Invitation for Public Comment on the List of Candidates
For the Environmental Protection Agency's
Clean Air Scientific Advisory Committee (CASAC)
Particulate Matter (PM) Review Panel

July 29, 2021

The U.S. Environmental Protection Agency (EPA) Science Advisory Board (SAB) Staff Office announced in a Federal Register Notice (86 FR 33703-33704) on June 25, 2021, that it was inviting nominations of experts to be considered for appointment to the Clean Air Scientific Advisory Committee (CASAC) Particulate Matter (PM) Review Panel. The CASAC PM Review Panel will provide advice through the chartered CASAC on updates to the science and policy assessments supporting the agency's reconsideration of the December 2020 decision to retain the PM National Ambient Air Quality Standards (NAAQS). The SAB Staff Office sought nominations of nationally and internationally recognized scientists with demonstrated expertise and research in the field of air pollution related to criteria pollutants, in the following fields, especially with respect to PM: Air quality and climate responses, atmospheric science and chemistry, toxicology, controlled human exposure studies, epidemiology, biostatistics, exposure assessment/modeling, risk assessment/modeling, and visibility impairment.

The SAB Staff Office received nominations for the attached 75 candidates based on their expertise and willingness to serve. We hereby invite public comments on the attached List of Candidates under consideration for appointment to the CASAC PM Review Panel. Comments should be submitted to Mr. Aaron Yeow, Designated Federal Officer, at yeow.aaron@epa.gov no later than **August 19, 2021**. E-mail is the preferred mode of receipt. Please be advised that public comments are subject to release under the Freedom of Information Act.

2021 CASAC PM Panel

Adams, Peter

Carnegie Mellon University

Dr. Peter Adams is a Professor in the Civil and Environmental Engineering Department and the Engineering and Public Policy Department at Carnegie Mellon University. Dr. Adams' research largely focuses on development of chemical transport models and their application to decision-making, especially related to particulate matter (PM2.5). Dr. Adams also has extensive expertise in the simulation of aerosol microphysical processes, ultrafine particles and the formation of cloud condensation nuclei in global climate models. Areas of research have also included the effects of climate change on air quality, short-lived climate forcers, atmospheric ammonia and particulate matter formation from livestock operations, and the simulation organic particulate matter. Dr. Adams was selected for a Fulbright grant to collaborate with researchers at the Institute of Atmospheric Sciences and Climate in Bologna, has been a Visiting Senior Research Scientist at the National Aeronautics and Space Administration's Goddard Space Flight Center, and received the Sheldon K. Friedlander Award for outstanding doctoral thesis from the American Association for Aerosol Research. He has previously served on the Commonwealth of Pennsylvania's Air Quality Technical Advisory Committee and the Allegheny County Health Department's Air Toxics New Guidelines Proposal Committee as well as service to the American Association for Aerosol Research. His research is supported primarily by the Environmental Protection Agency, the National Science Foundation, the National Aeronautics and Space Administration, the Department of Energy, and the Department of Defense. Dr. Adams received his B.S. degree in Chemical Engineering, summa cum laude, from Cornell University. He was awarded a Hertz Foundation Applied Science Fellowship for graduate study and received M.S. and Ph.D. degrees in Chemical Engineering from the California Institute of Technology. He also holds an associated faculty position in the Chemical Engineering department at Carnegie Mellon.

Adar, Sara

University of Michigan

Dr. Sara Adar is an Associate Professor of Epidemiology at the University of Michigan School of Public Health. She has nearly 25 years of experience working in environmental health with expertise in exposures to and the health effects of air pollution and noise. Dr. Adar currently has funding from the National Institutes of Health (NIH) to study the impacts of fine particulate matter, coarse particulate matter, ozone, and nitrogen oxides on outcomes of aging including dementia, disability, and lost independence as well as relationships with health care costs in the United States. Using the same nationally-representative cohort, she is also funded to explore issues of environmental justice. Dr. Adar is similarly funded by the NIH to study particulate air pollution and aging in nationally-representative surveys from the Europe, Asia, and Central America as well as the impacts of funding for clean school buses on educational attainment, absenteeism, and health in children with funding from the Health Effects Institute. Dr. Adar is currently a member of the Health Effects Institute's Review Panel for Low Levels of Air Pollution Studies, an associate editor at Environmental Health Perspectives, on the editorial board at Environment International, and a section editor at Current Environmental Health Reports. She previously served as the elected Secretary/Treasurer of the International Society of Environmental Epidemiology, a member of the Technical Oversight Committee for Non-Communicable Disease Studies for the United Nation Foundation's Global Alliance for Clean Cookstoves, a member of the external scientific advisory committee for the Great Lakes Air Center for Integrative Environmental Research (GLACIER) project funded by the Environmental Protection Agency (EPA), and an expert reviewer of the Integrated Science Assessment for the National Ambient Air Quality Standards (NAAQS) for PM (2008, 2015) and Sulfur Oxides (2014). Dr. Adar has training in environmental engineering from the Massachusetts Institute of Technology (B.S., 1996) as well as epidemiology, exposure assessment, and biostatistics from the Johns Hopkins School of Public Health (M.P.H., 1998) and the Harvard Chan School of Public Health (Sc.D., 2005). She also completed post-doctoral fellowship at the University of Washington working on the Multi-Ethnic Study of Atherosclerosis and Air Pollution (MESA Air).

Adgate, John

University of Colorado

Dr. John L. Adgate, is Professor in the Department of Environmental and Occupational Health at the Colorado School of Public Health, University of Colorado. His exposure science research focuses on improving public health and epidemiological studies by documenting the magnitude and variability of human exposure to air and water pollutants, pesticides, metals, and allergens. His research projects have included exploration of longitudinal exposure to indoor and outdoor air pollutants, assessing the environmental and human health impacts of unconventional oil and gas development, the impact of climate change on indoor environments, Per- and polyfluoroalkyl substance (PFAS) exposure and health effects in a highly exposed community, and the association between air pollution and chronic kidney disease in Guatemalan sugarcane workers. Dr. Adgate has served on multiple Environmental Protection Agency (EPA) Science Advisory Panels exploring technical and policy issues related to residential exposure to pesticides, metals, and implementation of the Food Quality Protection Act of 1996. He was also a member of U.S. Institute of Medicine's Committee on Research Ethics in Housing Related Health Hazard Research in Children and the National Research Council's 2011 Committee on Indoor Air and Climate Change. He has advised the States of New York, Maryland, and Michigan on the potential public health impacts of high volume hydraulic fracturing, and leading studies exploring the public health impacts of hydraulic fracturing funded by the National Science Foundation, the National Institutes of Environmental Health Sciences, and the Department of Energy. His current research is focused on characterizing the exposures and impacts of the wide range of chemical and non-chemical stressors found in and around oil and gas development sites and PFAS exposure. Dr. Adgate received a B.Sc. in biology from Calvin College, an M.S.P.H. from the University of North Carolina at Chapel Hill, and a Ph.D. in Environmental Health Sciences jointly awarded by Rutgers University and the University of Medicine and Dentistry of New Jersey. He has held faculty positions at the University of Minnesota and has current appointments at the University of Colorado Anschutz Campus and Colorado State University. In 2006-7 he was a Fulbright Visiting Scholar at the Pontificia Universidad Católica de Chile in Santiago, where he taught risk analysis and worked on air quality research. He has served as an elected Councilor of the International Society of Exposure Science (ISES), was a recipient of its Joan M. Daisey Outstanding Young Scientist Award, and co-chaired ISES's 2009 meeting. He has taught graduate level courses on Risk Analysis and Communication, Introduction to Environmental and Occupational Health, Advanced Methods in Exposure Science, and Occupational Health and Safety.

Allen, George A.

Northeast States for Coordinated Air Use Management (NESCAUM)

Mr. George Allen is the Chief Scientist at the Northeast States for Coordinated Air Use Management (NESCAUM), an interagency association of the eight Northeastern States. He holds a B.S. in Electrical Engineering from Tufts University. At NESCAUM, Mr. Allen is responsible for monitoring and exposure assessment activities across a range of wide range of air topics, including regional haze, air toxics, on and off-road diesel, wood smoke, and continuous aerosol measurement technologies. He served on the Chartered Clean Air Scientific Advisory Committee (CASAC) from 2010 to 2016, has been a member of several CASAC review panels since 2004 including the disbanded 2016 particulate matter (PM) panel, and is the author or co-author of more than 45 peer-reviewed journal papers on development and evaluation of measurement methods, exposure assessment, and air pollution health effects. In October 2019, Mr. Allen participated in the Independent PM review Panel, a group of scientists dismissed by the Environmental Protection Agency (EPA) in the fall of 2018 that performed a parallel review of the science behind the PM standards. Before joining NESCAUM in 2002, Mr. Allen was on the professional staff at the Harvard School of Public Health (HSPH) in Boston for more than 20 years, working on a wide range of air pollution studies, funded by EPA and the National Institutes of Health. While at HSPH, he developed several new techniques for real-time aerosol measurements. Currently, Mr. Allen is serving as the lead for the NESCAUM Monitoring and Assessment Committee. He also represents states interests to EPA in the National Association of Clean Air Agencies (NACAA) Monitoring Steering Committee, and is a member of the Environmental Protection Agency (EPA) AIRNow Steering Committee. Mr. Allen's current and pending research support pertains to scientific, technical, analytical, and policy support for NESCAUM states' air quality and climate programs, with a focus on air pollution exposure assessment and measurement methods development. These funders include New York State Energy Research and Development Authority (NYSERDA) (characterization of biomass air pollution), Massachusetts Department of Environmental Protection (spatial and temporal trends of black carbon), NESCAUM member states and Federal Land Managers (CAMNET visibility network), NESCAUM member states and EPA (support of member states' air quality programs).

Alvarez, Ramón

Environmental Defense Fund

Dr. Ramón Alvarez, Associate Chief Scientist, helps guide the scientific priorities at the Environmental Defense Fund (EDF) and ensure its work is on the cutting edge of scientific thought. Dr. Alvarez currently leads EDF's global efforts to deploy novel air pollution monitoring technologies and strategies to inform air pollution mitigation. He played a lead role in EDF's initiative to characterize and reduce air emissions from U.S. oil and natural gas operations. Previously, he promoted cleaner air in Texas cities, with an emphasis on reducing emissions from electric power plants and diesel vehicles. He led the campaign to establish the Texas Clean School Bus Program and assisted U.S.-Mexico border industries to find cost-effective methods to reduce waste. Dr. Alvarez has a Ph.D. in Physical Chemistry from the University of California at Berkeley, where he carried out research on atmospheric and combustion processes and a B.S. degree in chemistry from Duke University. Recent major funding for his work has come from private philanthropies (Valhalla Charitable Foundation, Clean Air Fund) and the U.S. Agency for International Development. Dr. Alvarez' professional service includes: the Science Advisory Committee of the Center for Air, Climate and Energy Solutions (funded by the Environmental Protection Agency); the Shale Development Task Force of the Texas Academy of Medicine, Engineering and Science of Texas; the Advisory Council of the Texas Air Quality Research Program; the Board on Environmental Studies and Toxicology of the National Research Council; and the board of the American Lung Association of Texas.

Apte, Joshua

University of California, Berkeley

Dr. Joshua Apte is an assistant professor at University of California, Berkeley (UC Berkeley), jointly appointed in the Department of Civil and Environmental Engineering and the School of Public Health. Dr. Apte's research interests lie at the intersection of air pollution, environmental justice, public health, energy and climate change. He has extensive technical expertise in the areas of air pollution exposure assessment, atmospheric aerosols, measurement technology, reduced complexity atmospheric models, and in the application of exposure estimates to risk assessment and environmental epidemiology. Current research emphases include: (i) development of high-resolution exposure assessment methods using mobile monitoring, low-cost-sensors, and models; (ii) solution-oriented assessment of environmental disparity and environmental justice, (iii) policy analysis to simultaneously advance equity, public health, and climate change mitigation, and (iv) air pollution in low-income countries. Dr. Apte approaches his work from a strong perspective of community engagement and capacity building. Dr. Apte has published over 50 peer-reviewed journal articles, including multiple papers recognized as the best papers of the year in Proceedings of the National Academy of Sciences of the United States of America (PNAS), Environmental Science & Technology (ES&T), ES&T Letters, and other journals. He holds Ph.D. and M.S. degrees in Energy and Resources from UC Berkeley, and a Sc.B. in Environmental Science from Brown University. Prior to joining UC Berkeley, Dr. Apte was a Fulbright-Nehru Fellow in India, the inaugural ITRI-Rosenfeld Postdoctoral fellow at Lawrence Berkeley National Laboratory (2013-2014), and an assistant professor at the University of Texas (2015-2020). Notable service contributions include to the Early Career Editorial Advisory Board of the journal Environmental Science & Technology, as a member of the World Health Organization (WHO) Global Air Pollution and Health Technical Advisory Group, and ad-hoc advisory roles with community environmental groups. He is a member of the American Chemical Society, the American Association of Aerosol Research, the International Society of Exposure Science, and the International Society of Environmental Epidemiology.

Balmes, John R.

University of California, San Francisco

Dr. John Balmes is Professor of Medicine Emeritus at the University of California, San Francisco (UCSF) and Professor of Environmental Health Sciences in the School of Public Health at the University of California, Berkeley (UC Berkeley). Dr. Balmes is a physician-scientist who graduated with a B.A. in Psychology from the University of Illinois, Champaign-Urbana in 1972; received his M.D. from the Mount Sinai School of Medicine in 1976; completed a Residency in Internal Medicine at the Mount Sinai Hospital in New York City in 1979; and completed a Post-doctoral Fellowship in Pulmonary Medicine at Yale University School of Medicine in 1982. He is board-certified in both Internal and Pulmonary Medicine and is a practicing physician at the Zuckerberg San Francisco General Hospital. Dr. Balmes has been studying the adverse health effects of exposures to occupational and environmental toxicants for the past 40 years with over 300 peer-reviewed papers published in the scientific literature. Many of these papers report results of his research on the health effects of ambient air pollution. He is currently funded by the National Institute of Environmental Health Sciences (NIEHS) to study the metabolic effects of exposure to air pollution among children in Fresno, CA. He is also currently funded by the NIEHS to conduct two randomized controlled trials: 1) of a stove range hood intervention to reduce cooking-related indoor air pollution and improve asthma outcomes among children in Richmond, CA; and 2) of a combined clean cooking and clean lighting intervention to improve lung function and blood pressure among children and adults in Rwanda. Dr. Balmes has served as the Physician Member of the California Air Resources Board since 2008. He has also served on multiple National Ambient Air Quality Standard Review Panels of the Clean Air Scientific Advisory Committee, including for ozone, nitrogen oxides, sulfur oxides, and most recently, particulate matter. He is a member of the American Thoracic Society, the American College of Chest Physicians, the European Respiratory Society, the Pan African Thoracic Society, and the American College of Occupational and Environmental Medicine. He is an Associate Editor of the American Journal of Respiratory and Critical Care Medicine. Dr. Balmes is the Director of the Northern California Center for Occupational and Environmental Health (COEH), a consortium of programs at UC Berkeley, UC Davis and UCSF. In that role, he also is the Principal Investigator of the Northern California Educational Resource Center funded by the Centers for Disease Control and Prevention (CDC) and the National Institute for Occupational Safety and Health (NIOSH).

Bell, Michelle

Yale University School of the Environment

Dr. Michelle Bell is the Mary E. Pinchot Professor of Environmental Health at the Yale University School of the Environment, with secondary appointments at the Yale School of Public Health, Environmental Health Sciences Division and the Yale School of Engineering and Applied Science, Department of Chemical and Environmental Engineering. Her research investigates how human health is affected by environmental conditions, including air pollution and weather. Other research interests include the health impacts of climate change and environmental justice. Much of this work is based in epidemiology, biostatistics, and environmental engineering. The research is designed to be policy-relevant and contribute to well-informed decision-making to better protect human health and benefit society. She is the Director of the Solutions to Energy, AiR, Climate, and Health (SEARCH) Center funded by the Environmental Protection Agency (EPA). She is Principal Investigator (PI) for a National Institutes of Health (NIH) Research Project (R01) grant focusing on environmental justice and a project funded by the Wellcome Trust on air pollution and health under climate change in Brazil. Other funding within the last two years include projects on green playgrounds in New York City funded by the Robert Wood Johnson Foundation, ethane cracker plants funded by the Hightide Foundation, and unconventional oil and gas funded by EPA. Her work is global in scope and she has over 250 peer-reviewed publications. Dr. Bell holds a Ph.D. in Environmental Engineering and M.S.E. in Environmental Management and Economics from Johns Hopkins University, an M.S. in Environmental Engineering and Science from Stanford University, an M.Sc. in Philosophy from University of Edinburgh, and a B.S. in Environmental Engineering Science from the Massachusetts Institute of Technology. She was a member of the EPA Clean Air Scientific Advisory Committee (CASAC) Ozone Review Panel and is a current and former member of several National Academy committees. She received the NIH Outstanding New Environmental Scientist (ONES) Award, Health Effects Institute Rosenblith New Investigator Award, and the Prince Albert II de Monaco/Institut Pasteur Award. She was elected to the National Academy of Medicine and was recognized as a highly cited researcher (top 1% for field) for the last three years.

Boylan, James

Georgia Department of Natural Resources

Dr. James Boylan is currently the Manager of the Planning & Support Program in the Air Protection Branch of the Georgia Environmental Protection Division. The Planning & Support Program includes the Data & Modeling Unit (DMU), Emissions & Control Strategies Unit (ECSU), and Planning & Regulatory Development Unit (PRDU). Dr. Boylan's team is responsible for air dispersion modeling with American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) and California Puff Model (CALPUFF) required for Prevention of Significant Deterioration (PSD) permit applications covering sulfur dioxide (SO2), nitrogen dioxide (NO2), carbon monoxide (CO), particulate matter with a diameter of less than 2.5 microns (PM2.5), and lead (Pb); photochemical grid modeling with Community Multiscale Air Quality Model (CMAQ) and Comprehensive Air Quality Model with extensions (CAMx) required for Georgia's ozone, PM2.5, and regional haze State Implementation Plans (SIPs); meteorological modeling with the fifth-generation Pennsylvania State University–National Center for Atmospheric Research Mesoscale Model (PSU/NCAR MM5) and Weather Research and Forecasting model (WRF); emissions modeling with Sparse Matrix Operator Kernel Emissions model (SMOKE) and MOtor Vehicle Emission Simulator (MOVES); the development of annual state-wide emission inventories for criteria pollutants; and the technical analyses for nonattainment area designation recommendations (ozone, PM2.5, lead, SO2, NO2). In addition, he is responsible for updating Georgia's Rules for Air Quality Control and developing and submitting all attainment demonstration State Implementation Plans (SIPs), infrastructure SIPs, and rule revision SIPs to Environmental Protection Agency (EPA). He has a B.S. in Chemical Engineering from the University of Notre Dame, a M.S. in Chemical Engineering from Auburn University, and a M.S. and Ph.D. in Environmental Engineering from the Georgia Institute of Technology. Dr. Boylan's Ph.D. research included the development of the Urban-to-Regional Multiscale 1 Atmosphere Model (URM-1ATM) which was the first comprehensive three-dimensional Eulerian photochemical grid model that included full ozone chemistry, heterogeneous sulfate chemistry, aerosol thermodynamics, wet deposition and scavenging, and the decoupled direct method (DDM) for ozone and particulate matter. This model was applied as part of the Southern Appalachian Mountain Initiative (SAMI) to simulate 1-hour maximum ozone, W126 ozone, speciated PM2.5, acid deposition (ANC), and regional haze. In 2002, he was awarded the "Outstanding Ph.D. Thesis Award" the for the best Ph.D. dissertation in the Georgia Tech School of Civil and Environmental Engineering. Later, he developed and published the first model performance goals and criteria for PM2.5 which has become the benchmark for most PM2.5 modeling projects both nationally and internationally. Dr. Boylan was one of the first modelers to merge traditional air permit dispersion modeling with photochemical grid models (PGMs) when he applied a PGM to evaluate the single source impacts on ozone and secondary PM2.5 from a coal-fired power plant as part of a PSD permitting review in 2009. In addition, he developed the "Inter-Pollutant Trading Ratio Approach" for accounting for secondary PM2.5 formation from SO2 and NOx in EPA's AERMOD steady-state dispersion model. Over the past several years he has held leadership positions within many regional and national workgroups. Dr. Boylan has authored or co-authored over 30 peer-reviewed journal articles and conference papers on ozone and PM2.5, has presented research findings at over 150 national, regional, and local conferences/meetings, and was awarded "Outstanding Reviewer Status" by Atmospheric Environment in 2015. In 2001, Dr. Boylan was inducted into the Sigma Xi Scientific Research Honor Society. In 2014, Dr. Boylan was selected to participate in the Clean Air Scientific Advisory Committee (CASAC) review panel for the primary SO2 NAAQS. In 2017, he was appointed by the EPA Administrator to serve on the chartered CASAC where he reviewed EPA documents for the most recent ozone and PM National Ambient Air Quality Standards (NAAQS). He was assigned as lead reviewer on multiple chapters and appendixes related to measurements, emissions, and modeling. In December 2020, Dr. Boylan published a paper titled "CASAC Review of the PM and Ozone NAAQS" in EM - The Magazine for Environmental Managers where he compared the traditional CASAC review approach to the newly implemented streamlined approach. Finally, Dr. Boylan was one of eight people selected to serve on the SAB Reduced Forms Tools (RFT) review panel in 2020.

Chow, Judith C.

Desert Research Institute

Dr. Judith Chow holds the Nazir and Mary Ansari Chair in Science and Entrepreneurialism and is a Research Professor in the Division of Atmospheric Sciences at the Desert Research Institute (DRI), Nevada System of Higher Education in Reno, Nevada. She has led DRI's Environmental Analysis Facility since its inception in 1985. Dr. Chow earned a B.S. degree in Biology from Fu-Jen Catholic University in Taiwan (1974), a M.S. degree in Environmental Health Science (1983) from Harvard University, and a Sc.D. degree in Environmental Science and Physiology (1985) from Harvard University. For nearly 45 years, she has conducted air quality and source characterization studies and performed data analysis and receptor modeling to improve understanding of how air quality affects human health, visibility, historical treasures, ecosystems, and climate. Dr. Chow is currently the principal investigator for: 1) measuring organic and black carbon concentrations for the National Park Service's Interagency Monitoring of Protected Visual Environments (IMPROVE) network; 2) tracking changes in air quality with control measures at the ports of Los Angeles and Long Beach; and 3) investigating the chemical nature and composition of atmospheric brown carbon aerosol. She has been principal investigator or a major collaborator in more than 50 large air quality studies (and many smaller ones) across the United States and in other countries. Dr. Chow prepared and revised sections of EPA's Particulate Matter (PM) Criteria Document (in the late 1990s/early 2000s) pertaining to chemical analysis and source emissions and contributed to EPA guidance documents on network design, continuous particulate monitoring, and particulate matter chemical speciation. Her research has been sponsored by grants and contracts from the federal government (e.g., EPA, Department of Energy and Department of Interior), local, state, and international air quality management authorities, industry, and the National Science Foundation. As past chair and a member of the Air & Waste Management Association's (A&WMA) Critical Review Committee, Dr. Chow has coordinated and evaluated Critical Reviews and Discussions on environmental science and technology topics. She was chair of the Publications Committee for the Journal of the Air & Waste Management Association and serves on Editorial Boards and/or as Associate Editor for several international journals including: the Journal of Air Quality, Atmosphere, & Health, Aerosol and Air Quality Research, Atmospheric Pollution Research, and Particuology. Dr. Chow was a member of the National Research Council's (NRC) committees on Research Priorities for Airborne Particulate Matter (1998–2003) and Energy and Air Pollution Futures in the U.S. and China (2004-2008); she also served on the NRC Board on Environmental Studies and Toxicology (2002–2005). She has been a member of the technical advisory group for the South Coast (California) Air Quality Management District's Multiple Air Toxics Exposure Study (MATES) since 1998. Dr. Chow was a chartered member of EPA's Clean Air Scientific Advisory Committee (CASAC) (2015-2018) and CASAC's Air Monitoring and Methods Subcommittee (AMMS, formerly the Ambient Air Monitoring and Methods Subcommittee) (2004-2019). She is the principal author or co-author of >590 peer-reviewed articles and book chapters and >260 reports. She has been recognized by ISIHighlyCited.com in ecology and environment with more than 27, 725 citations and an h-index of 82, and is one of Stanford University's "Top 2% of the Worlds' Most Cited Scientists."

Clougherty, Jane

Drexel University

Dr. Jane E. Clougherty is an Associate Professor at the Drexel University Dornsife School of Public Health, Department of Environmental and Occupational Health. Dr. Clougherty completed her doctorate and post-doctoral training at the Harvard School of Public Health, worked at New York City Department of Health and Mental Hygiene from 2008-2010, and was faculty at the University of Pittsburgh Graduate School of Public Health from 2010-2016. An air pollution exposure scientist and epidemiologist, Dr. Clougherty's research focuses on the combined health effects of chronic social stressors and air pollution exposures. To that end, she has designed and implemented a number of studies on intra-urban variation in air pollution and source apportionment. She is Principal Investigator on several studies funded by the Environmental Protection Agency (EPA) and National Institutes of Health (NIH), including a Research Project grant (R01) using geographic information systems (GIS)-based methods to examine how social and environmental exposures may alter the efficacy of pharmaceutical interventions for asthma in clinical trials, a Health Effects Institute (HEI)-funded grant on the combined effects of community stressors and multiple pollutant exposures on cardiovascular events, and an R01 on extreme temperature and children's health. She has received a Fulbright award, and the International Society for Exposure Science (ISES) Sally Liu Award for an Outstanding New Investigator. She has served on the Board of ISES, and on Scientific Advisory Committees of the National Academy of Sciences, Engineering, and Medicine.

Cory-Slechta, Deborah

University of Rochester

Dr. Deborah Cory-Slechta is a Professor of Environmental Medicine, Pediatrics and Public Health Sciences at the University of Rochester Medical School, and former Chair of its Department of Environmental Medicine and Principal Investigator (PI) of its National Institute of Environmental Health Sciences (NIEHS) Core Center Grant. She also previously served as Dean for Research at the University of Rochester Medical School, and as Director of the Environmental and Occupational Health Sciences Institute of Rutgers University. Her research, which has resulted in over 200 peer-reviewed publications to date, includes both animal models and human studies focused largely on the consequences of developmental exposures to environmental chemicals on brain development and behavior. Her earlier work examined the effects of developmental exposures to metals and pesticides in animal models and human cohorts. Over the past 10 years she has undertaken studies of the impact of air pollution on brain development and behavior, with exposures to concentrated ambient ultrafine particles that have led to 20 peer-review publications. Dr. Cory-Slechta has served on advisory panels of the National Institutes of Health (NIH), the Food and Drug Administration (FDA), the Environmental Protection Agency, the National Academy of Sciences, the Institute of Medicine, and the Agency for Toxic Substances and Disease Registry (ATSDR), and on the editorial boards of the journals Environmental Health Perspectives, Neurotoxicology, Toxicology, Toxicological Sciences, Toxicology and Applied Pharmacology and Neurotoxicology and Teratology. She also served on the Board of Scientific Counselors, ATSDR/Centers for Disease Control and Prevention (CDC). In 2017, she was the recipient of the Distinguished Neurotoxicologist Award from the Neurotoxicology Specialty Section of the Society of Toxicology. In 2021, she was the recipient of the Distinguished Toxicology Scholar Award from the Society of Toxicology.

Cote, Ila

University of Colorado

Dr. Ila Cote is currently an associate for Risk Sciences International, Ottawa, Canada (an international consulting company), and an adjunct professor in the University of Colorado Medical School, Department of Environmental and Occupational Health. She is an inhalation toxicologist and risk assessor. Her B.A. is from the University of New Mexico, and her Ph.D. is from the University of New Mexico, School of Medicine (Albuquerque, NM). She was a post-doctoral fellow at Duke University School of Medicine, Department of Cell Biology (neuroendocrinology), and then at the New York University School of Medicine, Department of Environmental Medicine (inhalation toxicology). For more than 25 years, she was a board-certified toxicologist. Current research interests are in improving dose-response assessment methodologies, and utilizing advanced biologic data (e.g., omics) to inform risk assessments. Previously, at the Environmental Protection Agency (EPA) National Center for Environmental Assessment, she has served as the Senior Science Advisor to the Director, and the Research Triangle Park Division Director. In these positions, she was responsible for leadership, planning, and oversight of EPA's Integrated Science Assessments for the criteria air pollutants and Integrated Risk Information System (IRIS) assessments for high priority hazardous air pollutants, as well as the development of new risk assessment methodologies and policies. Before this, she was the Associate Director for EPA's National Health and Environmental Effects Research Laboratory and its matrix manager for the air pollution research program. In these positions, she has had extensive experience presenting to independent science advisory boards, including the Clean Air Scientific Advisory Committee (CASAC), the Science Advisory Board (SAB), and the National Academy of Sciences, as well as responding to comments. Additionally, she has served on a number of advisory panels, e.g., the National Academy of Sciences, World Health Organization, National Institutes of Health, Food and Drug Administration, and the National Association of Clean Air Agencies. Dr. Cote also has led several scientific delegations and taught extensively in South America, Asia, and the Middle East.

Cromar, Kevin

New York University

Dr. Kevin Cromar is the Director of the Air Quality Program at the Marron Institute of Urban Management at New York University (NYU). He is a member of the Utah Air Quality Board which functions as the primary air quality policy maker for the state. He currently serves as the air quality expert on the Transportation Coordinating Committee for the metropolitan planning organization serving northern Utah. An environmental epidemiologist by training, he has appointments as an associate professor in the departments of Population Health and Environmental Medicine at NYU School of Medicine. He received a B.S. in Neuroscience from Brigham Young University and an M.S. and Ph.D. in Environmental Health Science from New York University. Dr. Cromar is recognized as an expert in environmental health policy having previously served as a research fellow at NYU School of Law Institute for Policy Integrity and currently serves as the vice-chair on the Environmental Health Policy Committee for the American Thoracic Society. His translational health and policy work has led to improvements in transportation, energy, and health policy at the local level both in the U.S. and internationally. Dr. Cromar has published research on the health effects of ambient air pollution using a variety of study designs including ecologic studies, cohort studies, and animal toxicology studies. These studies have investigated a wide range of relevant health endpoints including cardiovascular, respiratory, neurological, metabolic and cancer endpoints. His research on air quality indices and risk communication has led to the development of health-based air quality indices used in Mexico City and as part of a global index created in conjunction with colleagues at the National Aeronautics and Space Administration (NASA) and United Nations Children's Fund (UNICEF). He has participated in, and served as organizing chair, of several international expert consultations on various air quality topics that have been supported by the World Health Organization (WHO), NASA, U.S. Environmental Protection Agency (EPA), National Institute of Environmental Health Sciences (NIEHS), and Centers for Disease Control and Prevention (CDC). He is a member of the NASA Health and Air Quality Applied Science Team (HAQAST) and in the last two years has been funded by multiple NASA awards to improve how satellite data can be used to improve exposure assessment and air quality management in the U.S. and internationally.

Cullen, Alison C.

University of Washington

Dr. Alison Cullen serves as the Daniel J. Evans Endowed Professor of Environmental Policy at the University of Washington Evans School of Public Policy and Governance, with adjunct appointments in the College of the Environment and the School of Public Health. She holds a B.S. in Civil/Environmental Engineering from MIT, and an M.S. and an Sc.D. in Environmental Health from Harvard University School of Public Health. Her research involves the analysis of environmental health risks, decision-making in the face of uncertainty, and the impact of climate change on wildfire, ground water systems and fisheries. Dr. Cullen is past president of the Society for Risk Analysis and is a 2016 National Science Foundation (NSF) Faculty Fellow in the Advanced Studies Program. Her research is published in numerous peer-reviewed articles and a book with co-author H.C. Frey entitled Probabilistic Techniques in Exposure Assessment: A Handbook for Dealing with Uncertainty and Variability in Models and Inputs. She teaches graduate level courses in quantitative methods and environmental policy, and mentors MPA and Ph.D. students. Dr. Cullen is the recipient of a U.S. EPA Region 10 Special Recognition in the Field of Air Toxics, the Chauncey Starr Award from the Society for Risk Analysis, and the Outstanding Young Scientist Award from the International Society of Exposure Assessment. Outside of academia, Dr. Cullen has served as a technical consultant and advisor to many groups, including the Health Effects Institute, the U.S. Consumer Product Safety Commission, the State of Washington's Department of Ecology, the Sloan Foundation and the Bill and Melinda Gates Foundation. She has also served on the U.S. EPA Chartered Science Advisory Board (SAB) (2016-2021), the U.S. EPA SAB Chemical Assessment Advisory Committee (CAAC 2016 - 2018) and was a member of the U.S. EPA Clean Air Scientific Advisory Committee's augmented panel on Sulfur Dioxide (2014 - 2018). Dr. Cullen's work has been supported in the past two years by the U.S. National Science Foundation, National Aeronautics and Space Administration (NASA), the Lenfest/PEW Charitable Trust, the Bill and Melinda Gates Foundation and the National Center for Atmospheric Research.

Eatough, Delbert

Brigham Young University

Dr. Delbert J. Eatough is a Professor of Chemistry, Emeritus at Brigham Young University. He received a B.A. in Chemistry and Ph.D. in Physical Chemistry, both from Brigham Young University. Dr. Eatough has been involved for over 35 years in the study of the atmospheric chemistry of anthropogenic emissions. Past studies have included the identification of the atmospheric processes which convert sulfur dioxide to fine particulate sulfate in the atmosphere, elucidation of the kinetics for these processes and the identification of sources which contribute to particulate sulfate in Class I Visibility Areas. Current or recent studies include identification of the composition of fine particulate material using semi-continuous monitors, the chemical characterization of organic particulate matter as a function of particle size using diffusion denuder technology, the semi-continuous measurement of particulate organic marker compounds, the chemical characterization of visibility impairing aerosols, development of light extinction budgets, including the elucidation of the effect of water on light scattering in sulfate and nitrate containing aerosols, source apportionment of both indoor and outdoor pollution, and development of analytical techniques for studying atmospheric chemistry. Dr. Eatough was previously a member the Clean Air Scientific Advisory Committee (CASAC) Ambient Air Monitoring and Modeling Subcommittee (AAMMS) and a consultant to the EPA Science Advisory Board Indoor Air Quality and Total Human Exposure Committee which reviewed the EPA/600/6-96/00F Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders report. He is a member of the editorial board for the Journal of the Air & Waste Management Association (A&WMA) and a Fellow Member of the Association. In 2010 he received the prestigious A&WMA Frank A Chambers Excellence in Air Pollution Control Award for his life-long contributions to atmospheric chemistry and pollution control.

Edwards, Rufus

University of California, Irvine

Dr. Rufus Edwards is Professor of Epidemiology in the program of Public Health at the University of California Irvine, where his research broadly focusses on human exposures to air pollution emissions and resultant health implications. These include populations in the industrialized world exposed to combustion byproducts from transportation, wildfires and tobacco smoke, and populations in less industrialized nations exposed to emissions from household solid fuel use for cooking and space heating. Dr Edwards has funding from the Tobacco Related Disease Research Program resulting from California voter approved Proposition 99, prior to which he was funded by the Environmental Protection Agency (EPA) Science To Achieve Results (STAR) program. Dr. Edwards was a member of the World Health Organization (WHO) Indoor Air Quality Guidelines Development Group (GDG) to establish air quality guidelines for household combustion sources, and was lead convening author for the evidence chapter on emissions from household solid fuel use. Dr. Edwards is a member of the European College of Expert Reviewers, co-chaired the climate working group and served on the Environment/Climate Advisory Committee for the Global Alliance for Clean Cookstoves. Dr. Edwards was air pollution consultant to United Nations Children's Fund (UNICEF) to address effects of air pollution from rapid urbanization on women and children's health in Ulaanbaatar Mongolia, Prishtinë Kosovo, and Myanmar. Dr. Edwards was also consultant to the WHO to develop the Household Energy Assessment Rapid Tool (HEART) to conduct rapid situational assessments and stakeholder mapping of a country's readiness to address access to clean energy technologies and has worked with the WHO Urban Health Initiative to identify evidence based strategies to reduce the burden of air pollution in Accra, Ghana, and Katmandu Nepal. Dr. Edwards has training in exposure measurement and assessment from Rutgers, the State University of New Jersey, and the University of Medicine and Dentistry of New Jersey (Ph.D.), where his research was part of the National Human Exposure Assessment Survey (NHEXAS). Dr. Edwards worked for the Finnish National Institute for Public Health analyzing adult air pollution exposures in Helsinki as part of the EXPOLIS project that evaluated air pollution exposures in 7 cities in Europe. Dr. Edwards was awarded the 2009 Joan M. Daisey Outstanding Young Scientist Award by the International Society of Exposure Science.

Felton, Henry (Dirk)

New York State Department of Environmental Conservation

Mr. Henry (Dirk) Felton is currently employed by the New York State Department of Environmental Conservation (NYSDEC) as a Research Scientist IV. He has a B.A. in Physics from Kenyon College, a M.S. in Environmental Engineering from Stevens Institute of Technology and he is also a Civil Engineer licensed in the State of New York. He has implemented the Particulate Matter (PM-2.5) Federal Reference Method (FRM) and speciation program in New York State and currently oversees the PM, Precursor Assessment Monitoring Station (PAMS) and air toxics monitoring programs. He has participated on several Clean Air Scientific Advisory Committee (CASAC) subcommittees and was on the recently dissolved PM Panel. Mr. Felton is also a member of the National Association of Clean Air Agencies (NACAA) Monitoring Steering Committee and was the President of his local public school's Board of Education.

Frampton, Mark W.

University of Rochester Medical Center

Dr. Mark W. Frampton is Professor Emeritus in Medicine in the Pulmonary and Critical Care division, at the University of Rochester Medical Center. Dr. Frampton holds an M.D. from New York University. His research career has been devoted to understanding the human health effects of exposure to air pollution, using human clinical studies. His work extends beyond pulmonary function effects to include airway inflammation, host defense, and cardiovascular effects. Dr. Frampton's laboratory was the first to conduct human clinical studies of ultrafine particles (smaller than 100 nm) and is one of three centers completing a joint study of the cardiovascular effects of ozone exposure in healthy older subjects, funded by the Health Effects Institute (HEI). Overall, these studies have helped to understand the physiological changes and pathways to adverse effects from air pollutant exposure, and have informed the Environmental Protection Agency (EPA) promulgation of rational ambient air quality standards. Funding for these studies has come from the National Institutes of Health (NIH), the EPA, HEI, and others. Dr. Frampton has served on numerous scientific review panels for the NIH, EPA, and other scientific funding organizations. He has served as Chair of the Environmental and Occupational Health Assembly of the American Thoracic Society, chaired a Task Force on Bioterrorism, and served as the first Chair of the Section on Bioterrorism. Dr. Frampton is a former member of the Science Review Committee for HEI. He participated in an HEI review panel on the health effects of traffic-related air pollution, and chaired an HEI Review Panel on ultrafine particles, which produced a recent HEI Perspectives, "Understanding the Health Effects of Ambient Ultrafine Particles." Dr. Frampton has served as a consultant to the EPA in developing and reviewing Integrated Scientific Assessments for criteria pollutants. He served as a member of the Chartered Clean Air Scientific Advisory Committee (CASAC) from 2018 – 2021, participating in reviews of the National Ambient Air Quality Standards (NAAQS) for particulate matter (PM) and ozone.

Fuller, Christina H.

Georgia State University School of Public Health

Dr. Christina H. Fuller is an Associate Professor of Environmental Health at the Georgia State University School of Public Health. Dr. Fuller received her M.S. degree and Sc.D. degree in Environmental Health from the Harvard School of Public Health and her B.S. degree in Environmental Engineering from Northwestern University. Dr. Fuller has been active in the air pollution field for over 15 years and specializes in human exposure assessment, epidemiology, health disparities and community-based research. Her expertise includes the characterization of criteria air pollutants, as well as extensive knowledge of ultrafine particles; estimating cardiovascular health effects; documenting disparities and social vulnerabilities; and testing exposure reduction technologies. Dr. Fuller has served on review panels for the National Institute of Environmental Health Sciences (NIEHS), the Health Effects Institute and the Natural Environment Research Council (United Kingdom). She is an Editorial Board Member of the International Journal of Environmental Research and Public Health (IJERPH) and is currently editing a special issue on air pollution within Africa and the African Diaspora. Dr. Fuller recently released a co-edited book titled Ambient Combustion Related Ultrafine Particles and Health, which compiles the state of the science of the very smallest particles. Within the past two years, Dr. Fuller has served as Principal Investigator (PI) of an NIEHS-funded research grant testing the effectiveness of air pollution mitigation through green infrastructure. In addition, she served as PI on a community-engaged research project measuring air pollution near marine ports funded by New York Community Trust/Friends of the Earth. She teaches courses on air pollution, environmental justice, and environmental health to both undergraduate and graduate students. Dr. Fuller is a member of the International Society of Environmental Epidemiologists (ISEE) and its Capacity Building and Education Subcommittee; the International Society of Exposure Science (ISES) and its 2021 Technical Organizing Committee; and the American Public Health Association.

Gordon, Terry

New York University School of Medicine

Dr. Terry Gordon holds the rank of Professor of Environmental Medicine at the New York University (NYU) School of Medicine. He holds a B.S. in Physiology, an M.S. in Toxicology from the University of Michigan, and a Ph.D. in Toxicology from Massachusetts Institute of Technology (MIT), and was appointed to the faculty of the Department of Environmental Medicine in 1989. He has served as an ad hoc member of grant review panels and/or site visit teams for National Institute of Environmental Health Sciences (NIEHS), National Institute of Allergy and Infectious Diseases (NIAID), National Coalition for Cancer Research, Department of Defense (DOD), Bureau of Mines, National Aeronautics and Space Administration (NASA), Health Canada, National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC), and the Environmental Protection Agency (EPA). Dr. Gordon is past Chair of the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) committee, a volunteer organization that publishes occupational exposure levels that are used as workplace safety guidelines throughout the world. Dr. Gordon's broad research interest is in inhalation toxicology. The major focus of his research lab is the identification and understanding of the role of susceptibility factors in the pathogenesis of the adverse pulmonary effects produced by inhaled environmental and occupational agents. Because inter-individual responses to inhaled particles and gases vary so greatly in both human subjects and test animals, Dr. Gordon has hypothesized that genetic, age, and sex susceptibility factors play a major role in environmental and occupational lung disease. Dr. Gordon also plays a major role in the particulate matter (PM) research program at NYU, and was among the first researchers to use concentrator technology to study the adverse cardiopulmonary effects of ambient PM. Dr. Gordon is an active member of the Society of Toxicology (SOT), and has served on the Program, Placement, Membership, and Awards Committees and as President of its Inhalation Specialty Section. He has served as a consultant/author to the EPA on issues of pulmonary toxicology related to the development of various documents, and served on EPA's Clean Air Scientific Advisory Committee (CASAC) Oxides of Nitrogen (NOx), PM, and Sulfur Oxides (SOx) Primary National Ambient Air Quality Standards (NAAQS) Review Panels. Dr. Gordon's current research, supported by National Heart, Lung, and Blood Institute (NHLBI), NIEHS, and National Cancer Institute (NCI), examines the adverse health effects of alternative tobacco products and underground subway air pollution. He is also the Director of NYU's NIEHS-supported Training Grant in Environmental Toxicology.

Grantz, David A.

University of California at Riverside, Kearney Agricultural Center

Dr. David Grantz is Plant Physiologist and Cooperative Extension Specialist, Emeritus. He worked for the United States Department of Agriculture (USDA)/Agricultural Research Service in Hawaii on water relations of sugarcane and coffee, and at the University of California on responses to ozone and particulate matter of cotton and other crops. Dr. Grantz has a M.Sc. in Botany and Plant Science from the University of California at Riverside, where he worked on water relations of cowpeas; and a Ph.D. in Plant Physiology from the University of Illinois at Urbana, where he worked on gas exchange, metabolism and biophysics of stomatal guard cells. He has been a post-doctoral fellow at Stanford University, a Golda Meier Fellow at Hebrew University of Jerusalem, and a visiting scholar at numerous foreign universities. He has expertise in plant and soil water relations; regulation of stomatal responses to light, water and humidity; impacts of ozone on plant growth, yield, and water relations; and interactions of particulate matter and plants. He has served on working groups on dust mitigation and ecological effects of dust. Recently he has been cooperating on studies of gas exchange and effects on climate change of silage production systems. He has received no funding during the last two years. Dr. Grantz has served as a member of several previous Clean Air Scientific Advisory Committee expert committees on particulate matter and on ozone and participated in numerous study panels of Environmental Protection Agency and California Air Resources Board on various aspects of air pollution. He is not currently a member of any professional societies.

Hand, Jenny

Colorado State University

Dr. Jenny Hand is Senior Research Scientist and Fellow at the Cooperative Institute for Research in the Atmosphere (CIRA) at Colorado State University. She obtained an M.S. and Ph.D. in Atmospheric Science from Colorado State University, and a double B.S. in physics and astronomy from the University of Kansas. She was awarded a postdoctoral fellowship in the Advanced Studies Program at the National Center for Atmospheric Research (NCAR) before coming to CIRA in 2003. Her research interests include characterizing the physico-chemical, radiative, and hygroscopic properties of atmospheric aerosols using techniques ranging from single-particle analysis to remote sensing. Her research also focuses on understanding the spatial and temporal variability of speciated aerosols across the United States by integrating data from large long-term U.S. monitoring networks such as the Interagency Monitoring of Protected Visual Environments (IMPROVE) network, EPA's Chemical Speciation Network (CSN), and the Environmental Protection Agency (EPA) Federal Reference Method (FRM) and Particulate Matter (PM10) networks. Other interests include investigating long-term trends in aerosols and visibility degradation in relation to emission reductions, and the role of fine dust, coarse mass, and smoke on the status and trends of the aerosol mass budget and visibility across the U.S. Since 2008, she has served as the principal investigator on a cooperative agreement between CIRA and the National Park Service to characterize visibility degradation at national parks, to provide analysis in support of EPA's Regional Haze Rule, and to perform regional air quality modeling to understand excess nitrogen deposition in remote regions across the United States. Dr. Hand has chaired and co-chaired committees of the Air and Waste Management Association and currently co-chairs the Atmospheric Processes Division.

Hopke, Philip

Clarkson University

Dr. 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 holds a B.S. in Chemistry from Trinity College, Hartford, CT, and an M.A. and Ph.D. in Chemistry from Princeton University. His research interests include: Chemical characterization of ambient aerosol samples; Characterization of source/receptor relationships for ambient air pollutants; Multivariate statistical methods for data analysis; Indoor air quality; Exposure and risk assessment; Emissions and properties of solid biomass combustion systems; and Experimental studies of homogeneous, heterogeneous, and ion-induced nucleation. Dr. Hopke is the past Chair of the Environmental Protection Agency (EPA) Clean Air Scientific Advisory Committee (CASAC), and has previously served on the EPA Science Advisory Board. Professor Hopke is a Past President of the American Association for Aerosol Research (AAAR), was a member of the more than a dozen National Research Council committees, and on their Board of Environmental Studies and Toxicology. He is a fellow of the International Aerosol Research Assembly (IARA), the American Association for the Advancement of Science, the American Association for Aerosol Research, and the Air and Waste Management Association. He is an elected member of the International Statistics Institute and the recipient of the two major international awards in chemometrics. Dr. Hopke is also a recipient of the AAAR David Sinclair Award and the IARA Fissan-Pui-TSI Award for International Research Collaboration. He served as a Jefferson Science Fellow at the U.S. Department of State during the 2008-09 academic year. He has been appointed to World Health Organization (WHO) Global Air Pollution and Health – Technical Advisory Group (GAPH-TAG) Expert Working Group on Interventions / Policies and the Expert Working Group on Methodologies for Source-Specific Burden of Disease. His current EPA funding is the Great Lakes Fish Monitoring and Surveillance Program that examines the presence of legacy and emerging contaminants in Great Lakes fish. He also has funding from the New York State Energy Research and Development Authority (NYSERDA) to analyze air pollution data from New York State. He is part of two Health Effects Institute (HEI) projects looking at particulate pollution and health outcomes in China and the U.S. and project looking at particulate pollution and fetal development, funded by the National Institute of Environmental Health Sciences.

Hughes, Brian

Michigan Department of Environment, Great Lakes and Energy

Dr. Brian J. Hughes has a bachelor's degree in Biochemistry and master's degree in Dairy Science from Michigan State University, MPH in epidemiology from the University of Alabama, and a doctorate in toxicology from Utah State University. In 1991, he served as Director, Risk Assessment and Toxicology Section in the Alabama Department of Public Health (Montgomery, AL) where he conducted human and environmental health assessments for hazardous waste sites. He has significant experience in pesticide and worker protection issues from his time at the Michigan Department of Agriculture. He provided environmental health and safety consulting to business units involved in the production of industrial chemicals used as food additives, pharmaceutical excipients, electronic materials, amines, oxygenated solvents, and intermediates. He was a Senior Principal Toxicologist at NSF International, a global public health organization conducting product safety assessments for drinking water contaminants, medical devices, and other consumer products. Currently, he serves as Toxicology Manager at the Air Quality Division for the Michigan Department of Environment. He has 25 years of experience in the public, private, academic, and state and federal government sectors assisting businesses in fulfilling national and international regulatory requirements. He has published peer-reviewed research in the areas of pesticide worker exposure, public health risk assessment, and modes of action. Dr. Hughes has served on industry panels for a wide range of chemical classes. He served on a U.S. EPA FIFRA Scientific Advisory Panel on "Worker Exposure Assessment Methods." Dr. Hughes is a board-certified toxicologist through the American Board of Toxicology. Dr. Hughes is a full member of the Society of Toxicology and the Toxicology Forum. He currently serves as an adjunct faculty in the Department of Animal Science at Michigan State University. There has been no research funding during the past 2 years.

Ibrahim, Muhammad

Government College University Faisalabad, Pakistan

Dr. Muhammad Ibrahim is Associate Professor of Environmental Science in the Department of Environmental Sciences and Engineering at Government College University Faisalabad, Pakistan. He has Bachelor's and Master's degrees in Soil Science and a Ph.D. in Soil and Environmental Sciences from the University of Agriculture, Faisalabad, Pakistan. He was awarded a prestigious South Korean postdoctoral fellowship to work with Dr. Sang Keun Ha. Dr. Ibrahim has expertise in environmental management, toxicology, atmospheric pollution, modeling, public health, risk assessment and statistics. His research includes measurement and modeling of problems related to soil-plant-atmosphere and human health impacts, heat stress, particulate pollution in urban and suburban environments. He has been principal or co-principal investigator for over 10 sponsored/funded research projects, and has published over 110 journal papers, 60 conference abstracts, 10 technical reports and 9 book chapters. Dr. Ibrahim's funding sources in the last few years include the International Environmental Research Institute (IERI)-Gwangju Institute of Science and Technology (GIST) South Korea, Higher Education Commission, Pakistan, International Center for Integrated Mountain Development (Nepal), the Wageningen University (WUR), etc. Dr. Ibrahim was a member of the editorial boards of reputed journals and served more than 5 years as editor. He chaired the International Centre for Integrated Mountain Development (ICIMOD) Committee in 2012 on hazardous materials. He has been a technical reviewer of various funding agencies including National Center of Science & Technology Evaluation, Ministry of Education & Science, Astana, Republic of Kazakhstan (since 2011). He is a reviewer of many Science Citation Index (SCI) journals and contributes in his capacity. He has been ranked at 3rd Most Productive Scientist (under 40) by Pakistan Council of Science & Technology in 2017 and included in Productive Scientists of Pakistan. He has been instrumental in organizing many seminars and conferences and symposia at the national and international levels. Dr. Ibrahim has been among the few Pakistani scientists working on atmospheric pollution and field observation. He has a good record of collaboration with fellow scientists in the developed world. He does have membership of many professional societies related to his work.

Jayjock, Michael

Jayjock Associates, LLC

Dr. Michael Jayjock is an independent consultant who retired as a Senior Research Fellow from the Rohm and Haas Company where he worked for 35 years. During his employment his responsibilities included development and management of all aspects of exposure assessment and mathematical modeling projects in the service of product safety. He developed interests and expertise in modeling the nature of indoor pollution by experimentally and theoretically characterizing sources and loss mechanisms. Dr. Jayjock has been an active participant on the committees of the American Industrial Hygiene Association; the U.S. Environmental Protection Agency (EPA) Science Advisory Committee On Chemicals (SACC) Peer Review Risk Evaluation for Asbestos and 1, 4 Dioxane (2019-2020); the U.S. EPA Science Advisory Board (SAB), COVID-19 Review Panel (2020); the U.S. EPA SAB Scientific and Technological Achievement Awards (STAA) Committee (2019- 2021); the 2018 U.S. EPA peer review panel for the Draft Exposure and Use Assessment for Five Persistent Bioaccumulative Toxic (PBT) Chemicals; the 2016 U.S. EPA peer review panel for Draft Guidelines for Human Exposure Assessment; the 2014 U.S. Department of Energy (DOE) Hanford Tank Vapor Assessment Team; the 2013 U.S. EPA peer review panel for the Draft Risk Assessment for Trichloroethylene (TCE)/Degreaser Arts/Crafts Uses; the 2011 U.S. EPA Science Advisory Panel on Lead Exposure; the 2008 U.S. EPA Peer Consultation Panel for Perfluorooctanoic Acid (PFOA) Site-Related Environmental Assessment Program; the 2005 U.S. EPA Board of Scientific Counselors Peer Review Panel for the Office of Research and Development Science Program; the 2002 U.S. EPA Human Health Research Strategy Panel; a member of or consultant to the 1998-2003 U.S. EPA SAB – Integrated Human Exposure Committee (IHEC). He has also been a member of three subcommittees of the U.S. National Academy of Sciences. He is not currently a recipient of research grants from the Environmental Protection Agency, other federal agencies, or the private sector.

Kadlec, Matthew

Washington Department of Ecology

Dr. Matt Kadlec is a Senior Toxicologist in the Washington State Department of Ecology Air Quality Program. He holds a B.Sc. in biology and a Ph.D. toxicology from the University of Mississippi. His areas of expertise include human health risks of toxic air pollutants and particulate matter from biomass and diesel combustion. He has several ongoing research efforts on population-level effects of smoke from forest fires and residential wood-burning. He collaborates on the Interagency Joint Fire Science Program-funded Air Indicator Report for Public Awareness and Community Tracking (AIRPACT)-Fire Project for Enhanced Communication of Human Health Risk with Improved Wildfire Smoke Modeling; and with state government support on analysis of wildfire smoke-associated health insurance claims and short-term mortality rates in Washington. He serves on several science advisory committees - multi-agency ones include the Washington State Air Hazard Indexes Workgroup to resolve discrepancies between the Federal Air Quality Index and the Washington Air Quality Advisory; the Washington Wildfire Smoke Events Coordination Group; the Health Risk and Decisions Expert Group on overlapping impacts of wildfire smoke and COVID-19 and precautionary closures of schools and outdoor events; and the Washington Department of Labor & Industries Air Contaminants and Respirators Rule Workgroup and Occupational Wildfire Smoke Exposure Rule Development Stakeholders group. He is a member of the Society of Toxicology and of the International Society of Exposure Science.

Kaufman, Joel

University of Washington

Dr. Joel Kaufman is a physician-epidemiologist, board-certified in internal medicine and occupational medicine. He has been a full-time faculty member at the University of Washington (UW) since 1997, currently holding appointments as a Professor in the Departments of Environmental & Occupational Health Sciences, and Medicine (General Internal Medicine), and Epidemiology. He also serves as the Director of the UW Center for Exposures, Diseases, Genomics and Environment (EDGE Center) which is supported by the National Institute of Environmental Health Sciences (NIEHS). Dr. Kaufman's work integrates epidemiology, exposure sciences, toxicology, and clinical medicine. His current research activities are primarily focused on environmental factors in chronic disease, including cardiovascular disease, diabetes, and brain aging. He is the principal investigator of a major epidemiological prospective cohort study of air pollution and cardiovascular disease (The Multi-Ethnic Study of Atherosclerosis and Air Pollution, or "MESA Air"). He directs a facility customized for experimental inhalation toxicology studies on health effects of air pollutants. Since early 2020, Dr. Kaufman has served as editor-in-chief of Environmental Health Perspectives, a leading environmental health journal published by the National Institute of Environmental Health Sciences. A Fellow of the American College of Physicians, the American Heart Association, and the American College of Occupational and Environmental Medicine, Dr. Kaufman is an author of more than 250 peer-reviewed papers and is an elected member of the National Academy of Medicine. He has previously served on Clean Air Scientific Advisory Committee (CASAC) panels convened for Carbon Monoxide, Oxides of Nitrogen, and Particulate Matter.

Kavouras, Ilias

City University of New York

Dr. Ilias Kavouras is Professor of Environmental Health at City University of New York (CUNY) Graduate School of Public Health and affiliated faculty at the Environmental Sciences Initiative at CUNY Advanced Science Research Center. He holds an B.Sc. and Ph.D. in Chemistry for the University of Crete in Greece. Dr. Kavouras's research and scholarly interests are on the nexus of chemical, environmental and health sciences with the overall aim to understand the health effects impacts of atmospheric pollution with emphasis on the chemistry and fate of particulate matter, its sources and precursors and the coupling with climate. Recent areas of research involve novel nuclear spectrometric and chromatographic methods to characterize mixtures of organic compounds in environmental media and biospecimen, the effects of heat and resultant air pollution on heat stress in urban areas and childhood asthma in minority communities. Research activities the past two years have been funded by Professional Staff Congress (PSC) CUNY, CUNY Office of Research and Harvard University. He is the 2021 inductee to the Delta Omega public health honorary society and received awards for publications and mentoring. Dr. Kavouras is a member of the Centers for Disease Control and Prevention (CDC) and Public Health Institute Consortium of Universities for Global Health and on the Editorial Board of Atmosphere. He has been plenary or keynote speaker to scientific conferences. Dr. Kavouras has published over 80 peer-reviewed journal articles and book chapters. He has served as a reviewer for federal and international agencies, including United States National Academies of Sciences, Engineering, and Medicine, U.S. Environmental Protection Agency, the National Institute of Environmental Health Sciences, National Science Foundation, European Research Council and Agence Nationale de Sécurité Sanitaire de l'alimentation, de l'environnement et du travail (ANSES).

Khubchandani, Jagdish

New Mexico State University

Dr. Jagdish Khubchandani is a Professor of Public Health at New Mexico State University. He received his Doctorate in Clinical Medicine from DAVV University in India, Master's in Public Health from Western Kentucky University, and Ph.D. in Health Education and Epidemiology from University of Toledo. Within the past decade, he has mentored and taught over 500 students pursuing undergraduate and graduate degrees in the field of public health, nursing, or medicine. During this time, he has also coauthored more than 150 research articles in prestigious journals such as the Lancet, Journal of American Medical Association, and the New England Journal of Medicine with emphasis on global health, social epidemiology, and injury and violence prevention. More recently, his research has received widespread attention from prominent media outlets such as Fox News, MSN, Bloomberg News, Chicago Tribune, Wall Street Journal, and Huffington Post. Dr. Khubchandani has also served as an elected Director of the World Association of Medical Editors.

Kipen, Howard

Rutgers University

Dr. Howard Kipen received a B.A. from University of California, Berkeley, an M.D. from University of California, San Francisco, and an M.P.H. from Columbia University. He completed an internal medicine residency at Columbia Presbyterian Medical Center in New York and an Occupational and Environmental Medicine fellowship at Mount Sinai in New York. Dr. Kipen is currently Professor of Environmental and Occupational Health at the Rutgers School of Public Health and has been at Rutgers for over 30 years. He is also Director of the Division of Clinical Research and Occupational Medicine, of the Rutgers Environmental and Occupational Health Sciences Institute (EOHSI). He also directs the Integrated Health Sciences Facility Core of EOHSI providing support for clinical research, particularly controlled human exposure studies, funded by the National Institutes of Health (NIH). He has authored over 200 scientific articles, book chapters and reviews on topics in environmental and occupational health, many on the health effects of air pollutants, both indoor and outdoor. Since, 2004, he has directed human mechanistic biomarker and air pollution studies in Beijing (Olympics), Chongqing/Reading (UK), and the U.S. to understand how air pollutants affect cardiovascular and respiratory health. He was Principal Investigator (PI) on an Environmental Protection Agency (EPA) indoor air study that examined climate change impacts on air pollution and the use of indoor air cleaners to reduce health risks. He also directs a NIH field study on the use of portable air cleaners to reduce viral aerosol levels in homes of newly infected patients. He has served on or chaired a number of committees at the National Academy of Medicine/National Academy of Sciences, NIH, Department of Veterans Affairs, American Thoracic Society (ATS), and Department of Defense. From 2009 to 2016, he chaired the National Aeronautics and Space Administration (NASA) Standing Review Panel on Advanced Environmental Health and Food Technology. He is a member of the National Academies Standing Committee on Medical and Epidemiological Aspects of Air Pollution on U.S. Government Employees and their Families and serves on the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) committee to revise its carbon dioxide position document. He chaired the ATS Scientific Assembly on Environmental, Occupational and Population Health from 2017-2019. His current research focuses on how carbon dioxide (CO_2) might actually function as a neurotoxin, how portable air cleaners may reduce COVID transmission, and how "burn pits" may have injured U.S. troops in South Asia.

Kleinman, Michael T.

University of California, Irvine

Dr. Michael T. Kleinman is an Inhalation Toxicologist and Professor in the Department of Environmental and Occupational Health in the University of California, Irvine (UCI) College of Health Sciences, with joint appointments in the Department of Medicine and the Program in Public Health. He was previously an environmental scientist for the U.S. Atomic Energy Commission (AEC) and the director of the Aerosol Exposure and Analytical Laboratory at Rancho Los Amigos Hospital in Downey, CA. He holds a M.S. in Chemistry (Biochemistry) from the Polytechnic Institute of Brooklyn and a Ph.D. in Environmental Health Sciences from Institute of Environmental Medicine of New York University. He currently is the Co-Director of the Air Pollution Health Effects Laboratory at UCI. He has published more than 145 peer-reviewed journal articles on effects of environmental contaminants on cardiopulmonary and immunological systems and on global and regional distribution of toxic environmental materials including heavy metals and radioactive contaminants from nuclear weapons testing. His current research focuses on the effects of inhaled particles on the heart and brain to develop better understanding how these effects are mediated by toxic metals, organic constituents and elemental carbon components of inhaled substances. Funding for Dr. Kleinman's research is from grants from the California Health Effects of Air Pollution Foundation, the California Air Resources Board and the National Institutes of Health. Dr. Kleinman has served on several Clean Air Scientific Advisory Committee (CASAC) panels (Particulate Matter, Ozone, Nitrogen Oxides) and is a member of the Environmental Protection Agency (EPA) Board of Scientific Counselors Air and Energy (AE) Subcommittee, has formerly served on the STAA panel, is a member of the Scientific Review Panel for Toxic Substances for the state of California and is the Vice-Chair of the Science Advisory Council for the Bay Area Air Quality Management District.

Koutrakis, Petros

Harvard T.H. Chan School of Public Health

Dr. Petros Koutrakis is a Professor of Environmental Sciences in the Environmental Health Department at the Harvard T.H. Chan School of Public Health (HSPH). He holds a B.S. degree in Chemistry from the University of Patras, Greece. He holds an M.S. degree in Atmospheric Chemistry and a Ph.D. degree in Environmental Chemistry from the University of Paris, France. Dr. Koutrakis was a doctoral researcher from 1980-1984 in the Atmospheric Physical Chemistry Laboratory at the University of Paris. From 1984-1985 he was a post-doctoral researcher at the Energy and Environmental Policy Center, Kennedy School of Government, Harvard University. He was a Lecturer/Research Associate from 1986-1988 in the Department of Environmental Science and Physiology at HSPH. From 1988-1991, he was an Assistant Professor of environmental sciences in the Department of Environmental Sciences. Dr. Koutrakis was an Associate Professor and Director of the Environmental Chemistry Laboratory, Department of Environmental Health from 1991-1995. In 1995, he was promoted to Professor of Environmental Sciences. From 2003-2012, he served as the Director of the Exposure, Epidemiology & Risk Assessment Program at HSPH. Dr. Koutrakis was Director of the HSPH-Cyprus Program for the Environment and Public Health from 2004-2014. Since 1999, Dr. Koutrakis has served as Director of the Environmental Protection Agency (EPA)-Harvard Particulate Matter Research Centers. He was the Technical Editor-in-Chief, Journal of Air & Waste Management Association from 1994-2003. Dr. Koutrakis was the winner of the 2018 Excellence in Exposure Science Award from the International Society of Exposure Science. He was the winner of the 2020 Lyman A. Ripperton Award from the Air Waste & Management Association, for distinguished achievement as an educator in the field of air pollution control. Recent funding sources include the EPA, National Institutes of Health, the Department of Veterans Affairs, and the National Aeronautics and Space Administration.

Kuminoff, Nicolai

Arizona State University

Dr. Nicolai Kuminoff is an Associate Professor in the Economics Department at Arizona State University and a Research Associate at the National Bureau of Economic Research. His research aims to infer consumer preferences for non-market amenities from their purchases in markets for housing, labor, health care and other goods and services. His recent research projects include developing satellite accounts for non-market expenditures on local environmental amenities, predicting the distributional welfare effects of choice architecture policies, examining how long term air pollution exposures affects morbidity and mortality among older adults, and estimating the private values that older adults place on reducing their morbidity and mortality risks. Dr. Kuminoff's research has been funded by the U.S. Environmental Protection Agency, the National Institute of Aging, and the National Science Foundation, and published in journals such as the American Economic Review, International Economic Review, Journal of Economic Literature, Journal of Environmental Economics and Management, Review of Environmental Economics and Policy, Land Economics, Environmental and Resource Economics, Proceedings of the Royal Society-B, Ecohealth, PLOS ONE, and Water Resources Research. He currently serves as Secretary for the Association of Environmental and Resource Economists, Co-Editor at the Journal of the Association of Environmental and Resource Economists, and as an editorial board member at the Journal of Environmental Economics and Management and at the Review of Environmental Economics and Policy. Dr. Kuminoff obtained a Ph.D. in Economics from North Carolina State University (2006) and M.S. (2000) and B.S. (1999) degrees in Agricultural and Natural Resource Economics from the University of California, Davis.

Lange, Sabine

Texas Commission on Environmental Quality

Dr. Sabine Lange is the section manager for the Toxicology, Risk Assessment, and Research Division at the Texas Commission on Environmental Quality (TCEQ). Dr. Lange's responsibilities include overseeing health effects risk assessments of air permit applications, ambient air monitoring projects, and hazardous waste sites; overseeing the development of chemical toxicity factors; and conducting and overseeing systematic reviews and independent analyses of risk assessments. Dr. Lange serves as a technical resource for the State and citizens of Texas for human health and environmental risk assessment, especially related to air and water quality. Dr. Lange's research interests include the toxicology and risk assessment of criteria air pollutants, and risk assessment methods used for derivation of toxicity factors. In these areas she has published articles, given invited talks, presented posters, and served as a workshop panel member. On behalf of the TCEQ, Dr. Lange has intensively reviewed the documents released by the U.S. Environmental Protection Agency (EPA) on the National Ambient Air Quality Standards (NAAQS) for ozone, particulate matter, sulfur dioxide, nitrogen dioxide, and lead. She is also a former member of the U.S. EPA's chartered Clean Air Scientific Advisory Committee (CASAC), and she has served as a peer reviewer for EPA on a Science Advisory Board panel reviewing an EPA report on reduced form tools for estimating air quality benefits, as well as on a panel reviewing chemical hazard assessments for regulations under the Toxic Substances Control Act. Dr. Lange's work since joining TCEQ has been entirely funded by the State of Texas. Dr. Lange received a Bachelor's degree in biochemistry from the University of Western Ontario in Canada, and completed a Ph.D. and post-doctoral training in biochemistry and molecular carcinogenesis at the University of Texas at Houston and MD Anderson Cancer Center. Dr. Lange is a Diplomate of the American Board of Toxicology.

Lanphear, Bruce

Simon Fraser University

Bruce Lanphear, M.D., M.P.H., a Professor at Simon Fraser University and Investigator at BC Children's Research Institute in Vancouver, British Columbia, is a board-certified physician in public health and preventive medicine. He has expertise in pediatric research, population health, exposure assessment, dose-response relationships, and epidemiology. Dr. Lanphear is the founding principal investigator for an ongoing 400-person cohort study in Cincinnati and a co-principal investigator for an ongoing 600-person cohort study in Canada to examine the impacts of gestational and childhood exposures to a wide array of chemicals and various health outcomes in children. He has conducted over 200 studies to quantify exposures to toxic chemicals, including lead, per- and polyfluoroalkyl substances (PFAS) and air pollution, and their health impacts. He has also conducted numerous randomized controlled trials to reduce children's exposures to toxic chemicals, including lead, phthalates and air pollution. Over the past 25 years, Dr. Lanphear led key studies used by federal agencies to set lead standards for water, air and dust, and to conclude that there is no safe level of lead in blood. His ongoing research is focused on how toxic chemicals, including lead, fluoride and air pollution, elevate the risk for cognitive deficits or autism. Dr. Lanphear was a member of the North American Commission for Environmental Cooperation Expert Panel on Children's Health and the Environment (2001-2003), the U.S. Environmental Protection Agency (EPA) Clean Air Scientific Advisory Committee (CASAC) Lead National Ambient Air Quality Standards (NAAQS) Review Panel (2006-2008), the American Academy of Pediatrics Committee on Environmental Health (2011- 2016), the National Toxicology Program's Panel on Lead Toxicity (2012), and the Lancet Commission on Pollution and Health (2016-present). He served as a member or reviewer for several National Academies of Science reports. Over the past two years, Dr. Lanphear's research was funded by the National Institutes of Health, the Department of Housing and Urban Development, and the Canadian Institutes of Health Research.

Lee, Alison

Icahn School of Medicine at Mount Sinai

Dr. Alison Lee is a physician-scientist and an Associate Professor of Medicine in the Division of Pulmonary, Critical Care and Sleep Medicine at the Icahn School of Medicine at Mount Sinai. Dr. Lee graduated with Honors from Brown University and received her medical degree from the University of Massachusetts Medical School and a Master of Science in Epidemiology from Columbia University Mailman School of Public Health. Dr. Lee completed internal medicine residency training at New York University and pulmonary, critical care and sleep medicine fellowship at Columbia University. Currently and in the past two years, Dr. Lee has been the Principal Investigator of three National Institutes of Health (NIH) grants, including a K23 Early Career Award and R21 and R01 grants, and is a co-investigator on additional NIH-funded research. Dr. Lee has served on the Scientific Advisory Committees of the American Thoracic Society and Chest Foundation to recommend research funding priorities and currently serves on the American Thoracic Society Environmental Health Policy Committee to advise on environmental health policy and priorities. Dr. Lee's research focuses on the role of ambient and indoor sources of air pollution, alone or in conjunction with social risk factors, in explaining health risk and health disparities. Dr. Lee is particularly interested in understanding how environmental influences in early life increase risk for future, chronic disease. Specifically, Dr. Lee's research has identified the in utero and early childhood periods as key windows of susceptibility to air pollution exposures and demonstrates the importance of more comprehensively considering joint exposures. Building on these prior observations, Dr. Lee leads efforts to explore mechanisms mediating these associations to support a causal association between early life air pollution exposures and child health.

Lovinsky-Desir, Stephanie

Columbia University

Dr. Stephanie Lovinsky-Desir is Assistant Professor of Pediatrics and Environmental Health Sciences and the Director of the Pediatric Pulmonary Division at Columbia University Irving Medical Center. She completed her general pediatrics training at the Children's Hospital of Montefiore in the Social Pediatrics program and her pediatric pulmonary fellowship at New York Presbyterian – Columbia University. Her research is focused on understanding how environmental factors impact children with asthma, particularly in urban and minority communities. Dr. Lovinsky-Desir's multidisciplinary approach to studying urban environmental asthma has led to fruitful collaborations throughout several schools at Columbia including the School of Medicine, the School of Public Health, the School of Nursing, and the Lamont Doherty Earth Observatory. Her current work is funded by the National Institutes of Health - National Heart, Lung, and Blood Institute (NHLBI) and National Institute of Environmental Health Sciences (NIEHS), the Robert Wood Johnson Foundation through the Amos Medical Faculty Development Award, and the Driscoll Children's Scholar Fund. She is an elected member of the Society for Pediatric Research and in 2019 was recognized by the journal Pediatric Research for the Early Career Investigator Spotlight. She is also the recipient of the 2019 American Society for Clinical Investigation Young Physician-Scientist Award and the 2021 Robert B. Mellins, MD Outstanding Achievement Award from the Pediatric Assembly of the American Thoracic Society (ATS). Dr. Lovinsky-Desir is also very active in the American Thoracic Society as a member of several committees within the Pediatric Assembly including the Programming Committee, Advocacy Committee, Diversity and Inclusion Working Group and Nominating Committee as well as the ATS Health Equity and Diversity Committee.

Martien, Philip

Bay Area Air Quality Management District

Dr. Philip Martien is the Director of the Assessment, Inventory, and Modeling (AIM) Division at the Bay Area Air Quality Management District (BAAQMD). He is a national leader in addressing environmental injustice in air pollution exposure. He has been working with communities and stakeholders on this issue for 15 years. He is respected and trusted by community advocates and his team has developed the most precise and sophisticated methods for apportioning exposure to air pollution at the community scale. Key strengths he brings are the abilities to bridge theoretical science and applied solutions and to adopt agency policies to better address lived community concerns. Dr. Martien has over three decades of experience applying and evaluating regional meteorological and photochemical models to inform State Implementation Plans. He implemented the first adjoint sensitivity analysis method in a three-dimensional photochemical model and used this and other advanced methods to evaluate the efficacy of emissions control alternatives. He served as a member of the California Environmental Protection Agency's (CalEPA) Cumulative Impacts and Precautionary Approaches Work Group, which reviewed development of the first version of CalEnviroScreen, a mapping tool to identify the most overburdened communities in the California. He partnered with the City and County of San Francisco's Department of Public Health and Planning Department to develop mapping tools to identify Air Pollution Exposure Zones now used to inform housing and development requirements, including requirements for indoor filtration in new multi-family housing. Dr. Martien was an invited speaker and Work Group participant at the Environmental Justice and Climate Policy Solutions Dialogue convened by University of California (UC) President Janet Napolitano to identify strategies to achieve California's greenhouse gas reduction goals, while addressing environmental justice concerns. This dialogue informed the State Legislature's development of California Assembly Bill (AB) 617 that requires air districts to identify disadvantaged communities and adopt community emissions reduction programs. A recent focus of his work at BAAQMD has been evaluating health impacts from air pollution in support of AB 617 and conducting equity-based assessments to examine how air pollution exposures are distributed by race and ethnicity in Bay Area communities.

Mazurek, Monica

Rutgers University

Dr. Monica Mazurek works on air quality engineering, analytical methods for organic compounds in environmental and chemical engineering processes, and organic geochemistry of earth materials. Dr. Mazurek focuses on controlling energy-related emissions, renewable energy, and zero carbon reduction scenarios. As a contributor to the 1994 Intergovernmental Panel on Climate Change (IPCC) Assessment Report, she and IPCC colleagues share with Albert Arnold (Al) Gore Jr., the Nobel Peace Prize for 2007 "for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change." Dr. Mazurek received the 2001 Haagen-Smit Award and the 2007 Haagen-Smit Award for papers she co-authored on molecular composition, modeling, and source attribution of atmospheric fine particles. The award recognizes benchmark contributions to atmospheric chemistry and air quality research. She is an Associate Professor in the Civil and Environmental Engineering Department in the School of Engineering at Rutgers University.

McNeill, V. Faye

Columbia University

Dr. V. Faye McNeill is a Professor in the Department of Chemical Engineering and the Department of Earth and Environmental Sciences at Columbia University. She is also an associate member of the Earth Institute Faculty and Principal Investigator of the Columbia University Clean Air Toolbox for Cities Initiative. She joined Columbia in 2007 and received tenure in 2014. She received her B.S. in Chemical Engineering from the California Institute of Technology (Caltech) in 1999 and her Ph.D. in Chemical Engineering from the Massachusetts Institute of Technology (MIT) in 2005, where she was a National Aeronautics and Space Administration (NASA) Earth System Science Fellow. From 2005-2007 she was a postdoctoral scholar at the University of Washington Department of Atmospheric Sciences. She received the National Science Foundation (NSF) Faculty Early Career Development Program (CAREER) and the American Chemical Society (ACS) Petroleum Research Fund Doctoral New Investigator awards in 2009. She was the recipient of the Kenneth T. Whitby Award of the American Association for Aerosol Research (AAAR) in 2015 and the Mellichamp Emerging Leaders lecturer at the University of California, Santa Barbara in 2018. She is the Associate Editor in charge of Atmospheric Chemistry for ACS Earth and Space Chemistry. She was a co-editor of Atmospheric Chemistry and Physics from 2007-2017. She has served in multiple elected officer positions in American Institute of Chemical Engineers (AIChE), AAAR, and American Geophysical Union (AGU). She is an appointed member of the International Union of Pure and Applied Chemistry (IUPAC) panel on kinetic data evaluation and the ACS Committee on Environmental Improvement.

Mendoza, Jean

Friends of Toppenish Creek

Ms. Jean Mendoza is the Executive Director for the Friends of Toppenish Creek (FOTC), a 501(c)(3) non-profit group located on the Yakama Reservation in South Central Washington State (WA). She is a masters prepared registered nurse (retired) with graduate studies in public health and policy. Her area of expertise is air and water pollution from concentrated animal feeding operations (CAFOs). She served for seven years on the Lower Yakima Valley Groundwater Management Area Advisory Committee addressing groundwater problems. FOTC conducts air and water research with funding from the Columbia Riverkeepers and the Yakama Nation. Ms. Mendoza participates in community engagement regarding air pollution in Yakima County, WA where levels of fine particulate matter are high due to ammonia emissions from industrial dairies. Through FOTC she encourages and assists the WA State Department of Ecology and the Yakima Regional Clean Air Agency (YRCAA) to better protect the health of the multi-cultural communities that share the Yakima Valley. She has served on the YRCAA Agricultural Task Force and the YRCAA Dairy Work Group. She has testified before the legislature on environmental justice (EJ). She informs the public and policy makers about EJ at ground level and helps the victims of pollution to access assistance.

Nethery, Rachel

Harvard T.H. Chan School of Public Health

Dr. Rachel Nethery is an Assistant Professor of Biostatistics at the Harvard T.H. Chan School of Public Health. Prior to her current role, she received her Ph.D. in Biostatistics from the University of North Carolina at Chapel Hill and completed a postdoctoral fellowship in Biostatistics at Harvard under Dr. Francesca Dominici. The focus of her research is on the development of statistical methods for environmental epidemiology. In particular, her recent work centers on (1) methods for estimation of the health impacts of complex environmental regulations and quasi-experiments and (2) methods for studying the impacts of climate, heat, and natural disasters on health and predicting the health impacts of future extreme climate events. Her methodological expertise is in causal inference, space-time modeling, machine learning, latent variable models, and Bayesian methods. Her recently published work includes a study quantifying the health impacts of the 1990 Clean Air Act Amendments in the Medicare population and an early investigation of the association between fine particulate matter exposure and COVID-19 mortality. She is the recipient of a K01 career development award from the National Institute of Environmental Health Sciences to develop causal inference methods for investigating links between environmental exposures and childhood cancer. Her research over the past two years has also been funded by the National Institute of Child Health and Human Development, the National Institute on Aging, the Health Effects Institute, and the Harvard Data Science Initiative. She currently serves on the Regional Advisory Board for the Eastern North American Region of the International Biometric Society (ENAR) and as an Advisory Committee member for Women in Data Science- Cambridge.

Ng, Nga (Sally)

Georgia Institute of Technology

Dr. Nga Lee (Sally) Ng is an associate professor and Tanner Faculty Fellow in the School of Chemical & Biomolecular Engineering and the School of Earth & Atmospheric Sciences at the Georgia Institute of Technology. She earned her doctorate in Chemical Engineering from the California Institute of Technology and was a postdoctoral scientist at Aerodyne Research Inc. Dr. Ng's research focuses on the understanding of the chemical mechanisms of aerosol formation and composition, as well as their health effects. Her group combines laboratory chamber studies and ambient field measurements to study aerosols using advanced mass spectrometry techniques. Dr. Ng has published over 130 journal papers and has been named among the world's most Highly Cited Researchers by Clarivate Analytics. Dr. Ng's funding sources in the last two years include the National Science Foundation, the National Oceanic and Atmospheric Administration, and the Centers for Disease Control and Prevention. Dr. Ng serves as a co-editor of Atmospheric Chemistry and Physics and a member of the Editorial Board of Nature Scientific Reports, and American Chemical Society (ACS) Earth and Space Chemistry. Dr. Ng served as Chair of Environmental Division for the American Institute of Chemical Engineers (AIChE) in 2020, and served as the Conference Chair for the 37th American Association for Aerosol Research (AAAR) conference in 2019. Dr. Ng's research contribution has also been recognized by the Sheldon K. Friedlander Award and the Kenneth T. Whitby Award from the American Association for Aerosol Research, the Environmental Protection Agency (EPA) Early Career Award, the Health Effects Institute Walter A. Rosenblith New Investigator Award, and the National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award.

Pace, Matthew

Arizona Department of Environmental Quality

Dr. Matthew Pace has a Ph.D. in Meteorology/Climatology from Arizona State University. He is currently employed at the Arizona Department of Environmental Quality (ADEQ) as an air quality meteorologist. In this role, he forecasts air quality across Arizona including ozone and particulate matter (PM-10 and PM-2.5), produces wildfire smoke forecasts, is the lead meteorologist for the ADEQ smoke management program, and provides support for other critical tasks within air quality. These tasks include providing a detailed weather/air quality analysis for screening ozone and PM-10 exceptional event demonstrations, examining patterns that can result in lead and sulfur dioxide (SO2) exceedances in the Miami-Globe/Hayden area, and reviewing/recommending revisions to pertinent air quality rules. Dr. Pace was also the project lead for developing the air quality forecasts that are produced by ADEQ which shows forecasted ozone, PM-10, and PM-2.5 concentrations at the hourly time-scale, allowing residents to make the most informed decisions about their day. He also led the development and launch of the first state wildfire smoke forecast in the nation, which provides communities with early information about wildfire smoke impacts while giving federal and state land managers a tool they can use during wildfires. His research interests, in part, are in localized smoke impacts from prescribed fire/wildfire, dust storm classification, and ozone formation/movement/climatology across Arizona and the southwestern portion of the United States. His ongoing work includes: (1) how teleconnections, El Nino Southern Oscillation (ENSO), Pacific Decadal Oscillation (PDO), North Atlantic Oscillation (NAO), etc. influence ozone concentrations in Arizona, (2) developing a classification system for dust storms that impact Phoenix in order to be able to examine intensity over time, (3) investigate the potential for weather watch-outs that may lead to significant reduction in visibility on roadways due to wildland fire smoke, and (4) continuing to explore the impact the pandemic had on ozone and ozone precursors. Prior to these studies, Dr. Pace was also on the research team that examined international and interstate transport of ozone into Yuma, Arizona. He has published seven other papers related to meteorology/climatology. Dr. Pace is an effective problem solver, communicator, and not afraid to ask questions and works to get results. He serves on several committees, including the Western States Air Resources Council (WESTAR) smoke group, which has worked with the Western States and Federal/State Land Managers concerning prescribed fire. Dr. Pace is also the co-president of the Central Arizona Chapter of the American Meteorological Society (AMS). He is also an active member in the Drought Interagency Coordinating Group lead by the Arizona Department of Water Resources. As can be seen, with a wide-range of skills and interests Dr. Pace is a dynamic and driven participant in any project or group.

Pacheco, Susan E

University of Texas McGovern Medical School

Susan E. Pacheco M.D. M.S., Fellow of the American Academy of Pediatrics (FAAP), Fellow of the American Academy of Allergy, Asthma and Immunology (FAAAAI), is Professor of Pediatrics, specialized in Allergy and Immunology at The University of Texas McGovern Medical School in the Texas Medical Center in Houston. She earned her medical degree at the University of Puerto Rico Medical School, and completed her pediatric residency at Baylor College of Medicine in Houston, Texas. This was followed by a fellowship in Allergy and Immunology and a second fellowship in Clinical Laboratory Immunology, both at Baylor College of Medicine in Houston, Texas. Dr. Pacheco's area of expertise is in allergy and immunology, in particular on the effects of air pollution in pediatric health. She served in the American Academy of Pediatrics (AAP), Executive Committee for the Council on Environmental Health for 6 years and is currently member of the Environmental Exposures and Respiratory Health Committee with the American Academy of Allergy, Asthma and Immunology. Dr. Pacheco co-authored the AAP's 2015 policy statement about climate change and children's health and collaborates with the AAP in issues pertaining to indoor and outdoor air quality and climate change.

Peden, David

University of North Carolina at Chapel Hill

David B. Peden, M.D., M.S., Fellow of the American Academy of Allergy Asthma and Immunology (FAAAAI), is the Andrews Distinguished Professor of Pediatrics, Medicine & Microbiology/Immunology, Senior Associate Dean for Translational Research and Deputy Director of the Center for Environmental Medicine, Asthma and Lung Biology (CEMALB) of the University of North Carolina (UNC) School of Medicine. The CEMALB is co-located within the Environmental Protection Agency (EPA) Human Studies Facility on the Chapel Hill campus, and CEMALB investigators collaborate with scientists from the Center for Public Health and Environmental Assessment of the EPA focused on Phase I/II translational studies of the health effects of air pollutants in humans. Dr. Peden is an internationally recognized pediatrician and allergist/clinical immunologist and an expert regarding the effect of pollutants in asthma, other lung disorders and systemic diseases. He is the Principal Investigator (PI), a Multiple PI, or Project Leader of EPA, National Institutes of Health (NIH) and Department of Defense (DOD) grants totaling $5 million focused using controlled exposure and epidemiologic methods to assess the impact of environmental pollutants on human health, biologic factors which modify these responses, and early-stage testing of interventions to mitigate the effect of pollutants in exposed persons. He has authored or co-authored 199 peer reviewed publications and 18 book chapters and has made over 132 national and international presentations. He has also served as a Commissioner for the North Carolina Environmental Management Commission, and on the EPA Clean Air Science Advisory Committee Sulfur Oxides Panel (2014-2018) and Particulate Matter Review Panel (2015-2018). Dr. Peden also serves as Associate Editor for the Journal of Allergy and Clinical Immunology for environmental health and is past chair of the American Board of Allergy and Immunology. He is also past President of the American Academy, Asthma and Immunology (2017-18) and is presently a member of the Board of Directors of the World Allergy Organization. Dr. Peden was the founding Chief of the Division of Allergy and Immunology of the UNC Department of Pediatrics, and currently serves as a faculty member of the UNC Curriculum for Toxicology, and as Associate Director for Cross Disciplinary Science the North Carolina Translational and Clinical Sciences Institute (the UNC CTSA). Dr. Peden received a B.A. in Biology (Honors Program), an M.S. in Pharmacology and Toxicology and his M.D. degree from West Virginia University. He was a resident and chief resident of Pediatrics at West Virginia University, and was a Medical Staff Fellow and Chief Medical Staff Fellow at the National Institute of Allergy and Infectious Diseases of the NIH in Bethesda, Maryland.

Peel, Jennifer

Colorado State University

Dr. Jennifer L. Peel is a Professor and Section of Head of Epidemiology in the Department of Environmental and Radiological Health Sciences at Colorado State University (CSU). She also holds an appointment as a Professor in the Departments of Epidemiology and Environmental and Occupational Health in the Colorado School of Public Health. She holds a B.S. in Biochemistry and Molecular Biology from The Pennsylvania State University, and a Ph.D. and M.P.H. in Epidemiology from the Rollins School of Public Health at Emory University. Dr. Peel's research focuses on the health effects of air pollution, including ambient air pollution in the United States and household air pollution in low- and middle-income countries. She is currently one of three principal investigators (PIs) of the Household Air Pollution Intervention Network (HAPIN) trial, a multi-site randomized trial evaluating the impact of a liquefied petroleum gas stove and fuel intervention on exposure to air pollution and health across the lifespan among 3, 200 households using biomass for cooking in Guatemala, India, Peru, and Rwanda. The trial, funded by the National Institutes of Health (NIH) and the Bill & Melinda Gates Foundation, is evaluating adverse birth outcomes, growth, cognitive development, and severe pneumonia among children, and indicators of chronic disease among older adult women, among other outcomes. Dr. Peel has also recently served as PI of two additional projects funded by NIH, one evaluating the emissions and acute health effects from emissions from household cookstoves and another evaluating exposures and acute health effects experienced while commuting by bicycle and by car. Dr. Peel is a member of the Review Committee for the Health Effects Institute, a standing member of the Infectious Disease, Respiratory, Asthma and Pulmonary Conditions Study Section for NIH, and an ad hoc member of several grant review sections for the National Institute of Environmental Health Sciences. She is also a member of the World Health Organization Technical Advisory Group on Global Air Pollution and Health, an Associate Editor for the journals Environmental Health Perspectives and Indoor Air, and the incoming Associate Chair of the Biomedical Institutional Review Board at CSU. She has additionally contributed written material and served on panels for the U.S. Environmental Protection Agency Integrated Science Assessment process for ambient pollution.

Peltier, Richard

University of Massachusetts

Dr. Richard Peltier is an Associate Professor of Environmental Health Sciences at the University of Massachusetts Amherst. He has more than 15 years of research and teaching experience in exposure science, atmospheric chemistry, measurement outreach, data analyses, and stakeholder outreach. Dr. Peltier received a B.S. in Biology from the University of Massachusetts Amherst, a Master of Public Health in Environmental Health from Columbia University, and a Ph.D. in Atmospheric Chemistry from the Georgia Institute of Technology. He completed a postdoctoral fellowship in environmental medicine and inhalation toxicology at the New York University (NYU) Langone School of Medicine before taking an appointment at the University of Massachusetts. His lab focuses on questions at the intersection of human exposure to air pollution and health impacts, with measurement domains including traditional indoor and outdoor locations, but also in understudied regions of the world. His recent work includes research in West Africa, the Indian subcontinent (with a particular focus on India and Nepal), Central Asia, remote indigenous regions of Canada, and, most recently, in the South Pacific. Dr. Peltier is also active in novel instrument development, including the development of low-cost sensing applications in health research that are meant to better characterize human exposure to air quality. Finally, Dr. Peltier is highly active in diverse public engagement beyond the academy, including leading work for the World Meteorological Organization aimed at member states who are interested in low cost sensing applications, leading workshops at the World Health Organization on the use of these sensors, and writing explainers for United Nations Children's Fund (UNICEF) to engage the range of global field office information needs. He has receiving funding from the U.S. Environmental Protection Agency (EPA), the National Institutes of Health (NIH), the Commonwealth of Massachusetts, and the National Science Foundation (NSF). He has published 58 peer-reviewed papers, has provided ad-hoc grant reviewing for the U.S. EPA, National Science Foundation (NSF), National Institutes of Health (NIH), National Aeronautics and Space Administration (NASA), and Centers for Disease Control and Prevention (CDC), is a recent Fulbright awardee, and is the Deputy Editor in Chief for the Journal of Exposure Science and Environmental Epidemiology.

Phalen, Robert

University of California, Irvine

Dr. Robert F. Phalen is a Professor of Medicine at the Center for Occupational and Environmental Health at the University of California, Irvine (UCI). He has a joint appointment in the Department of Environmental and Occupational Health in the School of Public Health. He is the founding director, and current co-director of the Air Pollution Health Effects Laboratory, a faculty member in the graduate program in Environmental Health Science, and a faculty member in the Occupational Medicine Residency Program, all at UCI. His salary is totally provided by the university. His research is in aerosol science, inhalation toxicology, air pollution health effects, modeling the deposition and clearance of inhaled substances, and radiation biology. His research is supported by the Charles S. Stocking (Endowment) Fund, and UCI Advancement. At San Diego State University his undergraduate major was physics with a minor in mathematics, and his master's degree was in nuclear physics with an emphasis on inhaled nuclear reactor accident particles. At the University of Rochester (NY) School of Medicine and Dentistry, he obtained a Ph.D. in Radiation Biology and Biophysics, with an emphasis in Toxicology. His thesis was a study of inhaled nanosilver particles. His post-doctoral training was at the Lovelace Inhalation Toxicology Research Institute in Albuquerque, NM. There he was in the Aerosol Physics group and worked on a National Institute of Environmental Health Sciences (NIEHS) computer-modeling grant on inhaled particles in mammalian species, including humans. The University of California, Irvine, recruited Dr. Phalen in 1974 to direct the Air Pollution Health Effects Laboratory, and to establish a research program. The research focused on the effects of air pollution mixtures on lung defenses. He has published about 300 journal papers, book chapters, and reports related to his research. Another research interest is in the ethics of laboratory animal, and human research. He chaired the UCI Institutional Review Board (IRB), was a member and vice-chair of the Institutional Animal Care and Use Committee (IACUC), and authored an ethics textbook, "Core Ethics for Health Professionals" (Springer International Publisher, 2017). He is an elected fellow of three organizations: the Academy of Toxicological Sciences; the Southern California Academy of Sciences; and the American Association for the Advancement of Science. He is a full member of eight scientific societies and is the chair of the Board of Directors of the California Society for Biomedical Research (CSBR). He has served on review and advisory committees for Environmental Protection Agency (EPA), NIEHS, Centers for Disease Control and Prevention (CDC)/National Institute for Occupational Safety and Health (NIOSH), and the National Academy of Sciences (NAS), including the NAS Committee on Controlled Human Inhalation – Exposure Studies at EPA, and on EPA's Clean Air Scientific Advisory Committee – Particulate Material Subcommittee. He is a former member of the EPA's Science Advisory Board. He has authored and co-authored several books, including "Methods in Inhalation Toxicology" (1997); "Introduction to Air Pollution Science" (2011); and "Core Ethics for Health Professionals" (2017). His awards include "Career Achievement" (Society of Toxicology – Inhalation Section); and "Public Education" (CSBR). He has chaired and co-chaired several international conferences on the effects of air pollutants on human health, and on modeling inhaled aerosol inhalation exposures.

Polidori, Andrea

South Coast Air Quality Management District

Dr. Andrea Polidori is the Advanced Monitoring Technologies Manager at the South Coast Air Quality Management District (South Coast AQMD; Diamond Bar, California) in the Science and Technology Advancement Division. He is a recognized expert in the air quality field with over 20 years of experience in scientific research, air pollution measurements, technology and methods development, community education, science communication, and environmental justice. He has developed and implemented a wide variety of high profile and innovative community air monitoring programs, all designed to better identify and characterize the major sources of air pollutions and improve air quality and public health. Dr. Polidori has been leading the design, development and implementation of the Air Quality Sensor Performance Evaluation Center (AQ-SPEC), a program created to conduct comprehensive performance tests of commercially available low-cost air quality sensors. He is responsible for the implementation of South Coast AQMD's Rule 1180, which mandates the execution of real-time air quality measurements at or near the fenceline of all major refineries in the South Coast Air Basin, and in nearby communities. His is also responsible for implementing air monitoring strategies to satisfy the requirements of Assembly Bill (AB) 617, a State Law which was created to address the disproportionate impacts of air pollution in environmental justice communities. Dr. Polidori has been member of the California Air Pollution Control Officers Association (CAPCOA) Air Monitoring working group (Co-chair and Chair), of the National Association of Clean Air Agencies (NACAA) Air Toxics Committee, and served in other advisory committees at the State and National level.

Ponette-González, Alexandra

University of North Texas

Dr. Alexandra Ponette-González is Associate Professor of Geography and the Environment at the University of North Texas (UNT). Prior to her appointment at UNT, she was a National Science Foundation Minority Postdoctoral Research Fellow. She received her Ph.D. from Yale School of Forestry and Environmental Studies (2009) and an M.A. in Geography from the University of Texas at Austin (2002). Dr. Ponette-González's research focuses on the atmospheric deposition of nutrients and pollutants to terrestrial ecosystems and the influence of human activities and global change drivers on atmosphere-to-ecosystem fluxes. Her research spans tropical as well as north temperate ecosystems. Some of her research has been at the interface of policy, management and basic science (e.g., Ponette-González et al. 2014, 2015). Currently, and with support from a National Science Foundation Faculty Early Career Development Program (CAREER) award, she is investigating the role of black carbon in the urban carbon cycle. She is also conducting research on dust and wildfire effects on particulate matter emissions and nutrient deposition. Dr. Ponette-González is an interdisciplinary scholar who integrates ground-based network data with remote geospatial data to better understand spatial variability in atmosphere-land interactions over small to large scales (e.g., Weathers et al. 2011, Carlson et al. 2014, Griffith et al. 2015, Ponette-González et al. 2016, Ponette-González et al. 2018). She and colleagues are evaluating the performance of a global 3-D chemical transport model in predicting N deposition to Latin American cities. She is a recently elected member of the Honors Committee B of the American Association of Geographers (AAG), served on the AAG Committee on the Status of Women in Geography (2015-2018), and is currently an editorial board member for Progress in Physical Geography (2020-present), Land (2019-present), and Frontiers in Water (2021-present). She has served as a panelist and reviewer for multiple National Science Foundation programs and as an ad hoc reviewer for ~20 journals in meteorology & atmospheric sciences, water resources, plant and soil sciences.

Randolph, Dennis A.

City of Kalazamoo

Mr. Dennis A. Randolph, P.E. is the City Traffic Engineer for the City of Kalamazoo Michigan and has held this position since January 2021. Previously he served as Director of Public Works for the City of Grandview Missouri, and was employed there since 2009. With over 50-years of local government experience. Mr. Randolph has a unique combination of practical engineering experience, and academic experience that brings a diverse view to committees and panels on which he serves. Besides developing and maintaining public infrastructure, his responsibilities include obtaining and managing federal funds for infrastructure improvements. As part of his responsibilities he develops project documents to meet NEPA (National Environmental Policy Act) requirements and has managed many air, noise, and water quality studies. Over the past 12-years, he has led efforts to protect the health of citizens in an environmental justice community by monitoring air permit applications, overseeing the review of the results of air and noise monitoring projects, and overseeing the reviews of human health risk. He has a strong technical background and research interest in hazard identification related to infrastructure improvements, especially as they relate to community development. He has extensive knowledge of local, state and federal permitting processes, remediation of problems, and risk assessment issues, and has been responsible for issuing hundreds of permits over the past 50-years. He also takes part in public meetings and has conducted many media interviews. Mr. Randolph is also an adjunct instructor in civil engineering at the University of Missouri – Kansas City. He has published peer-reviewed articles and served on many external engineering and scientific committees. He also serves as an expert witness in engineering matters. Mr. Randolph earned B.S. and M.S. degrees in Civil Engineering from Wayne State University in Detroit and an MPA from Western Michigan University in Kalamazoo. His research for the past two years in asset management and artificial intelligence was funded by the City of Grandview.

Rees, Sarah

South Coast Air Quality Management District

Dr. Sarah Rees is the Deputy Executive Officer in the Planning, Rule Development, and Area Sources Division at the South Coast Air Quality Management District (AQMD). In her role, Dr. Rees oversees all activities of the Division, including leading development of integrated plans to meet federal, state and local air quality goals. She is also responsible for strategies and rules for air pollution control, meteorology and forecasting, air quality evaluation, air toxics risk assessment, emissions inventories, transportation programs, and community-based programs. Dr. Rees has over twenty years of experience in air quality management and policy development at the state and federal level. Prior to joining the South Coast AQMD, she directed the Environmental Protection Agency (EPA) Office of Regulatory Policy and Management where she managed the Agency's national regulatory agenda and ensured that regulations were informed by robust scientific and economic analysis. Previously, Dr. Rees served several roles within Washington State's Department of Ecology, including directing programs to address climate change, and leading the development of statewide rules for stationary sources, diesel retrofit programs, and plans to meet federal air quality standards. She also brings substantial experience from the private sector, both as a chemical engineer responsible for air pollution control at a major manufacturing facility and as an environmental attorney focusing on air quality law. Dr. Rees has a bachelor's degree in Chemical Engineering from the New Jersey Institute of Technology, a law degree from Rutgers University, and a Ph.D. in Engineering and Public Policy from Carnegie Mellon University.

Rice, Mary B.

Harvard Medical School

Dr. Mary B. Rice is a pulmonary and critical care physician at Beth Israel Deaconess Medical Center (BIDMC) and an Assistant Professor of Medicine at Harvard Medical School. She is the Director of the Institute for Lung Health at BIDMC, where her research is focused on the influence of air pollution on risk and progression of chronic lung disease. She received an undergraduate degree in environmental science and public policy from Harvard College in 1999 and a medical degree from Harvard Medical School in 2007. She completed fellowship training in Pulmonary and Critical Care Medicine at the Harvard Combined Program at Massachusetts General Hospital, Brigham and al Women's Hospital and BIDMC. Her research career began with the investigation of acute and chronic respiratory effects of air pollution exposure in cohort studies of children (Project Viva) and adults (the Framingham Heart Study). In order to acquire and apply advanced skills in epidemiologic research and biostatistics, both of which are critical to her field of study, she completed an M.P.H. degree at the Harvard School of Public Health in 2015. For the past two years, her research has been funded entirely by the National Institute of Environmental Health Sciences (NIEHS) and the National Heart, Lung, and Blood Institute (NHLBI). She is the principal investigator of a grant from NIEHS to study personal pollution exposure (by portable monitor) and daily respiratory health among patients with chronic obstructive pulmonary disease (COPD). She is the principal investigator of a clinical trial (NIEHS R01) for which she is examining the impact of air purification in the homes of patients with chronic lung disease. Dr. Rice is also a co-investigator of the American Lung Association Lung Health Cohort (NHLBI U01), the nation's first prospective cohort study focused on lung health, for which she leads the environmental health research program. She co-chairs the research committee of the Harvard pulmonary fellowship program. Since April 2017, Dr. Rice has served as co-editor of the section on environmental science and health of the Annals of the American Thoracic Society. In this role, she reviews multiple scientific manuscripts each year related to air pollution exposure and health. From 2015-2018, she was vice chair of the American Thoracic Society (ATS) Environmental Health Policy Committee and has chaired this committee since 2018. This committee work has resulted in multiple publications, speaking engagements, scientific workshops on air quality monitoring (2017), asthma/COPD risk (2018) and wildfires (2019), and scientific symposia at the ATS conference. Dr. Rice is presently serving on the National Academies of Sciences, Engineering, and Medicine (NASEM) Committee on Respiratory Protection for the Public and Workers without Respiratory Protection Programs at their Workplaces.

Rich, David

University of Rochester Medical Center

Dr. David Q. Rich is an environmental epidemiologist and a tenured Associate Professor of Epidemiology in the Departments of Public Health Sciences, Medicine, and Environmental Medicine at the University of Rochester Medical Center in Rochester, New York. Dr. Rich is also the Research Director of the Division of Epidemiology and the Director of the Ph.D. and M.S. Programs in Epidemiology. He received his Doctor of Science degree in Environmental Health and Epidemiology from the Harvard School of Public Health in 2004 and has held academic appointments at Harvard, Rutgers University, and now the University of Rochester. His primary research interests are the reproductive and cardiorespiratory health effects of ambient air pollution with particular interest in maternal air pollution exposure during pregnancy, effects on placental development and function, metabolic dysfunction, systemic inflammation, and any resulting deficiencies in fetal growth and development. Dr. Rich has also led several accountability studies assessing the effects of air quality and environmental policies on air pollutant emissions, ambient pollutant concentrations, and morbidity and mortality in human populations in the United States and China. Some of this work has and is examining potential temporal changes in particulate matter (PM) composition and PM toxicity in the United States, and any resulting cardiorespiratory morbidity and mortality. Over the past 2 years, Dr. Rich's research has been funded by the National Institute of Environmental Health Sciences, the Health Effects Institute, and the New York State Energy Research and Development Authority.

Robinson, Allen

Carnegie Mellon University

Dr. Allen L. Robinson is a University Professor, the Raymond J. Lane Distinguished Professor, and the David and Susan Coulter Head of the Department of Mechanical Engineering at Carnegie Mellon University. He is also a Professor in the Department of Engineering and Public Policy. Dr. Robinson joined Carnegie Mellon in 1998 after working for two years as a Postdoctoral Fellow at the Combustion Research Facility at Sandia National Laboratories. He holds a B.S. in Civil Engineering from Stanford University, and an M.S. and Ph.D. in Mechanical Engineering from the University of California at Berkeley. Dr. Robinson has published more than 200 peer-reviewed, archival manuscripts the air quality, climate, and public health. His current research is focused on characterizing hyperlocal air pollution concentrations to quantify the impacts of modifiable factors on human exposure, to support epidemiological research, and to characterize exposure disparities that drive environmental justice. Dr. Robinson has also published extensively on emissions from combustion systems (focusing on fine particle emissions from mobile sources, biomass burning, and coal combustion); organic aerosols; and methane emissions from the natural gas system. In collaboration with colleagues, he proposed a new conceptual model for organic aerosol emissions from combustion systems published in 2007 in Science that has been widely adopted in the atmospheric chemistry, including implemented in many chemical transport models used for policy analysis. Dr. Robinson received the American Geophysical Union ASCENT Award in 2015 and the American Association and Aerosol Research David Sinclair Award in 2020. He was named a University Professor at Carnegie Mellon University in 2020. Dr. Robinson is the director of the EPA-funded Center for Air, Climate, and Energy Solutions (CACES), which supports a multi-disciplinary team of researchers from eight universities investigating problems at the intersection of air pollution, climate and energy. Dr. Robinson currently serves on the Research Committee of the Health Effects Institute (term ends Oct 2021). He is a past President of the American Association for Aerosol Research. Previous service to the Environmental Protection Agency (EPA) includes serving as a member of the EPA Clean Air Scientific Advisory Committee (CASAC) Air Monitoring and Methods Subcommittee (AMMS) and Working Group on Measurement of Particulate Matter Emissions from Wood Heaters. Dr. Robinson's research has been supported by grants from both government agencies and private companies (current support is from EPA and the National Science Foundation). He is a member of the American Association of Aerosol Research, American Geophysical Union, American Society of Mechanical Engineers, American Society for Engineering Education, American Chemical Society, and American Association for the Advancement of Science.

Rom, William

New York University

Dr. William N. Rom is the Sol and Judith Bergstein Professor of Medicine and Environmental Medicine, Emeritus, at the New York University (NYU) Grossman School of Medicine and Research Scientist at NYU School of Global Public Health (current position). He graduated cum laude in Political Science from the University of Colorado, received an M.D. from the University of Minnesota, an M.P.H. from Harvard School of Public Health, completed his internal medicine residency at University of California, Davis, and had a fellowship in pulmonary and occupational medicine at Mt. Sinai (New York). He was an Assistant and Associate Professor at the University of Utah where he founded the Rocky Mountain Center for Occupational and Environmental Health. He was a Senior Investigator at the Pulmonary Branch, National Heart, Lung, and Blood Institute (NHLBI), National Institutes of Health (NIH), and Director of the Division of Pulmonary and Critical Care Medicine at New York University and Chief of the Chest Service at Bellevue Hospital Center. He teaches Climate Change and Global Public Health at NYU School of Global Public Health to M.P.H. students for 5 years (and at Wagner Graduate School of Public Service for 5 years prior to that) and Environmental Health in a Global World to NYU public health undergraduates. He has published 356 peer reviewed publications. His research expertise is on the epidemiology of occupational lung diseases and environmental exposures. He performed over 150 bronchoalveolar lavages to study alveolar macrophages and deciphered the mechanisms of fibrosis due to asbestos, silica, and coal. He purified the Alveolar Macrophage-derived Growth Factor and demonstrated that it was a macrophage insulin-like growth factor I. He traveled to India and performed 47 bronchoalveolar lavages to study tropical pulmonary eosinophilia. He studied tuberculosis (TB)/human immunodeficiency virus (HIV) and focused on the molecular biology of inflammatory cytokines in the lung and their promoter activation. He performed clinical research on aerosolized interferon-gamma on TB in South Africa. He directed the NYU Lung Cancer Biomarker Center studying the biomarkers and molecular diagnostics of the early diagnosis of lung cancer. His team was awarded $294 million in NIH and Centers for Disease Control and Prevention (CDC) grants at NYU during his first 12 years; over the past two years his only funding has been from the Will Rogers Fund. He served 10 years on the Health Effects Institute's Review Committee on air pollution research. He served for 10 years on the World Trade Center Health Effects Technical Scientific Advisory Committee. He staffed the Environment and Public Works Committee and Health Committees for Senator Hillary Clinton while on sabbatical 2003-4. He was on sabbatical 2014-5 at the Environmental Protection Agency (EPA) in their Climate Change program and served on the health committee of the Global Change Program. He received the American Thoracic Society (ATS) Distinguished Achievement Award and was elected into the Association of American Physicians and as a Fellow of the American Association for the Advancement of Science.

Sarnat, Jeremy

Emory University

Dr. Jeremy A. Sarnat is currently an Associate Professor of Environmental Health at the Rollins School of Public Health of Emory University and Co-Director of the Southeastern Center for Air Pollution and Epidemiology (SCAPE), based jointly at Emory University and the Georgia Institute of Technology. He holds an Sc.D. in Environmental Health from the Harvard School of Public Health. Dr. Sarnat's research focuses primarily on characterizing exposures to urban air pollution in various populations, in particular panels of sensitive cohorts such as children, older adults and individuals with cardiorespiratory disease. Much of his work examines how exposure science informs environmental epidemiology; the impact of exposure misclassification and confounding on air pollution epidemiologic findings; and, most recently, the development and application of molecular levels measures of air pollution exposure and response using novel high resolution metabolomics platforms. He has served on numerous academic and research advisory boards and was an ad hoc member of Environmental Protection Agency (EPA) Clean Air Scientific Advisory Committee (CASAC) panels for both Nitrogen Oxides and Particulate Matter. Currently, Dr. Sarnat is the Principal Investigator of several exposure and epidemiologic studies investigating exposures to primary traffic pollution. In 2011, he was awarded the Joan M. Daisey Outstanding Young Scientist Award by the International Society of Exposure Science. Prior to entering academia, Dr. Sarnat worked as staff scientist for 4 years at the Israel Union for Environmental Defense in Tel Aviv, a non-profit organization of scientists and lawyers promoting sustainable development and pollution prevention.

Schwartz, Joel

Harvard T.H. Chan School of Public Health

Dr. Joel Schwartz is a Professor in the departments of Environmental Health and Epidemiology at the Harvard T.H. Chan School of Public Health and Director of the Harvard Center for Risk Analysis. His major research interests include health effects of air pollution, heavy metals, climate change, and drinking water, epidemiological methods, air pollution modeling, risk assessment and cost benefit analyses. He has examined the epidemiologic questions using a variety of methods including time series and case-crossover analyses (whose use in environmental epidemiology he introduced), and case-only analyses of administrative data, survival and repeated measures analyses of cohorts, repeated measures analyses of panel studies, etc. He is particularly interested in quasi-experimental designs and other causal models. His studies have included a range of outcomes including cognitive function, lung function, asthma, heart attacks, strokes, deaths, blood pressure, lipid levels, biomarkers of inflammation and oxidative stress, markers of biological aging, and epigenetic changes. He is also interested in social and other factors conveying increased susceptibility. Dr. Schwartz's benefit-cost analysis on lead in gasoline was responsible for its elimination in the United States, and his methodology for valuing the benefits of reducing toxins that have cognitive effects is widely used. He introduced ensembles of machine learners for modeling air pollution concentrations on a fine spatio-temporal scale, and his models for fine particulate matter (PM2.5), nitrogen dioxide (NO2), and ozone (O3) are widely used. He is the recipient of a John D. and Catherine T. MacArthur Fellowship, and the John Goldsmith Award from the International Society for Environmental Epidemiology.

Selin, Noelle

Massachusetts Institute of Technology

Dr. Noelle Eckley Selin is a professor in the Institute for Data, Systems and Society and the Department of Earth, Atmospheric and Planetary Sciences at the Massachusetts Institute of Technology (MIT). She is also the Director of MIT's Technology and Policy Program. Her research uses atmospheric chemistry modeling to inform decision-making on sustainability challenges, including air pollution, climate change and hazardous substances such as mercury and persistent organic pollutants. Her work also examines interactions between science and policy in international environmental negotiations and develops systems approaches to address sustainability challenges. Her specific areas of expertise include: integrated modeling of the pathway from policies to impacts for health-damaging air pollutants such as fine particulate matter and ozone; climate change and air quality; atmospheric chemistry and integrated modeling of mercury and persistent organic pollutants; sustainability science and engineering; and science-policy interactions. Dr. Selin received her Ph.D. and M.A. in Earth and Planetary Sciences, and her B.A. in Environmental Science and Public Policy, all from Harvard University. She is the recipient of a U.S. National Science Foundation Faculty Early Career Development (CAREER) award (2011), a Leopold Leadership fellow (2013-2014), a Kavli fellow (2015), a member of the Global Young Academy (2014-2018), and an American Association for the Advancement of Science Leshner Leadership Institute Fellow (2016-2017). She currently serves as a Principal Investigator (PI) for the Air, Climate & Energy Center (Harvard-MIT) funded by the Environmental Protection Agency, and as co-director of the MIT Superfund Research Program. Dr. Selin has served on numerous advisory committees, including the Scientific Advisory Committee for the EPA-supported Center for Air, Climate, and Energy Solutions, the International Advisory Board of the United Nations Environment Programme (UNEP) International Environmental Technology Centre (IETC), the ad hoc technical expert group for effectiveness evaluation for the Minamata Convention, and the Scientific Steering Committee for the International Conference on Mercury as a Global Pollutant. She is currently on the editorial advisory board for the journals Environmental Science and Technology and Environmental Science: Processes and Impacts, and is an Associate Editor for the journal Science Advances. She has participated in numerous international assessment processes, most recently as a chapter lead author for the Arctic Monitoring and Assessment Programme's 2021 Mercury Assessment.

Sheppard, Elizabeth A. (Lianne)

University of Washington

Dr. Elizabeth A. (Lianne) Sheppard is Professor in the Departments of Environmental and Occupational Health Sciences, and Biostatistics at the University of Washington School of Public Health. She has also been named Rohm and Haas Professor in Public Health Sciences. She holds a B.A. in psychology and a Sc.M. in biostatistics from Johns Hopkins University, and a Ph.D. in biostatistics from University of Washington. Her research interests focus on exposure assessment study design, exposure modeling, and inference about the health effects of environmental and occupational exposures with particular emphasis on statistical methods. She is co-principal investigator of the Adult Changes in Thought Air Pollution Study (ACT-AP) study to determine whether air pollution exposure is associated with degradation of late-life brain health, funded by the National Institute of Environmental Health Sciences (NIEHS) and the National Institute on Aging. She is principal investigator of a study funded by the Health Effects Institute to optimize air pollution exposure assessment for inference about health effects in cohort studies. Dr. Sheppard directs two NIEHS-funded training programs, one for graduate students and postdoctoral scholars emphasizing quantitative training in the environmental health sciences, and the other for undergraduates to promote diversity in the environmental health sciences. She is a fellow of the American Statistical Association and recipient of the International Society for Environmental Epidemiology (ISEE) Research Integrity Award. She has served on the Health Effects Institute's Review Committee, the Environmental Protection Agency (EPA) chartered Clean Air Scientific Advisory Committee (CASAC), and has further advised the EPA through service on several CASAC special panels, Science Advisory Board ad hoc committees, a Federal Insecticide, Rodenticide, and Fungicide Act Scientific Advisory Panel, and a Toxic Substances Control Act Science Advisory Committee on Chemicals Panel.

Smith, Richard

University of North Carolina, Chapel Hill

Dr. Richard L. Smith is Mark L. Reed III Distinguished Professor of Statistics and Professor of Biostatistics in the University of North Carolina, Chapel Hill. From 2010-2017 he was Director of the Statistical and Applied Mathematical Sciences Institute (SAMSI), a Mathematical Sciences Institute supported by the National Science Foundation. From January-June 2018, he was Associate Director of SAMSI. He obtained his Ph.D. from Cornell University and previously held academic positions at Imperial College (London), the University of Surrey (Guildford, England) and Cambridge University. His main research interest is environmental statistics and associated areas of methodological research such as spatial statistics, time series analysis and extreme value theory. He is particularly interested in statistical aspects of climate change research, and in air pollution including its health effects. He is a Fellow of the American Statistical Association and the Institute of Mathematical Statistics, an Elected Member of the International Statistical Institute, and has won the Guy Medal in Silver of the Royal Statistical Society, and the Distinguished Achievement Medal of the Section on Statistics and the Environment, American Statistical Association. In 2004 he was the J. Stuart Hunter Lecturer of The International Environmetrics Society (TIES). He is also a Chartered Statistician of the Royal Statistical Society. In 2020, he was elected a Fellow of the American Association for the Advancement of Science (AAAS). Dr. Smith was a member of EPA's Science Advisory Board (SAB) from December 2017 until the Board was dissolved in March 2021. He was also a member of the Board's Radiation Advisory Committee. His recent research funding has come through the National Science Federation (as Director or Associate Director, through June 2018, of the research institute SAMSI, and also as holder of a collaborative grant on climate extremes, through 2019) and the National Institutes of Health (as an investigator in a grant based at George Washington University, on the effect of air pollution on Alzheimer's disease and related dementia conditions). He also participated in an industry-funded research collaboration "A counterfactual approach to quantifying the causal effect of fine particulate matter on mortality" (the main activity took place in 2016-2018 but there is still a paper in process from that activity). He learned of this opportunity as a previous member of the SAB.

Solomon, Paul

Aclima, Inc.

Dr. Paul A. Solomon's areas of expertise and research interests have historically focused on the development, evaluation, and application of analytical laboratory and methods to measure particulate matter (PM) and the chemical components of PM in air with a focus on coarse and fine PM. Applications have included a range of domestic and international research studies designed to characterize and quantify major, minor, and trace elements and species as well as precursor gases and oxidants to elucidate source-receptor-exposure relationships and chemical and physical processes occurring in clean and polluted atmospheric environments. More recently, his interests include the development, evaluation, and deployment of micro air pollution monitors (air pollution sensors) with an emphasis on PM mass, methane, black carbon, and other PM and gaseous components in air. Dr. Solomon also has a strong desire to ensure that research results are communicated to the scientific, public, and policy arenas through coordination and publication of scientific papers in conferences and books. Dr. Solomon has over 90 peer-reviewed journal publications, about 140 presentations, holds 6 patents in air sampling methods with 5 patent applications pending, has organized 34 special peer-reviewed journal issues, including over 600 papers, and has organized and chaired four major international air quality specialty conferences.

Sonwane, Chandrashekhar

Masten Space Systems

Dr. Chandrashekhar Sonwane currently works full time as Principal Investigator and Director for various National Aeronautics and Space Administration (NASA) lunar robotics contracts at Masten Space Systems and works as part time President of an environmental consultancy firm. He is a current Environmental Protection Agency (EPA) Science Advisory Board (SAB) Chemical Assessment Advisory Committee (CAAC) member and has worked as a Lead Consultant leading various teams for engineering and environmental projects helping various industries such as Pratt and Whitney Rocketdyne, General Electric, BP, Shell, ExxonMobil, Boeing, Rockwell and Aerojet Rocketdyne. These projects include carbon dioxide (CO2) emissions as well as other toxic/criteria pollutants. He has also helped in the hospitals related to COVID-19 pandemic health effect study and ways to combat it. Dr. Sonwane holds a Bachelor's degree from University of Mumbai, Master of Technology from Indian Institute of Technology Mumbai, and a Ph.D. from University of Queensland, Brisbane, Australia all in Chemical Engineering. He is an Elected Fellow of European Academy of Sciences and Arts, Fellow of Royal Aeronautical Society, Associate Fellow of American Institute of Aeronautics & Astronautics, Fellow of Royal Astronomical Society, Fellow of the Institute of Engineering and Technology, Institute of Chemical Engineers, Fellow of Royal Australian Chemical Institute, Fellow of Engineers Australia. Dr. Sonwane was 2019-2021 elected Chair/President of American Institute of Aeronautics and Astronautics Los Angeles - Las Vegas section with a community of 15, 000 Professionals and their family/friends as well as 2019-2021 Board member of American Chemical Society, Southern California and a lead for annual Earth day and annual Chemistry week. He has received numerous national and international awards, fellowships and scholarships as well as a topmost award "Engineer of the Year" from Pratt & Whitney and was recently nominated for 2020 Rotary National Award for Space Achievement (RNASA) Stellar Award. Recently he was nominated as International Union of Pure and Applied Chemistry (IUPAC)/United Nations (UN) Board member for the Chemical Advisory board. He is inventor of about 50 device and process patents/ patent applications worldwide (U.S., China, Japan and Europe) assigned to various companies (General Electric, Pratt & Whitney, United Technology Corporation, Aerojet Rocketdyne, Solar Reserve). Dr. Sonwane holds the following certifications: BCEE (Board Certified Environmental Engineer), QEP (Quality Environmental Professional), Master Black Belt Six Sigma for Quality Improvement, PMP (Project Management Professional), Chartered Engineer, and Chartered Chemist. Dr. Sonwane is author of 30 papers in peer reviewed international journals, 40 international conference papers and about 20 significant company reports. Dr. Sonwane's sources of research funding include: Internal corporate/company funding, U.S. Department of Energy, Defense Advanced Research Projects Agency (DARPA), Advanced Research Projects Agency-Energy, NASA, Shell, ExxonMobil & BP. He has received no direct or indirect funding from EPA.

Thakur, Neeta

University of California at San Francisco

Dr. Neeta Thakur is an Assistant Professor at the University of California, San Francisco (UCSF) and a physician-scientist specializing in pulmonary and critical care medicine with advance training in clinical research methods, social and molecular epidemiology, and implementation sciences. She completed her undergraduate and medical school training at the University of Arizona, where she also obtained her M.P.H. via a dual degree program. She joined UCSF in 2007 to complete her residency training and fellowship in Internal Medicine and Pulmonary and Critical Care Medicine and joined the faculty in 2015. Dr. Thakur's research program focuses on the short and long-term health effects of multilevel stressors, including air pollution, with special focus on economically-disadvantaged communities and communities of color. She has linked multiple data types (biologic, individual, and environmental) to demonstrate that environmental and social risk factors are geo-spatially distributed, disproportionately burden communities of color, and are associated with clinically relevant health outcomes. Dr. Thakur has also developed and supported programs targeted at increasing access to science, technology, engineering, and math (STEM) fields for individuals from traditionally underrepresented groups in medicine and science (UIM) at the local and national level. This includes bringing community youth voices to science through youth participatory action research. Dr. Thakur is also the current Chair of Health Equality and Diversity Committee for the American Thoracic Society (ATS). The ATS is the leading professional association for pulmonary and critical care medicine and research with over 16, 000 members worldwide. In this role, she provides guidance on issues as they relate to health equity, including proving input on ATS's stance related to Air Pollution and Climate Change. Dr. Thakur is currently funded by the National Institutes of Health (NIH), California Office of Planning and Research, Robert Wood Johnson Foundation, and Genentech Corporate Giving.

Turpin, Barbara

University of North Carolina at Chapel Hill

Dr. Barbara Turpin is Department Chair and Professor of Environmental Sciences and Engineering in the Gillings School of Global Public Health at the University of North Carolina (UNC) at Chapel Hill. She is an aerosol scientist that combines laboratory experiments, chemical modeling and field research to improve our understanding of linkages between air pollution emissions and subsequent human exposure. She is best known for research on secondary organic aerosol formation through aqueous (multiphase) chemistry. She conducts research on many aspects of organic aerosol, indoor chemistry, Per- and polyfluoroalkyl substances (PFAS), aerosol transmission of COVID-19, and exposure science. Over the past two years, Professor Turpin's research has been supported by the US National Science Foundation, Alfred P. Sloan Foundation, the North Carolina (NC) General Assembly through the NC Collaboratory, and the National Oceanic and Atmospheric Association. Professor Turpin received a B.S. from the California Institute of Technology (1984) and Ph.D. from OGI at the Oregon Health Sciences University (1990). She conducted postdoctoral research at the University of Minnesota Particle Technology Laboratory (1990-1994) and was a Professor at Rutgers University (1990-2015) before joining the University of North Carolina 6 years ago. She is a Fellow of the American Association for the Advancement of Science, Fellow of the American Geophysical Union, and Fellow of the American Association for Aerosol Research (AAAR). Professor Turpin is currently serving on the National Academies Committee on the Chemistry of Urban Wildfires (2021-present). She served on the Environmental Protection Agency (EPA) Clean Air Scientific Advisory Committee (CASAC) Particulate Matter Review Panel (2016-2018), and subsequently served on the Independent Particulate Matter Review Panel that submitted public comments on PM2.5 standard in 2020. She also served as a Past President (2013), member of the Board of Directors (1997-2000) and Conference Chair (2003) of the American Association for Aerosol Research (AAAR). She served as Associate Editor of Environmental Science and Technology (ES&T) for 7 years (2013-2020), as a member of the International Commission for Atmospheric Chemistry and Global Pollution (2010-2014), and on an Advisory Group for the International Agency for Research on Cancer (IARC) Monographs on Air Pollution (2004). Dr. Turpin is a recipient of Atmospheric Environment's Haagen Smit Prize (2009), AAAR's Sinclair Award (2010) and the American Chemical Society's award for Creative Advances in Environmental Sciences and Technology (2018).

Warheit, David

Warheit Scientific LLC

Dr. David B. Warheit is a nano/pulmonary toxicology expert who has retired from the DuPont and Chemours Companies. Dr. Warheit holds a B.A. in Psychology from the University of Michigan and a Ph.D. in Physiology from Wayne State University School of Medicine. Dr. Warheit was awarded a National Institutes of Health (NIH) Postdoctoral Fellowship, and 2 years later, a Parker Francis Pulmonary Fellowship, both of which he took to the National Institute of Environmental Health Sciences (NIEHS) to study mechanisms of asbestos-related lung disease. In 1984, he moved to DuPont Haskell Laboratory to develop a pulmonary toxicology research laboratory. He is the author/coauthor of more than 140 publications and has been a recipient of the International Life Sciences Institute (ILSI) Kenneth Morgareidge Award (1993) and the Robert A. Scala Award in Toxicology (2000) and the Oklahoma State Sitlington Lecture (2007). In 2007, Dr. Warheit served on a joint DuPont and Environmental Defense Committee – to produce the "Nano Risk Framework" document. He has also attained Diplomat status of the Academy of Toxicological Sciences (2000) and the American Board of Toxicology (1988). He has served on National Institutes of Health (NIH) study section review committees, National Academy of Science Committees (1997) (2011-2013), The National Institute for Occupational Safety and Health (NIOSH) Board of Scientific Counselors (2003-2007), and the Scientific Advisory Board for National Center for Toxicology Research (NCTR-FDA) (2012-2016). He is a past president of the Society of Toxicology-related Inhalation Toxicology (1998) and Nanotoxicology Specialty Sections (2010) and past member of the Society of Toxicology Program Committee (2009-2012). More recently, he was the corresponding author of the Nanotoxicology Chapter in Casarett and Doull's Toxicology textbook (2019). Previously, he was a Technical Fellow at the DuPont Co. and the Chemours Company. Dr. Warheit retired from Chemours in December of 2018. In 2019, he formed his own toxicology consulting Company, Warheit Scientific LLC. He has not received any major U.S. governmental research funding. His two major clients are The Carbon Black and Titanium Dioxide Science Advisory Boards.

Watson, John G.

Desert Research Institute

Dr. John G. Watson is a Research Professor in the Division of Atmospheric Sciences at the Desert Research Institute (DRI), Nevada System of Higher Education in Reno, Nevada, where he has been employed for 39 years. He has 45+ years of experience in air quality research with an emphasis on suspended particulate matter (PM) measurement methods, chemical characterization, source apportionment, atmospheric aging, human exposure measurements, and non-health effects on visibility, ecosystems, cultural heritage, and climate. Dr. Watson earned a B.A. in physics at the State University of New York at Brockport, a M.S. in physics from the University of Toledo, and a Ph.D. in environmental science from the Oregon Graduate Center (now part of the Oregon Health and Science University). Dr. Watson pioneered the use of receptor models for Total Suspended Particles (TSP) National Ambient Air Quality Standards (NAAQS) evaluation and attainment in the 1976-77 Portland Aerosol Characterization Study, has prepared data analysis and guidance documents for the Environmental Protection Agency (EPA) Inhalable Particulate Network (EPA-450/4-81-035, EPA-450/4-84-016), PM sampling and speciation (EPA-452/R-94-009), source apportionment (EPA-600/2-81-029, EPA-450/4-84-020, EPA 450/4-87-010, EPA-450/4-90-004, EPA-451/R-04-001), compliance network design (EPA-454/R-99-022), and continuous PM monitoring (EPA-454/R-98-012). He led or was a major contributor to visibility studies in Denver, Phoenix, Tucson, the Colorado Plateau, and Central California. Prior technical advisory experience includes the U.S. Navy's "Expert Panel on Chaff" (1999), the National Research Council's (NRC) committee on "The Effects of Changes in New Source Review Programs for Stationary Sources of Air Pollutants" (2004 – 2006), NRC's committee on "Energy Futures and Air Pollution in Urban China and the United States" (2005-2008), and the "Central California Air Quality Studies Technical Advisory Committee" (1995-2008). He is a long-term and active member of the Air & Waste Management Association, the American Association for Aerosol Research, and the American Association for the Advancement of Science. His current and recent research projects have been supported by the National Institute of Occupational Safety and Health, the National Parks Service, the National Science Foundation, the World Bank, the Wood Buffalo Environmental Association, the Electric Power Research Institute, and ArcelorMittal Tubarão, Brazil. He is author or co-author of >600 peer-reviewed articles and book chapters and >200 technical reports. He has been recognized by ISIHighlyCited.com in ecology and environment and is one of Stanford University's "Top 2% of the Worlds' Most Cited Scientists."

Weisskopf, Marc

Harvard T.H. Chan School of Public Health

Marc G. Weisskopf, Ph.D., Sc.D., is the Cecil K. and Philip Drinker Professor of Environmental Epidemiology and Physiology at the Harvard T.H. Chan School of Public Health in the departments of Environmental Health and Epidemiology, Director of the Harvard T.H. Chan National Institute of Environmental Health Sciences (NIEHS) Center for Environmental Health, and Director of Epidemiological Studies for the Football Players Health Study at Harvard. Dr. Weisskopf received his Ph.D. in Neuroscience from the University of California, San Francisco, and his Sc.D. in Epidemiology from the Harvard T.H. Chan School of Public Health. He also spent two years as an Epidemic Intelligence Service Officer with the Centers for Disease Control and Prevention (CDC) working on environmental health issues in the Wisconsin State Health Department. His neuroscience work focused on molecular and cellular aspects of neural signaling and plasticity. His epidemiological work focuses on the influence of environmental exposures on brain health across the life course. In particular, his research focuses on environmental risk factors for outcomes such as autism spectrum disorders, amyotrophic lateral sclerosis, cognitive function and dementia, and psychiatric conditions. Dr. Weisskopf also explores the use of physiologically-based methods for assessing toxicant effects on the brain, and epidemiological methods issues to improve causal inference from observational environmental health studies. Dr. Weisskopf's research has been funded in the last two years by the National Institutes of Health (NIEHS, National Institute of Neurological Disorders and Stroke, and National Institute on Aging), CDC/Agency for Toxic Substances and Disease Registry, the Department of Defense, and a private donor. He serves on the advisory board for the GuLF Study at NIEHS and the Kaiser Permanente Research Bank. He is a member of the International Society for Autism Research and the International Society for Environmental Epidemiology, for which he is a past councilor and current chair of their annual conference committee.

West, Jason

University of North Carolina

Dr. J. Jason West is Professor of Environmental Sciences & Engineering at the University of North Carolina at Chapel Hill. Dr. West is an engineer and leader in interdisciplinary research that connects air pollution, climate change, energy, and human health, using models of atmospheric transport and chemistry at global through local scales. He led some of the first studies to use computer models of the global atmosphere to assess the health impacts of ambient air pollution, addressing the global burden of air pollution on mortality, the co-benefits of greenhouse gas mitigation for global air quality and health, and the impacts of climate change on global air quality and health. Dr. West has served on the Scientific Steering Committee of the International Commission on Atmospheric Chemistry and Global Pollution, and the National Aeronautics and Space Administration (NASA) Health and Air Quality Applied Sciences Team, and is a Leopold Leadership Fellow. He is on the editorial board of Atmospheric Chemistry & Physics, and of the Reviews section of Environmental Research Letters. His research has recently been funded by the National Science Foundation (NSF), Environmental Protection Agency (EPA), and NASA. He has published in prominent journals including Nature Climate Change, and Nature Geoscience, and his work has been featured in major news outlets including New York Times and CBS News. He has written and spoken with the public extensively on global climate change and air pollution. He earned a B.S. from Duke University, M.Phil. from the University of Cambridge, and an M.S. and Ph.D. from Carnegie Mellon University. He worked as a researcher at the Massachusetts Institute of Technology (MIT) and Princeton, was an American Association for the Advancement of Science (AAAS) Fellow at the U.S. Environmental Protection Agency, and a visiting scientist at the National Institute for Ecology in Mexico City.

West, Jeffrey

Environmental Protection Agency (Retired)

Dr. Jeffrey West retired from Federal service in December 2010. He had been with National Oceanic and Atmospheric Administration (NOAA) and Environmental Protection Agency (EPA) Office of Research and Development (ORD) National Exposure Research Laboratory (NERL) for 10 years. In addition to being the quality assurance manager for the division he spent considerable time working with others outside of the agency as Associate Management Coordinator of the North American Research Strategy for Tropospheric Ozone (NARSTO) organization. NARSTO was a public/private partnership whose membership spans government, the utilities, industry, and academia throughout Canada, the United States, and Mexico. It was established on February 13, 1995 when public and private representatives of Canada, the United States, and Mexico signed the NARSTO Charter in a ceremony at the White House. NARSTO's primary mission was to coordinate and enhance policy-relevant scientific research and assessment of tropospheric pollution behavior. Its activities provided input for science-based decision-making and determination of workable, efficient, and effective strategies for local, regional, and international air-pollution management. NARSTO has become a word mark signifying this tri-national, public-private partnership for dealing with multiple features of tropospheric air pollution. His 20 years working in private industry and 10 years of Federal experience doing air quality related work has provided him with knowledge and insights to how politics and science need to interact. He was instrumental in pursuing public and private cooperation to provide sound science for the development of reasonable environmental management policy throughout North America. His experience ranges from the practical permitting and licensing of major sources, managing large air pollution field monitoring programs, quality assuring environmental monitoring programs, to the research coordination and information dissemination with NARSTO. He has a B.S. in Environmental Science (Stockton University) and graduate studies in environmental engineering (Clemson University).

Williams, Claire

American University

Dr. Claire Williams is a Research Professor at American University's Department of Environmental Sciences where she has developed atmospheric biology and climate diplomacy courses. She has been a tenured full professor at Texas A&M's Faculty of Genetics. Educated at North Carolina State University's doctoral program in forestry, she recently earned a M.A. in Global Studies from the University of North Carolina-Chapel Hill. Since 2007, Dr. Williams has partnered in science diplomacy projects in Ukraine, Germany, Russia and United Arab Emirates after having served as a science advisor to the Bureau of European and Eurasian Affairs at the U.S. State Department as an American Association for the Advancement of Science (AAAS) Fellow. Her research has been recognized with a Guggenheim award, two Fulbright awards, Bullard Fellow from Harvard, DAAD and the Dr. Lee Research Award from Oxford University, United Kingdom. Funding has been awarded by the National Science Foundation, Department of Energy, United States Department of Agriculture and Winrock Foundation, among others. Her research expertise is long-range transport of atmospheric biota with emphasis on pollen, neo-allergens and other coarse bioaerosols in Russia, Germany, Finland, Chile, Canada and the United States. Dr. Williams has a current interest in the changing particulate matter composition of modern desert dust storms in the Middle East and its impact on human health.

Zigler, Corwin (Cory)

University of Texas at Austin

Dr. Corwin (Cory) Zigler completed a Ph.D. in biostatistics from the UCLA School of Public Health in 2010. After holding a postdoctoral fellowship and faculty position in the Department of Biostatistics at the Harvard T.H. Chan School of Public Health from 2010 – 2018, he moved to his current position as Associate Professor of Statistics and Data Science, jointly appointed in the Department of Statistics and Data Science and Dell Medical School at the University of Texas at Austin. He currently serves as associate editor for the journals Biometrics and Biostatistics, is president of the Health Policy Statistics Section of the American Statistical Association, and serves on the National Academies of Science Engineering and Medicine committee to review the Environmental Protection Agency (EPA) Integrated Risk Information System (IRIS) Assessment Handbook. His career awards include the 2010 Carolbeth Korn Prize for the most outstanding graduating student in the UCLA School of Public Health, a 2012 Young Investigator Award from the Statistics in Epidemiology Section of the American Statistical Association, and the 2019 Rothman Prize for the best paper published in Epidemiology. Dr. Zigler's primary statistical research focus is Bayesian statistical methods for making causal inferences with observational data. His work has focused on problems in environmental health and environmental policy, with key contributions in air pollution epidemiology, regulatory policy, and studies of point-source exposure and health impacts of power plant emissions. His work integrates methods from across the disciplines of statistics, epidemiology, and atmospheric science and engineering. Specific areas of application to environmental health include: evaluation of federal nonattainment designations for national ambient air quality standards and evaluation of strategies to control harmful pollution emissions from power plants. Over the past two years, Dr. Zigler has received research funding from the National Institutes of Health (NIEHS R01ES026217), USEPA (RD-835872), National Science Foundation (NSF 1953206), and Tito's Handmade Vodka, and serves as a consultant on a project from the Health Effects Institute.