory Council on Clean Air Compliance Analysis. From 2007-2011, he served as a member of EPA's Clean Air Scientific Advisory Committee (CASAC) panel on review of Secondary National Ambient Air Quality Standards (NAAQS) for SO₂ and NO_x. Since 2015, he has been serving on the reconstituted CASAC review panel on review of the secondary NAAQS for SO₂ and NO_x. He recently completed his service on EPA's Clean Air Act Advisory Committee (CAAAC) Climate Change Work Group that addressed approaches EPA may take to control greenhouse gas emissions from large industrial sources. He is a member of the National Academies Board on Environmental Studies and Toxicology. Dr. Amar also serves on the Science Advisory Committee for the New York State Energy Research and Development Authority (NYSERDA) environmental research program. He has taught graduate courses in atmospheric processes and air pollution policy at the University of California at Davis, California State University at Sacramento, and Tufts University in Boston. Dr. Amar is a registered professional engineer in the State of California. He received his Ph.D. in engineering from the University of California at Los Angeles.

Marian R. Chertow

Member

Marian R. Chertow is Associate Professor of Industrial Environmental Management at the Yale School of Forestry and Environmental Studies. Her research and teaching focus on industrial ecology, business/environment issues, waste management, urban-industrial issues, and environmental technology innovation. Current research interests are: (1) industrial symbiosis involving geographically based exchanges of materials, energy, water and wastes within networks of businesses; (2) industrial ecology and circular economy in resource-poor, emerging economies; (3) material and energy studies to quantify and compare physical flows through urban areas especially in India and China. Prior to Yale, Professor Chertow spent ten years in environmental business and state and local government, including service as president of a large state bonding authority charged with developing a waste infrastructure system. She is a frequent international lecturer and has testified on waste, recycling and other environmental issues before committees of the U.S. Senate and House of Representatives. She is a frequent international lecturer, serves on the Board of Directors of the Alliance for Research in Corporate Sustainability (ARCS), the External Advisory Board of the Center for Energy Efficiency and Sustainability at Ingersoll Rand, and served as the elected President of the International Society of Industrial Ecology, her scholarly society, until 2015. She is also appointed at the Yale School of Management and serves on the founding faculty of the Masters of Science in Environmental Management Program at the National University of Singapore where she teaches "Business and Environment." She received her Ph.D. in environmental studies from Yale University.

Susan E. Cozzens

Member

Susan E. Cozzens is Vice Provost for Graduate Education and Faculty Development at the Georgia Institute of Technology, where she is also professor of public policy and director of the Technology Policy and Assessment Center. Dr. Cozzens's research interests are in science, technology, and innovation policies in developing countries, including issues of equity, equality, and development. She is active internationally in developing methods for research assessment and science and technology indicators. From 1995 through 1997, Dr. Cozzens was director of the Office of Policy Support at the National Science Foundation (NSF). The Office of Policy Support coordinated policy and management initiatives for the NSF director, primarily in peer review, strategic planning, and assessment. Her prior service on committees of the National Academies includes the Committee on the Review of NIOSH Research Programs and the Committee on Evaluating the Efficiency of Research and Development Programs at the Environmental Protection Agency. Dr. Cozzens holds a Ph.D. in sociology from Columbia University.

Bartholomew E. Croes

Member

Bartholomew E. Croes is the Chief of the Research Division for the California Air Resources Board, with responsibilities for California's ambient air quality standards; climate change science and mitigation of high global warming potential gases; health, exposure, atmospheric processes, and emissions control research; and indoor air quality. He was the Public Sector Co-Chair for the NARSTO Executive Assembly, a former member of the National Research Council Committee on Research Priorities for Airborne Particulate Matter, and the Committee on Energy Futures and Air Pollution in Urban China and the United States, a joint collaboration between the National Academy of Engineering, National Research Council, Chinese Academy of Engineering, and Chinese Academy of Sciences. He has been a peer reviewer for the National Research Council, the U.S. Environmental Protection Agency, and numerous journals, and received the Editors' Citation for Excellence in Refereeing from the Journal of Geophysical Research. Mr. Croes has published peer-reviewed articles on air quality simulation modeling, emission inventory evaluation, reactivity-based VOC controls, toxic air contaminants, acid deposition, the weekend effect for ozone and PM, PM data analysis and trends, diesel particle traps, and climate change impacts on California. He received an M.S. degree in chemical engineering from the University of California at Santa Barbara.

Ana V. Diez Roux

Member

Ana V. Diez Roux (NAM) is a Distinguished University Professor of Epidemiology and dean of the Drexel University School of Public Health. Originally trained as a pediatrician in her native Buenos Aires, she completed public health training at the Johns Hopkins University School of Hygiene and Public Health. Before joining Drexel University, she served on the faculties of Columbia University and the University of Michigan, where she was chair of the Department of Epidemiology and director of the Center for Social Epidemiology and Population Health at the University of Michigan School of Public Health. Dr. Diez Roux is internationally known for her research on the social determinants of population health and the study of how neighborhoods affect health. Dr. Diez Roux has served on numerous editorial boards, review panels and advisory committees including the Board of Scientific Counselors (BSC) of the National Center for Health Statistics, the Committee on Health and Wellbeing in the Changing Urban Environment of the International Council for Science (ISCUS), and the Editorial Board of the Annual Review of Public Health. She currently serves as chair of the U.S. Environmental Protection Agency's Clean Air Scientific Advisory Committee and a member of the agency's Science Advisory Board. She was awarded the Wade Hampton Frost Award for her contributions to public health by the American Public Health Association. She is an elected member of the American Epidemiological Society and the Academy of Behavioral Medicine Research. She was elected to the National Academy of Medicine in 2009. Dr. Diez Roux received an M.D. from the University of Buenos Aires.

Kimberly A. Gray

Member

Kimberly A. Gray is the chair of the Civil and Environmental Engineering Department and Professor of Civil and Environmental Engineering and Chemical and Biological Engineering at Northwestern University. Dr. Gray's areas of expertise are environmental catalysis and physicochemical processes in natural and engineered environmental systems with particular focus on energy and urban sustainability applications. She studies the synthesis, characterization and performance of photo-active materials, principally TiO₂-based nanocomposites for solar fuel production and water/air treatment. Work in her group also involves the investigation of chemical fate in natural systems. She probes the role of periphyton (algal biofilms) in contaminant accumulation in stream sediments and in denitrification in wetlands. She studies the ways in which detailed understanding of ecological relationships (periphyton structure and dynamic food web descriptions) improves our ability to predict chemical transfer (bioaccumulation) in aquatic systems and ultimately human health risks. Application of this research is important in efforts to restore critical ecosystems (Great Lakes), to make ecological forecasts in the face of climate change and to employ ecosystem function for environmental protection (treatment wetlands). She is also studying the unintended ecotoxicological impacts of nanomaterials in aquatic systems. Recent work entails the adaptive design of urban systems to incorporate coupled ecological processes in response to climate change and demographic shifts. She works closely with the Chicago Legal Clinic to provide technical expertise to solve environmental problems for low-income urban communities and with other NGOs in the Chicago region to develop creative solutions for resource recovery and economic recovery. She was a Senior Science Fellow at the Environmental Law and Policy Center. She is the author of more than 100 scientific papers and lectures widely on energy, climate and environmental issues. Dr. Gray earned her Ph.D. in geography and environmental engineering from the Johns Hopkins University.

Philip K. Hopke

Member

Philip K. Hopke is the Bayard D. Clarkson Distinguished Professor Emeritus at Clarkson University and an adjunct professor in the Department of Public Health Sciences at the University of Rochester Medical Center. He was formerly the Director of the Institute and its Center for Air Resources Engineering and Sciences. His research interests are primarily related to particles in the air, including particle formation, sampling and analysis, composition, and origination. His current projects are related to biomass combustion, receptor modeling, ambient monitoring, and nucleation. Dr. Hopke has been elected to membership of the International Statistics Institute and he is a fellow of the American Association for the Advancement of Sciences. He is also a fellow of the American Association for Aerosol Research where he has served in various roles, including as president, vice president, and as a member of the board of directors. Dr. Hopke is a member of the American Institute of Chemical Engineers, the International Society of Exposure Science, and the International Society of Indoor Air Quality and Climate, among others. He has served as a member of the U.S. Environmental Protection Agency Advisory Council on Clean Air Act Compliance Analysis and as a member of several Academies committees. Most recently he was a member of the NRC Committee on Strengthening the U.S. EPA Laboratory Enterprise the U.S. Environmental Protection Agency Laboratory Enterprise: Phase 1 – Priority Needs, Guiding Principles, and Overall Goals and the Committee to Develop a Research Strategy for Environmental, Health, and Safety Aspects of Engineered Nanomaterials. He is a member of the Board on Environmental Studies and Toxicology. Dr. Hopke received his Ph.D. in chemistry from Princeton University.

Kimberly L. Jones

Member

Kimberly L. Jones is a professor and chair of the Department of Civil and Environmental Engineering at Howard University. She previously worked as an associate and assistant professor in that department from 1996 to 2009. Dr. Jones' research interests include developing membrane processes for environmental applications, physical-chemical processes for water and wastewater treatment, remediation of emerging contaminants, drinking water quality, and environmental nanotechnology. Dr. Jones currently serves on the Science Advisory Board of the U.S. Environmental Protection Agency, and as chair of the Drinking Water Committee of the Science Advisory Board. She has served on the National Academies Water Science and Technology Board, and the Board of Association of Environmental Engineering and Science Professors, where she was Secretary of the Board. She received a Ph.D. in environmental engineering from the Johns Hopkins University.

Harold A. Mooney

Member

Harold A. Mooney (NAS) is the Paul S. Achilles Professor, Emeritus, in Environmental Biology at Stanford University. His research focuses on global change biology. Dr. Mooney is the former Chair of the DIVERSITAS Scientific Committee as well as the Global Invasive Species Program. He also served on several NRC committees, including serving as chair of the Committee to Review EPA's Research Grants Program. Dr. Mooney is a member of the National Academy of Sciences, World Academy of Sciences, and American Philosophical Society. He is a fellow of the American Academy of Arts and Sciences, foreign member of the Russian Academy of Sciences, and honorary member of the British Ecological Society. He was the 1990 recipient of the ECI Prize in terrestrial ecology. He has received the Max Planck Research Award in biosciences (1992; together with Ernst-Detlef Schulze) and been given the Eminent Ecologist Award for 1996 by Ecological Society of America. He has received the Ramon Margalef Prize in Ecology, BBVA Prize in Conservation Biology, Blue Planet Prize, Volvo Environment Prize, and Tyler Prize for Environmental Achievement. He has published extensively in physiological, ecosystem and global change ecology. He has served as Chair of the U.S. Global Change Committee, Secretary General of the International Council for Science, President of the Ecological Society of America, and President of the American Institute of Biology. He was Scientific Panel Co-Chair for the Millennium Ecosystem Assessment. Dr. Mooney earned his Ph.D. in biology from Duke University.

Martin A. Philbert

Member

Martin A. Philbert (NAM) is a professor of toxicology and dean of the School of Public Health at the University of Michigan. He became dean on January 1, 2011, having previously served as senior associate dean for research at the school since 2004. He arrived at UM in 1995 from Rutgers' Neurotoxicology Laboratories, where he was a research assistant professor. He has maintained a continuously federally funded portfolio of basic research activities throughout his career. Most recently his work has been funded by the National Institutes of Health, the Department of Air Force, and the National Cancer Institute. At the national level, he is recognized for his work in neurotoxicology and experimental neuropathology. Dr. Philbert was elected to the National Academy of Medicine in 2012. He is the author of numerous research publications in top peer-reviewed journals, and one book. Active research activities include experimental neuropathology, nitrocompound-induced encephalopathies, mitochondrial mechanisms in non-neuronal cell death, development of Nano-Optical Chemical Systems for in vivo physiology, and nanostructure-based imaging and treatment of tumors of malignant gliomas. He received a Ph.D. in neurochemistry and experimental neuropathology from the University of London.

Joshua M. Sharfstein

Member

Joshua M. Sharfstein (NAM) is the Associate Dean for Public Health Practice and Training and Professor of the Practice at the Johns Hopkins University. He oversees the Office of Public Health Practice and Training, the General Preventive Medicine Residency and major practice activities, including collaboration with public health agencies. He also holds a faculty appointment in the Department of Health Policy and Management. Previously, he served as secretary of the Maryland Department of Health and Mental Hygiene, the Principal Deputy Commissioner of the U.S. Food and Drug Administration, Commissioner of Health for Baltimore City, and health policy advisor for Congressman Henry A. Waxman. He serves as a member of the National Academies Board on Population Health and Public Health Practice. Dr. Sharfstein received his M.D. from Harvard Medical School.

Mitchell J. Small

Member

Mitchell J. Small is the H. John Heinz III Professor of Environmental Engineering at Carnegie Mellon University. Dr. Small's research involves mathematical modeling of environmental systems, environmental statistics, risk assessment, and decision support. Current projects include the design and evaluation of leak detection at geologic CO₂ sequestration sites and shale gas extraction wells; the value of scientific information for conflict resolution among stakeholders with different values and beliefs; and the development of decision support tools for water, energy and ecosystem management. He has published more than 200 manuscripts in peer-reviewed journals (160), books and conference proceedings. Dr. Small has served as a member of the U.S. EPA Science Advisory Board (SAB) and has been a member of nine National Academies committees, most recently as chair of the Committee on Risk Management and Governance Issues in Shale Gas Extraction. He is a Fellow of the Society for Risk Analysis and served as an associate editor for the journal *Environmental Science & Technology* (1995 - 2011), where he helped to initiate the policy analysis section of the journal. Dr. Small received a Ph.D. in environmental and water resources engineering from the University of Michigan.

Clifford P. Weisel

Member

Clifford P. Weisel is a professor at the Rutgers University and acting director of the Exposure Science Division of the university's Environmental and Occupational Health Sciences Institute. He also is director of the Doctoral Degree Program in Exposure Science offered by Rutgers University. The focus of Dr. Weisel's research is on understanding exposure to chemical agents, with an emphasis on multi-route exposures to environmental contaminants, the association between exposure and adverse health effects, utilization of sensors for continuous exposure measurement, and development and application of biomarkers of exposure, including metabolomics. He has examined the relationship among indoor, outdoor and personal exposures to air pollutants, documented the importance of inhalation and dermal exposure to contaminants, characterized exposures within the transportation sector, and examined exposure and health issues related to disinfection by-products in water. He is a past president and treasurer of the International Society of Exposure Science and has served on numerous international and national advisory committees, workshops and advisory review panels for NAS, EPA, NIEHS, CDC, state governmental, environmental groups and private industry. He served as associate editor of the Journal of Exposure Science and Environmental Epidemiology. Dr. Weisel has authored or co-authored more than 100 peer-reviewed publications and book chapters; he co-authored with Dr. Paul Liou the book Exposure Science: Basic Principles and Applications. He received a M.S. degree and Ph.D. in Analytical Chemistry and Chemical Oceanography, respectively, from the University of Rhode Island.