Invitation for Public Comment on the List of Candidates for the EPA Clean Air Scientific Advisory Committee Sulfur Oxides Primary National Ambient Air Quality Standard (NAAQS) Review Panel

September 30, 2013

The U.S. Environmental Protection Agency (EPA) Science Advisory Board (SAB) Staff Office announced in a *Federal Register* Notice (Volume 78, Number 140, Pages 43880-43881) published on July 22, 2013 that it was forming the EPA Clean Air Scientific Advisory Committee (CASAC) Sulfur Oxides Review Panel to review and provide independent expert advice, through the Chartered CASAC, on EPA's technical and policy assessments that support the Agency's review of the Primary National Ambient Air Quality Standard (NASSQS) for sulfur oxides, including drafts of the Integrated Plan, Integrated Science Assessment, Risk/Exposure Assessment, and Policy Assessment. To form the Panel, the SAB Staff Office sought public nomination of nationally recognized and qualified experts in one or more of the following areas, particularly with respect to sulfur oxides air pollution: atmospheric science, human exposure, dosimetry, toxicology, epidemiology, medicine, public health, biostatistics, and risk assessment.

Based on the qualifications and interest of the nominees, the SAB Staff Office identified 37 candidates for the panel and the biosketches of these candidates are included.

The SAB Staff Office Director will make the final decision about who will serve on the Panel based on all relevant information. This includes a review of the confidential disclosure form (EPA Form 3110-48), relevant information gathered by staff, and public comments. For the EPA SAB Staff Office, a balanced Panel is characterized by inclusion of candidates who possess the necessary domains of knowledge, the relevant scientific perspectives (which, among other factors, can be influenced by work history and affiliation), and the collective breadth of experience to adequately address the general charge. Specific criteria to be used in evaluating a candidate include: a) scientific and/or technical expertise, knowledge, and experience; b) availability and willingness to serve; c) absence of financial conflicts of interest; d) absence of appearance of a lack of impartiality; e) skills working in advisory committees and panels, and, for the panel as a whole, f) diversity of scientific expertise and viewpoints.

We hereby invite comments from members of the public to provide relevant information of other documentation that the SAB Staff Office should consider in determining who should serve on the CASAC Sulfur Oxides Review Panel. Please be advised that comments received are subject to release under the Freedom of Information Act. Comments should be submitted to Dr. Diana Wong, Designated Federal Officer, no later than October 21, 2013. E-mailing comments (wong.diana-M@epa.gov) is the preferred mode of receipt.

CASAC Sulfur Oxides Primary NAAQS Review Panel

Allen,George A.

Northeast States for Coordinated Air Use Management (NESCAUM)

Mr. George Allen is a Senior Scientist at NESCAUM (Northeast States for Coordinated Air Use Management), an interagency association of the eight Northeastern States. He holds a B.S. in Electrical Engineering from Tufts University (1974). 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 is the author or co-author of more than 30 peer-reviewed journal papers on development and evaluation of measurement methods, exposure assessment, and air pollution health effects. 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 U.S. Environmental Protection Agency (EPA) and National Institutes of Health- funded air pollution studies. 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 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 US EPA (support member states' air quality programs).

Amar,Praveen

Clean Air Task Force

Dr. Praveen Amar is senior scientist and a consultant to Clean Air Task Force (CATF), an environmental organization with focus on protecting the environment through research, advocacy, collaboration, and innovation. His current areas of research are to evaluate climate change and public health benefits of lowering the emissions of black carbon from various stationary and mobile sources. He recently completed a two-year effort for CATF investigating the environmental impacts of natural gas development in Marcellus Shale in Pennsylvania. Before joining CATF, Dr. Amar worked with NESCAUM, a nonprofit association of air quality agencies in the Northeast for 19 years, including 16 years as its Director of Science and Policy, where his key role was to translate the implications of findings of science and developments in technology into workable and cost-effective policy options for the Northeast states. While at NESCAUM, his research projects focused on monetizing the public health benefits of controlling mercury emissions from coal-fired power plants in the U.S. and evaluating future impacts of global climate change on regional ground- level air quality in the U.S. (ozone and fine particles). While at NESCAUM, he testified before the U.S. House and Senate Committees on control of fine particles and the benefits of lowering mercury emissions from coal-fired power plants. Before NESCAUM, he was affiliated with the California Air Resources Board (1977-1992), where he managed programs on air pollution research (including research on acid deposition, atmospheric processes, and ecological effects), strategic planning, and industrial source pollution control. He is a member of the U.S. EPA's Advisory Council on Clean Air Compliance Analysis. He is currently serving on the U.S. National Research Council's Board on Environmental Studies and Toxicology (BEST). He is also a member of the recently formed NRC's "Committee on Scientific Tools and Approaches for Sustainability," that will make recommendations to EPA on applications of sustainability tools to its decision making process. From 2007-2011, he served as a member of EPA's Clean Air Scientific Advisory Committee (CASAC) panel on review of Secondary National Ambient Air Quality Standards (NAAQS) for SO2 and NOx. He recently completed his service on EPA's Clean Air Act Advisory Committee (CAAAC) Climate Change Work Group that addressed approaches EPA may take to control greenhouse gas emissions from large industrial sources. Dr. Amar also serves on the Science Advisory Committee for NYSERDA's environmental research program. He received his Ph.D. in engineering from the University of California, Los Angeles (UCLA) and is a licensed professional engineer in the State of California. He has taught graduate courses in atmospheric processes and air pollution policy at the University of California, Davis, California State University, Sacramento, and at Tufts University in Boston.

Avol,Ed

University of Southern California

Ed Avol is a Professor in the Environmental Health Division of the Department of Preventive Medicine at the Keck School of Medicine at the University of Southern California (USC). He received his B.A. (1973) in Mathematics, with a Minor in Chemistry, from the University of California, San Diego (UCSD) and his M.S. (1974) from the California Institute of Technology (Caltech) in Environmental Engineering Sciences. He is a member of the International Society of Exposure Analysis (ISEA), the Air and Waste Management Association (AWMA), and the American Association for Aerosol Research (AAAR). Professor Avol is a member of the Science Advisory Panel of the Mickey Leland National Urban Air Toxics Research Center (NUATRC), a member of both the (Southern California regional air quality agency) South Coast Air Quality Management District's 2007 Air Quality Management Plan (AQMP) Technical Advisory and General Committees, and served as the ISEA Technical Chair for the 2008 Joint ISEA-ISEE Annual Meeting. He is a current member of the USEPA CASAC SOx/NOx and PM Review Panels. He has been awarded two community health advocate awards for his work on the California Children's Health Study and his advisory work on behalf of populations living in the Los Angeles/Long Beach port communities. Professor Avol's research interests include air pollution exposure assessment and both short-term and long-term human respiratory and cardiolvascular health outcomes. His research has involved controlled chamber exposures of human volunteers to assess acute reversible air pollution respiratory effects in healthy and asthmatic children, adolescents, and adults, long-term community studies to assess chronic respiratory and cardiovascular effects in children and young adults, and air pollution exposure generation, monitoring, and characterization to quantify and understand ambient pollutant burdens.

Balmes,John R.

University of California

Dr. John Balmes is a Professor of Medicine at the University of California, San Francisco (UCSF) where he is the Chief of the Division of Occupational and Environmental Medicine at San Francisco General Hospital (SFGH), Director of the Human Exposure Laboratory of the Lung Biology Center, and the Principal Investigator of the UCSF Pediatric Environmental Health Specialty Unit. He is also Professor of Environmental Health Sciences at the University of California, Berkeley where he is the Director of the Northern California Center for Occupational and Environmental Health. Dr. Balmes received his BA from the University of Illinois (Urbana) in 1972. He received his MD from the Mount Sinai School of Medicine of the City University of New York in 1976. He completed a Residency in Internal Medicine at the Mount Sinai Hospital at New York City in 1979 and a fellowship in Pulmonary Medicine with additional training in occupational medicine at Yale University School of Medicine in 1982. He is board-certified in Internal Medicine and Pulmonary Medicine and actively practices pulmonary and critical care medicine at SFGH. Dr. Balmes leads a research program involving the respiratory effects of ambient air pollutants. In his laboratory at UCSF, he conducts controlled human exposure studies of the acute effects of ozone and other pollutants. At UC Berkeley, he collaborates in epidemiological studies of the chronic effects of air pollutants. He has published over 200 papers or chapters on occupational and environmental respiratory disease-related topics with many of these dealing with the potential health effects of ambient air pollutants, especially ozone. Dr. Balmes' expertise in the health effects of ambient air pollutants has been recognized by multiple awards including the following: an Environmental/Occupational Medicine Academic Award from the National Institute of Environmental Health Science (1991-1996); the Clean Air Research Award from the American Lung Association of San Francisco and San Mateo in 1997; and the Clean Air Award from the American Lung Association of California in 1999; the Carl Moyer Award for Scientific Leadership and Technical Excellence from the Coalition for Clean Air in 2006; and the Robert M. Zweig Memorial Award for Outstanding Contributions in Air Pollution Health Effects Research, South Coast Air Quality Management District. He also has been received two lifetime achievement awards in the field of occupational and environmental medicine, the Robert A. Kehoe Award of Merit from the American College of Occupational and Environmental Medicine in 2006 and the Rutherford T. Johnstone Award from the Western Occupational and Environmental Medical Association in 2010. Dr. Balmes served as a member of the Research Screening Committee of the California Air Resources Board (CARB) from 1998-2007 and was a member of the Air Quality Advisory Committee of the Office of Environmental Health Hazard Assessment of the California Environmental Protection Agency from 1992-2004. He has served the U.S. Environmental Protection Agency in many capacities. In 1992, he served on the Clean Air Scientific Advisory Committee (CASAC) Oxides of Nitrogen Review Panel and was invited to participate in a Workshop on Health Issues on Air Quality Criteria for Ozone and Related Photochemical Oxidants. He contributed to the writing of the Air Quality Criteria Document for Ozone in 1993-1994. He was a Consultant Reviewer of the Air Quality Criteria Document for Particulate Matter in 1995, was invited to participate in a Workshop on Asthma and the Environment in 1996, and was a Consultant Reviewer of the Air Quality Criteria Document for Ozone in 2003. He served on the CASAC Review Panel for Ozone in 2005-2007 and again when it was re-impaneled in 2010. He also served on the Nitrogen Oxides/Sulfur Oxides Review Panel in 2007-2010. In addition, he served as a consultant advisor regarding epidemiologic research on the health effects of ozone to the Health Effects Institute from 1990-1992. Dr. Balmes is currently studying the effects of ambient air pollution on the health of children in the San Joaquin Valley of California through his participation in a Children's Environmental Health Center that is co-funded by the National Institute of Environmental Health Sciences and the U.S. EPA. He is funded

to study the acute cardiovascular effects of ozone in a multi-center controlled human exposure study funded by the Health Effects Institute. He is also funded to study the associations between PM2.5 and hospitalizations for cardiovascular disease and between PM2.5 and biomarkers of risk for cardiovascular disease by the Center for Disease Control. He is the Principal Investigator of the Northern California Education and Research Center, a program to train occupational health and safety professionals that is supported by the National Institute for Occupational Safety and Health. Dr. Balmes is a consultant editor for the Archives of Environmental Health and is an active reviewer for multiple clinical and environmental health journals, including the New England Journal of Medicine, Journal of the American Medical Association, the American Journal of Respiratory and Critical Care Medicine, the European Respiratory Journal, Occupational and Environmental Medicine, and Environmental Health Perspectives. Dr. Balmes is a member of multiple professional societies and organizations, including the American and California Thoracic Societies, the American College of Chest Physicians, the American College of Occupational and Environmental Medicine, the Society for Occupational and Environmental Health, and the International Society for Environmental Epidemiology. He was Chair of the Environmental and Occupational Health Scientific Assembly of the American Thoracic Society in 1997-1999 and President of the California Thoracic Society in 2001-2002. In December 2007, he was appointed by Governor Schwarzenegger to be the physician member of the California Air Resources Board, a position he continues to hold.

Boylan,James

Georgia Department of Natural Resources

Dr. James Boylan is a Program Manager in the Environmental Protection Division of the Georgia Department of Natural Resources (GA DNR) Currently, he manages a team of six Ph.D. scientists in the Air Protection Branch's Data & Modeling Unit. Dr. Boylan is responsible for dispersion modeling with AERMOD and CALPUFF required for PSD permit applications; meteorological, emissions, and air quality modeling required for Georgia's ozone, PM2.5, and regional haze State Implementation Plans (SIPs); development of annual state-wide emission inventories for criteria pollutants; and technical analysis for nonattainment area designation recommendations (ozone, PM2.5, lead, SO2, NO2). 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 (under the direction of Dr. Armistead "Ted" Russell). Dr. Boylan's Ph.D. research included the development of the first comprehensive three-dimensional Eulerian photochemical grid model (URM-1ATM) 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, and regional haze. Also, 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. This includes the first application of a photochemical grid model 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 addition, he developed the "Off-Set Ratio Approach" for accounting for PM2.5 secondary formation from SO2 and NOx in EPA's AERMOD steady-state dispersion model. He holds leadership positions within many regional and national workgroups including: Southeastern Modeling, Analysis, and Planning (SEMAP) Technical Analysis Work Group (Chair), SEMAP Emissions and Air Quality Modeling Workgroup (leader), SEMAP EGU Workgroup (leader), SEMAP On-Road Mobile Workgroup (leader), SEMAP Fire Workgroup (leader), SEMAP Regional Haze Workgroup (leader), Visibility Improvement State and Tribal Association of the Southeast (VISTAS) Emissions and Air Quality Modeling Workgroup (leader), National Inter-RPO Modeling Workgroup for Regional Haze (Co-Chair and Chair), Community Modeling and Analysis (CMAS) External Advisory Committee (only representative from state government), and National Association of Clean Air Agencies (NACAA) Technical Issues Workgroup for the PM Full-Cycle Analysis Project (Co-Chair). In 2001, Dr. Boylan was inducted into the Sigma Xi Scientific Research Honor Society.

Cohen,Aaron

Health Effects Institute

Dr. Aaron J Cohen is Principal Scientist at the Health Effects Institute (HEI) in Boston, MA, where he has worked since 1990. At HEI Dr. Cohen manages an international program of epidemiologic research on the health effects of air pollution, and is involved in developing and managing HEI's US and international research programs. In these capacities he led HEI's review of the literature on the health effects of air pollution in the developing countries of Asia, and is co-coordinator of HEI's Health Outcomes Research program, which assesses the health impacts of actions taken to improve air quality. Past HEI responsibilities have included: the organization and management of epidemiologic research projects such as the Reanalysis of the American Cancer Society and Six-City studies of air pollution and mortality, and multi-city time-series studies of air pollution and daily mortality in Europe, North America Asia and Latin America. Since 1999 Dr. Cohen has served as a Temporary Advisor to the World Health Organization (WHO) on the evaluation of epidemiologic evidence, air pollution health impact assessment, and air quality guideline development. He co-chaired the Expert Group that produced estimates of the global burden of disease due to Ambient Air Pollution for the Global Burden of Disease 2010 project and is a member of Core Analytic team for Global Burden of Disease 2013 http://www.healthmetricsandevaluation.org/gbd Dr. Cohen holds a D.Sc. in Epidemiology (1991), and Masters in Public Health (1985) from the Boston University School of Public Health, where he is Adjunct Assistant Professor of Environmental Health. He is also a Registered Respiratory Therapist (RRT), and worked for 15 years in newborn intensive care, and subsequently as Research Associate in Perinatal Epidemiology, at Brigham and Women's Hospital in Boston.

Cullen,Alison

University of Washington

Alison C. Cullen - Biosketch Dr. Alison C. Cullen is Professor at the Evans School of Public Affairs at the University of Washington. She received a BS in Civil/Environmental Engineering from the Massachusetts Institute of Technology, and an MS in Environmental Health Management and an Sc D in Environmental Health Science from the Harvard School of Public Health. She served as an Environmental Engineer for the US EPA in Region I and also as a consultant at Gradient Corporation, before a post-doctoral research position in Human Exposure Assessment. She accepted a faculty position at the Harvard School of Public Health in 1993. In 1995 she joined the faculty at the Evans School of Public Affairs at University of Washington. She has studied decision making under uncertainty related to environmental health decisions, n particular in the area of human health risk analysis. Her foci include human exposure to toxic pollutants, the value of genetic information in regulatory standard setting under the Clean Air Act, approaches to addressing uncertainty and variability in human health risk, and the application of metagenomic data to policy development. Dr. Cullen currently serves on the Alfred P. Sloan Foundation's Advisory Board on Synthetic Biology. She has also served on the National Research Council, National Academy of Sciences committee reviewing the Coeur d'Alene Superfund Site. Dr. Cullen is a member of the Editorial Advisory Board for Risk Analysis: An International Journal. In addition she is a Fellow of the Society for Risk Analysis, and is a past-president of the society. Other professional honors include the Joan M. Daisey Outstanding Young Scientist Award in 1998, the Chauncey Starr Award of the Society for Risk Analysis in 2002 and the US Environmental Protection Agency's Special Recognition in the Field of Air Toxics in 2003.

Diez-Roux,Ana

University of Michigan

Dr. Ana Diez-Roux, M.D., Ph.D., is a Professor of Epidemiology and Chair of the Department of Epidemiology at the University of Michigan School of Public Health. Dr. Diez-Roux has been an international leader in the investigation of the social determinants of health, the application of multilevel analysis in health research, and the study of neighborhood health effects. Her research areas include social epidemiology and health disparities, environmental health effects (including air pollution), urban health, psychosocial factors in health, and cardiovascular disease epidemiology. Recent areas of work include social environment-gene interactions and the use of complex systems approaches in population health. Her work is funded by the National Institutes of Health (the impact of neighborhood environments and stress on cardiovascular disease as well as race/ethnic disparities in cardiovascular disease) and the Environmental Protection Agency (air pollution and atherosclerosis). Dr. Diez-Roux serves on numerous review and advisory committees and was awarded the Wade Hampton Frost Award for her contributions to public health by the American Public Health Association. She was elected to the Institute of Medicine of the National Academy of Sciences in 2009. Dr. Diez-Roux received an MD from the University of Buenos Aires, a master's degree in public health and doctorate in health policy from the Johns Hopkins School of Hygiene and Public Health.

Eatough,Delbert

Brigham Young University

Dr. Delbert J. Eatough is a Professor of Chemistry in the Department of Chemistry and Biochemistry at Brigham Young University. He holds a B.S. from Brigham Young University (1964) and a Ph.D. in Physical Chemistry from Brigham Young University (1967). He is the recipient of the following awards: (1) NDEA Predoctoral Fellow 1964-1967; (2) 1980 BYU Research Award; (3) 1980 Calorimetry Conference First Sunner Memorial Award; (4) 1986 Brigham Young University Maeser Research and Creative Arts Award; and (5) 1993 American Chemical Society Utah Award in Chemistry. Dr. Eatough's research emphasis is on the study of the atmospheric chemistry of anthropogenic emissions. Current or recent studies include identification of the chemistry of sulfur and nitrogen oxides in polluted atmospheres, the chemical characterization of organic particulate matter as a function of particle size using diffusion denuder technology, chemical characterization of visibility impairing aerosols, development of light extinction budgets, source apportionment of both indoor and outdoor pollution, and development of analytical techniques for sampling atmospheric fine particulate matter and studying atmospheric chemistry. His total publications number over 300. Dr Eatough's recent and current professional service include: (1) Air and Waste Management Association Technical Committees on Atmospheric Chemistry, (Chair, Particles, 1994–1996), Visibility and Indoor Air Source Characterization; (2) Chair of the Basic Sciences Section of the AWMA Technical Council (2000-2002) and Vice-Chair of Technical Council (2002 to present); (3) General Chair of the 1994 Aerosols and Atmospheric Optics International Specialty Conference; (4) Program Co-Chair for the 2000 Annual AWMA Meeting; (5) Chair for an AWMA/EPA Jan 2000 PM and Health Specialty Conference); (6) Member of Editorial Boards of Aerosol Research & Technology, Journal of the Air and Waste Management Association, and Advances in Environ Res.; and (6) former member of the EPA Science Advisory Board (SAB) committee on Environmental Tobacco Smoke.

Foster,William Michael

Duke University Medical Center

Dr. W. Michael Foster, Ph.D., joined the faculty of School of Medicine at Duke University in Durham, NC in 2000 and is a Research Professor in the Department of Medicine in the Division of Pulmonary, Allergy and Critical Care Medicine. He provides on an annual basis lectures to undergraduate students in the Nicholas School of the Environment of Duke University, and mentoring at the post-doctoral level to physician scientists in fellowship training of the Pulmonary Division. In addition to faculty and committee responsibilities as a member of the Department of Medicine, Dr. Foster supervises a Small Animal Model and Human Inhalation Core Facility within the Pulmonary Division. Before coming to Duke University Dr. Foster held faculty and teaching appointments at the State University of New York at Stony Brook (1977-1991), and the Johns Hopkins University School of Public Health (1991-2000). Dr. Foster frequently participates as an ad hoc reviewer for the NIH Center for Scientific Review (2005-present) and was a participant in the peer review of EPA Clean Air Research Centers (2010). Dr. Foster has been a member of the American Physiologic Society (since 1982), and the American Association for the Advancement of Science (2005). At present (2009-2012) Dr. Foster is an EPA Science Advisory Board member of the Ozone Review Panel for the Clean Air Scientific Advisory Committee (CASAC), and previously during 2007 and 2008 he served on the committee of the National Research Council of the National Academies that evaluated morbidity and mortality risk from trophospheric ozone. For the years 2006/2007 he served as the President of the Inhalation and Respiratory Specialty Section of the Society of Toxicology. Dr. Foster joined the editorial board of the Environmental Health Perspectives journal as an Associate Editor in 2010, and is an editorial board member of the American Journal Respiratory Cell and Molecular Biology (2009- present). He is the author or co/author of over 115 journal articles and book chapters that focus on the pulmonary system and/or environmental health. His research interests, and in a sense hallmarks of his scientific career and accomplishments, encompass a paradigm that links cardio-pulmonary injury to air pollutant exposure using established data bases of epidemiological investigations and his own laboratory-based studies on humans and animal models. Dr. Foster’s laboratory is currently supported through extramural funding sources from the Department of Health and Human Services and includes program project (P01, n=1) and investigator initiated (R01, n=5) type awards for which he is the designated Principal and/or Co-Investigator of the research plans. These awards have term dates ranging from 2012 to 2017; 2 additional awards with fundable priority scores are pending NIH Council approval. Research in his lab encompasses 3 separable areas: 1) environmental triggers of exacerbation for obstructive airway disease; 2) development of therapeutic targets to treat inflammatory airway disease; and 3) host (genetic) factors of susceptibility to oxidant lung injury. The end points of this research enhance understanding of health risk from exposure to airborne toxins, and the interdependence between therapy, health risk, and establishment of regulatory standards for air quality that reduce poor health outcomes following exposure to ambient air pollutants.

Frey,H. Christopher

North Carolina State University

Dr. H. Christopher Frey is a professor of environmental engineering in the Department of Civil, Construction, and Environmental Engineering at North Carolina State University. His research interests are measurement and modeling of real-world fuel use and emissions of onroad and nonroad vehicles; modeling and evaluation of advanced energy conversion (e.g., combustion, gasification) and environmental control systems; development and application of methods for quantification of variability and uncertainty and for sensitivity analysis in environmental systems models; and exposure and risk analysis. He has been the principal investigator or co-principal investigator for over 50 externally sponsored research projects, and has published over 90 journal papers, 150 conference papers, and 60 technical reports, and 7 book chapters and one book. He teaches courses in air pollution control, air quality, and environmental exposure and risk assessment. He currently serves on the U.S. Environmental Protection Agency's Clean Air Scientific Advisory Committee (CASAC) and on the Board of Environmental Studies and Toxicology of the National Research Council. He is Chair of the CASAC Lead Review Panel. In recent years, he has served on an EPA Science Advisory Board panel on expert elicitation, an EPA Advisory Council on Clean Air Compliance Analysis panel on EPA's Report to Congress on Black Carbon, National Research Council committees on review of the toxicological assessment of tetrachloroethylene and of EPA's New Source Review program, a NARSTO assessment of multipollutant air quality management, and a World Health Organization working group on uncertainty in exposure assessment. He was a lead author for 2006 guidance by the Intergovernmental Panel on Climate Change (IPCC) regarding uncertainty in greenhouse gas emission inventories. He is a Fellow and Past President of the Society for Risk Analysis and a Fellow of the Air & Waste Management Association. He received the 2008 NCSU Alumni Association Outstanding Research Award and 1999 Chauncey Starr Award of the Society for Risk Analysis. He has a B.S. in Mechanical Engineering from the University of Virginia, and from Carnegie Mellon University he has a Master of Engineering in Mechanical Engineering and Ph.D. in Engineering and Public Policy. Dr. Frey is the principal investigator of grants from the National Science Foundation and U.S. Environmental Protection Agency and contracts from the North Carolina Department of Transportation and United States Department of Transportation. He has received funding from the U.S. Department of Interior (National Park Service) via Louis Berger Group, Inc., the New Jersey Department of Environmental Protection via GbD, Inc., and the Environmental Research and Education Foundation via the University of Nebraska at Lincoln. He was a co-PI on a recently completed grant from the National Institutes of Health. These projects pertain to measurement and modeling of the activity, energy use, and emissions of vehicles and to exposure assessment.

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 (1974) and an M.S. in Toxicology (1976) from the University of Michigan, and a Ph.D. in Toxicology from Massachusetts Institute of Technology (1981), 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 the National Institute of Environmental Health Services (NIEHS), National Institute of Allergy and Infectious Diseases (NIAID), National Coalition for Cancer Research (NCCR), U.S. Department of Defense (DOD), Bureau of Mines, Health Canada, and the U.S. Environmental Protection Agency (EPA). Dr. Gordon currently serves as Chair of the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value 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 genetic host 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 susceptibility factors play a major role in environmental and occupational lung disease. In collaboration with a number of investigators in the department, his laboratory uses classic murine genetics models, computational genomics, and DNA microarrays to identify genes involved in the acute response as well as in the development of tolerance to repeated exposure to inhaled toxicants. 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. He also led a large collaborative effort amongst EPA’s five original PM research centers to evaluate the in vitro and in vivo toxicity of size-segregated PM collected in the U.S. and Europe. Dr. Gordon’s research has been supported by grants from both government agencies and private companies, with core grant research support primarily being from the federal government (U.S. Environmental Protection Agency, Centers for Disease Control, National Institute of Environmental Health Sciences), with additional grant support from state and local governments, and industry. Dr. Gordon is an active member of the Society of Toxicology (SOT), and has served on the Program Committee (2002-2005), the Placement Service (1998-2001), Membership Committee (2009-2012), and as President of its Inhalation Specialty Section during 2002-2003. He has served as a consultant/author to the EPA on issues of pulmonary toxicology related to the development of various documents, and he served on EPA’s Clean Air Scientific Advisory Committee (CASAC) Oxides of Nitrogen (NOx) and Sulfur Oxides (SOx) Primary National Ambient Air Quality Standards (NAAQS) Review Panels.

Griffith,William C.

University of Washington

Dr. William C. Griffith currently is Principle Research Scientist and Senior Biostatistician of the Institute for Risk Analysis and Risk Communication in the Department of Environmental and Occupational Health Sciences at the University of Washington in Seattle, Washington. He was trained as a biostatistician and has collaborated for over three decades in studies of the dosimetry and health effects of toxicants and toxins. His work has included design, data collection and analysis of laboratory and field based studies. In particular he has extensive experience in toxicology, estimation of doses from inhaled materials, and estimation of dose response in terms of age specific incidence rates and prevalence. He has also been active in translating his experience into models that are useful for health protection through publications and participation in national and international committees. He was part of the team at the Lovelace Inhalation Toxicology Research Institute that was the first to show that diesel exhausts are pulmonary carcinogens in laboratory animals. At the University of Washington he has been Director of the Risk Characterization Core for the Child Health Center funded by the Environmental Protection Agency and the National Institute of Environmental Health Science. As director he has designed and developed statistical methods for analysis of a community based randomized intervention to test the effectiveness of educating farm workers about how they can decrease the accidental exposures of their children from pesticides they bring home on their clothes. Dr. Griffith is also involved with studying the naturally occurring toxin domoic acid which is taken up by shellfish and consumed by humans. He is currently part of a national consortium funded by the National Institute of Environment Health Sciences to develop models to predict the toxicity of engineered nano-materials. Dr. Griffith has also collaborated with EPA Region 10, and the states of Oregon and Washington on the application of statistical methods to environmental problems. He has been involved with the Department of Energy's Low Dose Radiation Program to translate laboratory results into mathematical models that will be useful for future regulation of radiation. Currently he serves as a scientific advisor to the U.S. Department of Energy regarding a joint United States/ Russia program to study the health effects of radiation around former nuclear weapons sites in Russia.

Hanna,Steven

Hanna Consultants

Dr. Steven R. Hanna is Founder and President of Hanna Consultants, a small business based in Kennebunkport, Maine. He is also Associate Professor in the Exposure, Epidemiology, and Risk Program of the Department of Environmental Health at the Harvard School of Public Health in Boston. He received BS, MS, and PhD degrees in Meteorology from The Pennsylvania State University. Prior to his current positions, he has been meteorologist and acting director of the NOAA/ERL/ARL Atmospheric Turbulence and Diffusion Laboratory in Oak Ridge, TN, principal meteorologist at ERT in Concord, MA, founder and Vice President of Sigma Research Corp. in Westford, MA, and Research Professor at George Mason University in Fairfax, VA. He is a specialist in atmospheric turbulence and dispersion, in the analysis of meteorological and air quality data, and in the development, evaluation, and application of air quality models. Current research includes development and evaluation of dispersion models for toxic gas releases in city centers, planning and analysis of field experiments and development of improved dispersion models for releases of chlorine and ammonia from railcars, revisions to modules in AERMOD for low wind dispersion, review and evaluation of DOD dispersion models such as SCIPUFF, and enhancement of links between transport and dispersion, exposure and dose, and health modeling systems. Dr. Hanna is a Fellow of the American Meteorological Society (AMS), the 1994 recipient of the AMS Award for Outstanding Contributions to the Advance of Applied Meteorology, and the 2010 recipient of the AMS Helmut Landsberg Award for research on urban meteorology. He is an AMS Certified Consulting Meteorologist. From 1988-1997, he was Chief Editor of the Journal of Applied Meteorology. In March, 1997, he chaired the Peer Review Panel for the Atmospheric Modeling Division of the EPA National Exposure Research Laboratory. In November, 1997, he chaired the Peer Review Panel for the U.S. modeling program for the Khamisiyah, Iraq, chemical releases. In 1998 he chaired the Peer Review Panel for the EPA's new AERMOD model. On 2 June 2003, he testified at a Congressional hearing on the subject of "Following Toxic Clouds: Science and Assumptions in Plume Modeling". In 2005, he was a reviewer of the DTRA Chemical/Biological Defense Science Program. On 12 and 13 June 2013, he was an invited expert panelist in the EPA's Workshop to Discuss Policy-Relevant Science to Inform EPA's Integrated Plan for Review of the NAAQS for Sulfur Oxides (SOx).

Harkema,Jack

Michigan State University

Dr. Jack R. Harkema, DVM, PhD, DACVP is a University Distinguished Professor of Pathobiology at Michigan State University in East Lansing, MI. Dr. Harkema received a DVM (veterinary medicine) from Michigan State University (MSU) and a PhD (comparative pathology) from the University of California, Davis (UCD). After completing a National Institutes of Health (NIH)-sponsored research/residency training program in comparative pathology and toxicology at the UCD, Dr. Harkema joined the scientific staff at the Lovelace Inhalation Toxicology Research Institute in Albuquerque, NM in 1985 as an experimental and toxicologic pathologist. He later became the institute's project manager for pathogenesis research. In 1994, Dr. Harkema joined the faculty of the Department of Pathobiology and Diagnostic Investigation in the College of Veterinary Medicine at MSU. His primary research is designed to understand the pathobiology and toxicology underlying the health effects of outdoor and indoor air pollutants. In 2011, he became the director of the Great Lakes Air Center for Integrated Environmental Research, one of four US EPA-funded Clean Air Research Centers in the nation. Dr. Harkema has authored or co-authored over 200 peer-reviewed scientific publications and has served on several scientific advisory committees, including those for the National Institute of Environmental Health Sciences, the National Toxicology Program, EPA, and the National Academy of Sciences. Besides training graduate students, residents, and postdoctoral fellows in biomedical research, Dr. Harkema also moderates didactic courses in advanced general pathology, integrative toxicology, and pulmonary pathobiology. Dr. Harkema is a diplomate of the American College of Veterinary Pathologists and a member of the Society of Toxicologic Pathologists, the Society of Toxicology, and the American Thoracic Society. He currently receives research funding through grants or contracts from a variety of sources that include the following: the US EPA to explore and elucidate the health effects of muti-pollutant atmospheres in the Great Lakes region and to investigate the nasal toxicology and pathology of chlorine; the American Chemistry Council to study the nasal pathology and toxicology of inhaled olefin compounds in laboratory rats; and the American Beverage Association to study the pulmonary pathology and toxicology in mice orally exposed to various chemical compounds.

Hattis,Dale

Clark University

For the past thirty nine years Dale Hattis has been engaged in the development and application of methodology to assess the health, ecological and economic impacts of regulatory actions. His work has focused on the development of methodology to incorporate interindividual variability data and quantitative mechanistic information into risk assessments for both cancer and non-cancer endpoints. Specific studies have included pharmacokinetic modeling and risks from developmental effects of the organophosphate insecticide chlorpyrifos, dosimetric uncertainties in epidemiological information on dioxin cancer risks, age-related differences in pharmacokinetic processes and susceptibility for carcinogenesis, renal effects of cadmium, reproductive effects of ethoxyethanol, neurological and cardiovascular effects of methyl mercury, neurological effects of acrylamide, chronic lung function impairment from coal dust, four pharmacokinetic-based risk assessments for carcinogens (for perchloroethylene ethylene oxide, butadiene and diesel particulates), an analysis of uncertainties in pharmacokinetic modeling for perchloroethylene and an analysis of differences among species in processes related to carcinogenesis. He is currently a member of the National Toxicology Program Board of Scientific Counselors. In the past he has served as a member of the Environmental Health Committee of the EPA Science Advisory Board, and as a member of the Food Quality Protection Act Science Review Board. He has been a councilor and is a Fellow of the Society for Risk Analysis.

Ito,Kazuhiko

New York City Department of Health

Dr. Kazuhiko Ito is Senior Environmental Epidemiologist at Bureau of Environmental Surveillance and Policy, New York City Department of Health and Mental Hygiene. Dr. Ito received his B.S. in Applied Chemistry from Yokohama National University, a M.S. and Ph.D. in Environmental Health Sciences from New York University. Dr. Ito's main area of expertise is human health effects and exposure assessment of ambient air pollutants, weather, and other environmental stressors. His current research interests include: (1) the roles of particulate matter (PM) chemical components on human heath effects; (2) source-oriented evaluation of PM health effects; (3) the impact of weather conditions on morbidity and mortality; (4) the exposure error associated with weather and ambient air pollution monitoring network and its implication on observed health effects; and (5) identification of sensitive sub-populations to weather and air pollution. Dr. Ito's research has been supported by grants from U.S. Environmental Protection Agency, National Institute of Health, and Health Effects Institute. Dr. Ito authored and co-authored about 50 scientific papers. He published numerous research papers on the mortality and morbidity effects of PM and gaseous pollutants. He has also published research papers on spatial/temporal variations of air pollution as well as source-apportionment. Dr. Ito was a member of the Ambient Air Monitoring and Methods Subcommittee of the EPA's Clean Air Scientific Advisory Committee between 2004 and 2010. Dr. Ito has been a contribution author to the epidemiology chapters of EPA's Integrated Science Assessment documents for: Particulate Matter (1996, 2005, 2009); Ozone (2006, 2013) ; Oxides of Nitrogen (2008), Sulfur Oxides (2008), and Carbon Monoxide (2010), as well as Sulfur Dioxide chapter of the Global Update of WHO Air Quality Guideline (2006).

Jacob,Daniel

Harvard University

Dr. Daniel J. Jacob is the Vasco McCoy Family Professor of Atmospheric Chemistry and Environmental Engineering in the School of Engineering & Applied Science at Harvard University. He received his B.S. (1981) in Chemical Engineering from the Ecole Supérieure de Physique et Chimie de Paris, and his Ph.D. (1985) in Environmental Engineering from Caltech. He went to Harvard as a postdoc in 1985 and joined the faculty in 1987. Jacob's research covers a wide range of topics in atmospheric composition ranging from air quality to climate change. He has been a pioneer in the development of global 3-D models of atmospheric composition, has served as Mission Scientist on seven National Aeronautics and Space Administration (NASA) aircraft missions, and is a member of several satellite Science Teams. He presently leads the NASA Air Quality Applied Sciences Team and the Science Steering Committee for the NASA GEO-CAPE satellite mission. He serves as Model Scientist for the GEOS-Chem global chemical transport model and is the vice-chair of the NASA Earth Science Subcommittee. Among his professional honors are the Haagen-Smit Prize (2010), the NASA Distinguished Public Service Medal (2003), the American Geophysical Union Macelwane Medal (1994) and the Packard Fellowship for Science and Engineering (1989). Jacob has published over 300 papers and trained over 70 Ph.D. students and postdocs over the course of his career. He is the world's top-cited author in geosciences (1997-2007) according to the Institute for Scientific Information. Jacob presently receives research funding from NASA for global model development, satellite data analysis, inverse modeling, air quality applications of Earth Science data (AQAST) and leadership of the SEAC4RS aircraft mission; National Science Foundation for research on the global biogeochemical cycle of mercury; and British Petroleum for the sources contributing to background ozone in the US.

Kaufman,Farla

California EPA

Dr. Farla Kaufman - Biosketch Dr. Farla Kaufman is an Epidemiologist with the Office of Environmental Health Hazard Assessment (OEHHA) at the California Environmental Protection Agency (Cal/EPA). She is also an Associate Professor, Volunteer Clinical Faculty, in the Department of Public Health Sciences, University of California, Davis, School of Medicine. She received a M.Sc. in Exercise Physiology from the University of Waterloo, Canada, a M.Sc. in Nutrition and a Ph.D. in Epidemiology from the University of California, Davis. Dr. Kaufman's research has included studying the effects of nutrition and exposure to environmental tobacco smoke on reproductive outcomes. For the past 13 years she has worked for OEHHA at Cal/EPA mostly with California's Proposition 65, which is concerned with identifying chemicals known to cause cancer, birth defects or other reproductive harm. She has served as a peer review panelist for NIOSH (Special Emphasis Panel , FACA) and for the CDC. She is a member of the International Society of Environmental Epidemiology, and the Genetic and Environmental Toxicology Association.

Kleinman,Michael T.

University of California, Irvine

Dr. Michael T. Kleinman is a Adjunct Professor of Occupational and Environmental Medicine in the Department of Medicine at the University of California, Irvine (UCI), with a joint appointment in the Program in Public Health. He was previously employed by the U.S. Atomic Energy Commission (AEC) as an environmental scientist and he directed the Aerosol Exposure and Analytical Laboratory at Rancho Los Amigos Hospital in Downey, CA. He is a toxicologist and has been studying the health effects of exposures to environmental contaminants 40 years. He holds a M.S. in Chemistry (Biochemistry) from the Polytechnic Institute of Brooklyn and a Ph.D. in Environmental Health Sciences from New York University. He is the Co-Director of the Air Pollution Health Effects Laboratory at UCI. He has published 115 articles in peer-reviewed journals dealing with environmental contaminants and their effects on cardiopulmonary and immunological systems and on global and regional distribution of environmental contaminants including heavy metals and radioactive contaminants from nuclear weapons testing. He has directed more than 50 controlled exposure studies of human volunteers and laboratory animals to ozone and other photochemical oxidants, carbon monoxide, ambient particulate matter (PM) and laboratory-generated aerosols containing chemically or biologically reactive metals such as lead, cadmium, iron and manganese. He has served on two National Academy committees to examine issues in protecting deployed U.S. Forces from the effects of chemical and biological weapons. Dr. Kleinman's current research focuses on neurological and cardiopulmonary effects of inhaled particles, including nanomaterials and ultrafine, fine and coarse ambient particles in humans and laboratory animals. His recent health effects studies have the role of inhaled combustion-generated particles on the promotion of airway allergies and acceleration of development of cardiovascular disease and how these effects are mediated by organic and elemental carbon components of PM. Dr. Kleinman's current research grants and contracts include a grant to examine the effects of inhaled particles on brain stem cells related to tumor development from the California Brain and Lung Tumor Foundation, a contract from the California Environmental Protection Agency to study the role of semi-volatile components of fine and ultrafine PM on cardiac function and atherosclerosis, and a contract to examine the effects of long term inhalation exposure to concentrated fine particles on brain inflammation. Dr. Kleinman is a member of the Board of Scientific Counselors, National Center for Environmental Health/Agency for Toxic Substances and Disease Registry, Centers for Disease Control and Prevention (CDC). Dr. Kleinman has previously served on the U.S. EPA Clean Air Scientific Advisory Committee (CASAC) Ozone panel and currently serves as the Chair of the California Air Quality Advisory Committee. Dr. Kleinman's current research focuses on neurological and cardiopulmonary effects of inhaled particles, including nanomaterials and ultrafine, fine and coarse ambient particles in humans and laboratory animals. His recent health effects studies have the role of inhaled combustion-generated particles on the promotion of airway allergies and acceleration of development of cardiovascular disease and how these effects are mediated by organic and elemental carbon components of PM. Dr. Kleinman's current research grants and contracts include a grant to examine the effects of inhaled particles on brain stem cells related to tumor development from the California Brain and Lung Tumor Foundation, a contract from the California Environmental Protection Agency to study the role of semi-volatile components of fine and ultrafine PM on cardiac function and atherosclerosis, and a contract to examine the effects of long term inhalation exposure to concentrated fine particles on brain inflammation.

Laden,Francine

Harvard School of Public Health, and Channing Division of Network Medicine, Brigham and Women's Hospital and Harvard Medical School

Dr. Francine Laden is the Mark and Catherine Winkler Associate Professor of Environmental Epidemiology at the Harvard School of Public Health, and an Associate Professor of Medicine at the Harvard Medical School and the Brigham & Women's Hospital. Dr. Laden received her ScD in Epidemiology and MS in Environmental Health from the Harvard School of Public Health. Her research interests focus on the environmental epidemiology of chronic diseases, including cancer, respiratory and cardiovascular disease. Her research has or is focused on the following specific categories of exposures: air pollution (from ambient and occupational sources), persistent organic pollutants (POPs; organochlorines), secondhand smoke, and the built environment. Dr. Laden is specifically interested in the geographic distribution of disease risk, incorporating geographic information system (GIS) technology into large cohort studies to explore risk factors such as the built environment and indicators of socioeconomic status, as well as air pollution. She has published key papers on the association of ambient particulate matter and all cause and cardiovascular mortality in the Harvard Six Cities Study and the Nurses' Health Study and on the association of diesel exhaust exposures in the trucking industry and lung cancer mortality. Dr. Laden's current sources of research funding are the National Institutes of Health (NIH) and IBM.

Lehmann,Christopher

University of Illinois

Dr. Lehmann is currently the Assistant Coordinator of the National Atmospheric Deposition Program (NADP) and the Laboratory Director of the Central Analytical Laboratory, the principal subcontract laboratory for the NADP's National Trends Network. He has a Ph. D. in Environmental Engineering from the University of Illinois, specializing in Air Quality Engineering. Dr. Lehmann's expertise is in deposition of atmospheric chemical components across North America (including sulfate), trends analysis of the sulfur and nitrogen species, and analytical procedures concerning wet deposition of analytes associated with these anthropogenic emissions. He also has significant monitoring experience of gaseous sulfur dioxide using passive systems, and supports many projects that monitor for SO2 and sulfate wet deposition. Dr. Lehmann has a long list of journal publications in this area (see attached vitae), with particular emphasis on the trends in sulfate and nitrate deposition. With this particular expertise, and his knowledge of analytical methods and data availability through the NADP, I think that he can provide an abundance of scientific knowledge that the committee would find useful. Dr. Lehmann has served for many years on NADP subcommittees, which are advisory to the network for operation and laboratory methodology. He also has served on Air and Waste Management Association organizing and science committees in the past.

Meng,Qingyu

Rutgers University

Dr. Qingyu Meng is an Assistant Professor at the School of Public Health, Rutgers University. He is also a member of the graduate faculty in Environmental Sciences at Rutgers University. Dr. Meng received his B.A. (1997) in Environmental Chemistry (with a Minor in Law), from Nanjing University, M.S. (2000) in Environmental Science from Chinese Academy of Sciences, M.S. (2004) in Statistics from Rutgers University, and Ph.D. (2004) in Environmental Science from Rutgers University. Dr. Meng's research expertise includes air quality characterization, measuring and modeling individual and population exposures to criteria air pollutants and air toxics, and characterizing uncertainties in exposure analyses. Particularly, his research has involved characterizing human exposures in the real-world conditions and assessing cardiopulmonary effects associated with multipollutant exposures. He has more than 50 peer-reviewed publications. Dr. Meng received funding from NIEHS Center for Environmental Exposures and Disease, and American Lung Association. Dr. Meng is a member of the International Society of Exposure Science. He is also a member of the Environmental and Occupational Health Sciences Institute, and NIEHS Center for Environmental Exposures and Disease. Dr. Meng serves as President of the Tri-State Chapter of the International Society of Exposure Science. Dr. Meng was an invited participant in U.S. EPA's workshop to discuss policy-relevant science for review of the National Ambient Air Quality Standards (NAAQS) for sulfur oxides. He has also participated in Ad Hoc review of proposals for the National Institute of Environmental Health Sciences (NIEHS). Dr. Meng is a recipient of the Independent Investigator Award from American Lung Association in 2012. Prior to his move to Rutgers University, Dr. Meng was appointed ORISE Fellow (2006 – 2010) at National Center for Environmental Assessment, U.S. Environmental Protection Agency, where he was involved in integrated science assessments, which serve as the scientific basis for setting National Ambient Air Quality Standards for criteria pollutants.

Miller,Frederick J.
Independent Consultant
Dr. Frederick J. Miller is currently an independent consultant in dosimetry and inhalation toxicology. He holds a B.S. in Mathematics and Statistics (1967) and an M.S. in Statistics (1968) from the University of Wyoming, and a Ph.D. in Statistics from North Carolina State University (1977). From February, 1991 until April, 2005 he was employed in various capacities at the Hamner Institutes for Health Sciences (formerly CIIT) serving lastly as Vice President for Research. Dr. Miller began his research career in 1968 as a commissioned officer in the U.S. Public Health Service (PHS) and was assigned to the U.S. Environmental Protection Agency (EPA) when it was created in 1970. During his career with EPA, Dr. Miller was noted for bringing together interdisciplinary teams of scientists to solve important public health problems. Upon retirement from the PHS in 1989, he joined the faculty of Duke University Medical Center, continuing his long-standing interest in extrapolation modeling. His primary research interests have included pulmonary toxicology, respiratory tract dosimetry of gases and particles, lung physiology and anatomy, extrapolation modeling, and risk assessment. He is internationally recognized for his research on the dosimetry of reactive gases and has authored or co-authored 165 publications and book chapters and edited 3 books. Dr. Miller received a number of Scientific and Technical Achievement awards from EPA and also the PHS' Outstanding Service Medal. Dr. Miller has served as both a regular and an ad hoc member of EPA's Clean Air Science Advisory Committee and has served on numerous peer review and advisory panels for governmental and private organizations. He is a Fellow of the Academy of Toxicological Sciences and received the Career Achievement Award from the Inhalation Specialty Section of the Society of Toxicology at the 2005 annual meeting. Dr. Miller is also an Adjunct Medical Research Professor in the Department of Medicine, Duke University Medical Center. Dr. Miller's research has been conducted without the support of grants from either government agencies or private companies.

Peden,David

University of North Carolina at Chapel Hill

David B. Peden, MD, MS, FAAAAI, is the Andrews Distinguished Professor of Pediatrics, Medicine & Microbiology/Immunology and Senior Associate Dean for Translational Research of the University of North Carolina School of Medicine. Dr. Peden is an internationally recognized pediatrician and allergist/clinical immunologist and an expert regarding the effect of pollutants in asthma, other lung diseases and systemic diseases. Dr. Peden has authored or co-authored over 132 peer reviewed publications and 18 book chapters and has made over 80 national and international presentations. He is the PI or Project Leader of EPA, NIH and NSFgrants totaling $5.5 million in direct costs focused on the effect of controlled exposures of pollutants to normal and susceptible populations, epidemiological studies of air pollutant effects on human health, genetic factors which influence adverse health outcomes and exploration of interventions to mitigate the effect of pollutants in exposed persons. He is the Director of the UNC Center for Environmental Medicine, Asthma and Lung Biology (CEMALB), which is co-located within the EPA Human Studies Facility on the Chapel Hill Campus. The CEMALB collaborates on a number of translational studies of the health effects of air pollutants in humans with the Environmental Public Health Division of the National Health and Environmental Effects Research Laboratory of the US Environmental Protection Agency. He has also served on numerous EPA and NIH grant review committees and serves as an external advisor for 4 NIEHS/EPA funded Environmental Health Sciences Centers. Dr. Peden also serves as Associate Editor for the Journal of Allergy and Clinical Immunology for environmental issues, and is Chair of the Residency Review Committee of of Allergy and Immunology for the Accreditation Council for Graduate Medical Education (ACGME) as well as past chair of the American Board of Allergy and Immunology. He also is on the Board of Directors of the American Academy of Allergy, Asthma and Immunology. Dr. Peden also serves as Chief of the Division of Allergy, Immunology, Rheumatology and Infectious Diseases, Associate Chair for Research, and Pediatric Program Director of the Allergy and Immunology Training Program of the UNC Department of Pediatrics and as key faculty in the UNC Curriculum for Toxicology. Dr. Peden is the Service Director for the Participant and Clinical Interactions Resource Service of the NC Translational and Clinical Sciences Institute (the UNC CTSA). In this role, he oversees the research infrastructure within the NC TraCS for pediatric and clinical research, the development of a practice based NC Child Health Research Network, and providing a corps of research coordinators to support pilot or early phase investigator initiated clinical research for children. Dr. Peden received a BA in Biology (Honors Program), a MS in Pharmacology and Toxicology and his MD 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, MD.

Pinkerton,Kent
University of California at Davis
Dr. Pinkerton is a Professor of the Department of Pediatrics in the School of Medicine and Professor of Anatomy, Physiology and Cell Biology in the School of Veterinary Medicine at the University of California, Davis (UCD). He is also the Director of the Center for Health and the Environment, Associate Director of the Western Center for Agricultural Health and Safety at UC Davis, and Associate Director of the San Joaquin Valley Aerosol Health Effects Center. Dr. Pinkerton received his B.S. in Microbiology with a minor in Chemistry from Brigham Young University in 1974; his M.S. in Pathology from Duke University in 1978; and his Ph.D. in Pathology from Duke University in 1982. He was a Research Associate in the Division of Allergy, Critical Care and Respiratory Medicine at Duke University Medical Center in 1982, and he remained at Duke University until 1986 as an Assistant Medical Research Professor in the Department of Pathology. Dr. Pinkerton began teaching at UCD in 1986. Dr. Pinkerton's research has focused on the respiratory system and health. General themes addressed: (1) mechanisms of particulate toxicity, (2) effects of oxidant gases on lung injury and repair, (3) effects of environmental pollutants on lung development and immune responses during perinatal life, (4) mechanisms of tobacco smoke-induced lung inflammation and (5) diet, chemotherapeutic agents and inhibitors of inflammation to reduce tumor risk in an animal model of tobacco-induced lung disease. He has published over 160 articles in peer-reviewed, scientific journals, texts, and encyclopedias on those subjects.Dr. Pinkerton has served on numerous advisory committees and other professional societies. He is a member of the American Association for the Advancement of Science, the American Association of Veterinary Anatomists, the American Thoracic Society, the Microscopy Society of America, and the Society of Toxicology. Between 2000 and 2005, Dr. Pinkerton served as a consultant to the Southern California Particle Center and Supersite (SCPCS), a consortium of scientists for UCLA, USC, Caltech, Rancho Los Amigos, UC Irvine and UC Riverside (and not UC Davis) to study the health effects of airborne particles. From 2002-2003, he was a member on the Admissions Advisory Council for the School of Veterinary Medicine at UC Davis, and from 2002 to 2005, he served as the Chair for the Regents' Scholarship Advisory Committee. In 2004 and 2005, he also became the Program Chair-Elect of the Environmental and Occupational Health Assembly for the American Thoracic Society. Dr. Pinkerton continues to be a member of the Chemical Safety Advisory Committee, Environmental Health & Safety, at UC Davis; serves on the Editorial Board for the Journal of Inhalation Toxicology; member of the Nanoscience and Nanotechnology Steering Committee; and member of Academic Planning – Public Health Initiative Workgroup at the School of Veterinary Medicine, UC Davis. Beginning in 2007, Dr. Pinkerton will also serve as the Assembly Chair of the Environmental and Occupational Health Assembly for the American Thoracic Society.

Poirot,Richard L.

Vermont Agency of Natural Resources

Mr. Richard L. Poirot has worked as an Environmental Analyst in the Air Quality Planning Section of the Vermont Department of Environmental Conservation since 1978. Mr. Poirot holds a B.A. from Dartmouth College (1972), where he majored in geography and environmental studies. His responsibilities include developing the technical support for State Implementation Plans (SIPs) to ensure attainment and maintenance of federal and state standards for ozone, particulate matter, and regional haze. Mr. Poirot has also developed interests and expertise in drawing inference on the nature of pollution sources from analysis of ambient air quality and meteorological measurement data. He has been an active participant on the Acid Deposition Committee and the Ambient Monitoring and Assessment Committee for the Northeast States for Coordinated Air Use Management (NESCAUM); the U.S. Environmental Protection Agency (EPA) Acid Rain Advisory Committee; the Data Analysis Workgroup for the Ozone Transport Assessment Group (OTAG); the Science and Technical Support Workgroup for the Federal Advisory Committee on Ozone, Particulate Matter and Regional Haze (OPRHA); the Monitoring and Data Analysis Workgroup for the Mid Atlantic/Northeast Visibility Union (MANE-VU), the Steering Committees for the Interagency Monitoring of Protected Visual Environments (IMPROVE) and the Visibility Information Exchange Web System (VIEWS); the Subcommittee on Scientific Cooperation for the US/Canada Air Quality Agreement; the EPA Clean Air Scientific Advisory Committee (CASAC), the CASAC Ambient Air Monitoring and Methods Subcommittee and the CASAC Panels for Particulate Matter, Ozone, Lead, and Secondary SOx and NOx NAAQS Review; the NARSTO External Review Panel; the EPA Advisory Council on Clean Air Compliance Analysis and the Council Subcommittee on Ambient Air Modeling; and the Board on Environmental Studies and Toxicology (BEST) for the National Research Council. He is not currently a recipient of research grants from the Environmental Protection Agency, other federal agencies, or the private sector.

Rohr,Annette

Electric Power Research Institute

Dr. Annette C. Rohr is a Senior Project Manager in the Air Quality program area of the Environment and Renewable Energy sector at the Electric Power Research Institute (EPRI). She received a bachelor's degree in microbiology and a master's degree in environmental engineering from the University of British Columbia in Vancouver, and a doctorate in environmental health from Harvard University. Prior to her doctoral work, she was employed as an Environmental Scientist at Dames & Moore, where she conducted human health and ecological risk assessments. Her current research focuses on the health effects of air pollution, including particulate matter (PM) and gaseous co-pollutants. Primary research areas include in vitro and in vivo toxicology of PM, air pollution epidemiology, air quality characterization, exposure assessment, and indoor environmental quality. In addition, she manages an interdisciplinary program focused on the potential health and environmental impacts of emerging fuels and technologies, including biomass combustion and carbon capture technologies. Dr. Rohr also conducts health research related to polycyclic aromatic hydrocarbons (PAHs) at Manufactured Gas Plant (MGP) sites. She has authored or co-authored more than 30 peer-reviewed scientific articles.Dr. Rohr has served as a member of two EPA STAR grant panels, for the Particulate Matter Research Center grants and Graduate Fellowships in Green Engineering/Building/Chemistry/Materials. She has served as a member of the External Scientific Advisory Committee for the Harvard-EPA Center for Particle Health Effects. She is active in the Society of Toxicology (SOT) and the International Society for Indoor Air Quality and Climate, and served as a Councilor for the Inhalation and Respiratory Specialty Section of SOT. She serves on the Editorial Board of the journals Indoor Air and the Journal of Clinical Toxicology and is a regular peer reviewer for multiple scientific journals. Dr. Rohr is certified as a Diplomate of the American Board of Toxicology.

Rood,Mark

University of Illinois

Dr. Mark J. Rood is the Ivan Racheff Professor of Environmental Engineering in the Department of Civil and Environmental Engineering at University of Illinois (Urbana-Champaign). He received his B.S.E. in Environmental Engineering from Illinois Institute of Technology (1978), and his M.S.E. (1982) and Ph.D. (1985) in Environmental Engineering from University of Washington. Dr. Rood's research accomplishments are in the areas of sustainability, physical-chemical treatment processes using nanomaterials, and aerosol optics and atmospheric chemistry. His distinguished service is recognized with his past appointments as the Chief Editor of American Society of Civil Engineer's Journal of Environmental Engineering, as Treasurer and member of the Executive Board of the Association of Environmental Engineering and Science Professors,, and as an associate editor for the Journal of Air and Waste Management Association. Dr. Rood's research has been funded by organizations such as National Science Foundation, Department of Defense, National Oceanic and Atmospheric Administration, Grainger Foundation, and the U.S. Environmental Protection Agency..

Sarnat,Stefanie

Emory University

Dr. Stefanie Ebelt Sarnat is Assistant Professor of Environmental Health at the Rollins School of Public Health of Emory University in Atlanta, GA. She holds a Master of Science degree from the University of British Columbia in 2000 and a doctorate from the Harvard School of Public Health in 2005. Dr. Sarnat's research focuses on assessing exposures and corresponding health effects of urban air quality. She currently leads several time-series studies, with specific interests in assessing the impacts of air pollution, meteorological conditions, and weather extremes on health care utilization for cardiorespiratory outcomes. Her studies include a multi-city time-series study funded by the US Environmental Protection Agency as part of the Clean Air Research Centers program. Dr. Sarnat's work on these studies focuses on assessment of health relevant ambient air pollution mixtures, examination of the impacts of exposure measurement error on observed epidemiological findings, and assessing exposure and population factors that may modify health risk. Her studies also include prospective panel-based designs, using detailed field investigation methods to further understand air pollution exposure factors and health effects among susceptible and vulnerable populations. Dr. Sarnat previously served as a member of the program committee for the American Thoracic Society's Assembly on Environmental and Occupational Health. She participated as an expert peer reviewer of drafts of the USEPA Integrated Science Assessments for particulate matter in 2008 and for nitrogen oxides in 2013. She also recently served on the National Research Council's committee on urban meteorology and the Health Effects Institute review panel on ultrafine particles.

Schlesinger,Richard

Pace University

Richard B. Schlesinger is Associate Dean for Academic Affairs and Research in the Dyson College of Arts and Sciences of Pace University, in New York, NY. He is also Professor of Biology and Environmental Science. Dr. Schlesinger has published extensively in the areas of respiratory toxicology of ambient air pollutants, especially related to the deposition of inhaled particles and the relationship of both particulate and gaseous air pollutant exposure to the pathogenesis of non-neoplastic pulmonary diseases. His research was supported by various sources, including NIEHS, USEPA, NIOSH, HEI, Electric Power Research Institute and NIOSH. He was recipient of the Society of Toxicology Inhalation Specialty Section Career Achievement Award, the ILSI Morgareidge Award for achievement in Inhalation Toxicology, and the Herbert Stokinger Award for contributions to the field of industrial and environmental toxicology. He has served on numerous National Academy of Science committees, including the Committee on Research Priorities for Airborne Particulate Matter, the Committee on Gulf War and Health III, and the Committee on Acute Exposure Guideline Levels. He has served as consultant to various governmental agencies, contributing to USEPA Air Pollutant Criteria Documents, and WHO, to the Clean Air for Europe group air quality documents. He has served as a member of the USEPA CASAC Review Panel for NOx and SOx. He is an Associate Editor of the journal, Inhalation Toxicology, and a Fellow of the Academy of Toxicological Sciences.

Sheppard,Elizabeth A. (Lianne)

University of Washington

Dr. Elizabeth A. (Lianne) Sheppard, PhD is professor of biostatistics and environmental and occupational health sciences at the University of Washington. 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 understanding the health effects of environmental and occupational exposures with particular emphasis on statistical methods for environmental and occupational epidemiology. She actively collaborates on a variety of research projects in the environmental and occupational health sciences and leads the statistical analyses for the Multi-Ethnic Study of Atherosclerosis and Air Pollution (MESA Air) study, a 10-year study funded by EPA to determine the effect of long-term air pollution exposure on subclinical progression of cardiovascular disease. Dr. Sheppard directs a program for quantitative training in the environmental health sciences. She is a fellow of the American Statistical Association and a member of the editorial board for Epidemiology. She serves on the Health Effects Institute's Review Committee, the EPA Science Advisory Board ad hoc committee for Toxicological Review of Libby Amphibole Asbestos, and has served on Clean Air Scientific Advisory Committee Special Panels.

Speizer,Frank

Harvard Medical School

Dr. Frank E. Speizer is currently Edward H. Kass Professor of Medicine at the Channing Laboratory of the Harvard Medical School, Boston, MA. From 1988 to 2005, he served as Co-Director of the Channing Laboratory. Dr. Speizer also holds hospital appointments as a senior physician in the Department of Medicine at Brigham and Women's Hospital, Boston; MA and as senior physician in the Department of Medicine at Beth Israel Deaconess Medical Center, Boston. Dr. Speizer received his Bachelor of Arts (A.B.) degree from Stanford University in 1957, and his Doctor of Medicine (M.D.) from the Stanford University Medical School in 1960. He also holds an honorary Master of Arts (A.M.) degree from Harvard University, which was awarded in 1989. Prior to his current appointment at the Channing Laboratory, Dr. Speizer served as Associate Professor of Epidemiology (Physiology) at the Harvard School of Public Health, Boston (1978-1986), and as Associate Professor of Medicine, Harvard Medical School (1978-1986). Since 1986, he has served as both Professor of Medicine at the Harvard Medical School and as Professor of Environmental Sciences at the Harvard School of Public Health. His major professional society involvement includes serving as a Member of the International Society for Infectious Diseases and the American Thoracic Society, National Asthma Research Committee; and as Associate Editor for Environmental Research. An epidemiologist, Dr. Speizer's major research interests are environmentally- and occupationally-related acute and chronic diseases; the natural history of chronic obstructive lung disease; and epidemiologic studies of risk factors for cancer, heart disease and diabetes. He is extensively published in his disciplinary field of expertise.

Suh,Helen

Northeastern University

Dr. Helen Suh is an Associate Professor of Environmental Health in the Bouve College of Health Sciences at Northeastern University. She is also a Senior Fellow at the National Opinion Research Center (NORC) at the University of Chicago and an adjunct senior lecturer at the Harvard School of Public Health Dr. Suh is an expert in air pollution exposure assessment, measurements, and environmental epidemiology. She is currently or has served as the Principal Investigator or Co-Investigator on numerous exposure and health studies, including those to characterize multi-pollutant exposures and their impacts on health, to examine cardiovascular health effects from air pollution, to develop GIS-based spatio-temporal models to estimate chronic particulate exposures, and to quantify exposure error. Dr. Suh currently receives funding from the National Institutes of Health (NIH) for studies examining the chronic health effects from air pollution exposures and evaluating data linkages for the National Children's Study. She also receives funding from the Electric Power Research Institute (EPRI) to examine multiple pollutant impacts on hospital admissions. Previously, Dr. Suh was the Co-Principal Investigator of the Harvard-EPA Particle Health Effects Center study of the Normative Aging Study cohort and the Principal Investigator of the Exposure Core of a National Institute of Environmental Health Sciences (NIEHS) funded Program Project on Particle Exposures and Cardiovascular Health Effects. Dr. Suh has performed advisory work in environmental sciences for numerous international, national, and local organizations. In addition to her work on CASAC, she is currently a member of the Institute of Medicine Committee to Review the Health Effects in Vietnam Veterans of Exposure to Herbicides and is an Associate Editor of the Journal of Exposure Science and Environmental Epidemiology. Dr. Suh received a SB in biology from the Massachusetts Institute of Technology, and an MS and Sc.D. in environmental health sciences from the Harvard School of Public Health.

Ultman,James

Pennsylvania State University

Dr. James Ultman is a Distinguished Professor, Department of Chemical Engineering and Department of Bioengineering, and Chair, of the Intercollege Graduate Degree Program in Physiology, at the Pennsylvania State University. Dr. Ultman earned his B.S. in Chemical Engineering (1965) from the Illinois Institute of Technology; and earned his M.S. (1967) and Ph.D. (1969) in Chemical Engineering, from the University of Delaware. He was an National Institute of health (NIH) Postdoctoral at the University of Minnesota from 1969-70. Dr. Ultman's areas of expertise are: chemical engineering, biomedical engineering, respiratory physiology, the measurement and simulation of the respiratory dosimetry of ozone, and the quantification of ozone reaction with respiratory antioxidants. Dr. Ultman currently serves as an expert panelist on EPA's Clean Air Scientific Advisory Committee (CASAC) Ozone Review Panel. His most-recent prior service on advisory committees includes: (1) Scientific Advisory Committee, CIIT Centers for Health Research, Research Triangle Park, NC, (2001-2003); (2) National Institute of Environmental Health Sciences (NIEHS) Superfund Hazardous Substances Basic Research Program: Study Section Member (1999); (3) EPA Scientific Review Panel: Air Quality Criterion for Ozone (1993); (4) EPA Scientific Review Panel: Research Needs for Ozone (1996); (5) EPA and Basic Acrylic Monomer Manufacturers Workshop: Nasal Dosimetry-Issues and Approaches (1998); (6) EPA and Health Canada Review Panel: Formaldehyde-Assessment for Carcinogenicity (1998); and (7) NIH Program Project Grant (PPG) Scientific Advisor: Mechanism of Heterogeneity in the Lungs, University of Washington (1998-present).

Walcek,Chris

State University of New York

Dr. Chris Walcek is a Senior Research Scientist at the Atmospheric Sciences Research Center of the State University of New York at Albany. He holds B.S., M.S. and Ph.D. degrees in Atmospheric Sciences from the University of California Los Angeles. His area of expertise and research activities focus on physical meteorology, atmospheric chemistry and cloud physics, with specific emphasis on acid rain, ozone formation, heterogeneous chemistry, pollution dispersion, and modeling regional pollution. He chaired the American Meteorological Society Atmospheric Chemistry committee from 1996 to 2000. Over the past 10 years he has served on numerous EPA scientific review panels, and is recently studying alternate physical interpretations of past cloud seeding experiments.

Wyzga,Ronald

Electric Power Research Institute

Dr. Ronald Wyzga is Technical Executive in the Air Quality Health Effects program area of the Environment Sector. He received an AB degree in mathematics from Harvard College in 1964 and an M.S. degree in statistics from Florida State University in 1966. He also received a Sc.D. degree in biostatistics from Harvard University in 1971. Dr. Wyzga has authored an extensive list of publications on his research. His current research activities focus on understanding the relationship between health effects and air pollution, an area in which he has worked for over 30 years. Dr. Wyzga is particularly interested in the design, conduct, and interpretation of epidemiological studies that examine this relationship. He is also interested in health risk assessment methods. Dr. Wyzga has studied the relationship between health effects and air pollution since he joined EPRI in 1975. In addition, he has worked on methods to attach economic values to air pollution damage and effects. Dr. Wyzga has served on, and has chaired, several committees for the EPA Science Advisory Board and National Academy of Sciences. He has also served on advisory oversight committees for several research programs on the health effects of air pollution. In 1990, Dr. Wyzga was elected a Fellow of the American Statistical Association by his peers. Prior to joining EPRI, he worked at the Organization for Economic Cooperation and Development (OECD) in Paris, where he co-authored a book on economic evaluation of environmental damage.