Invitation for Public Comment on the List of Candidates for the Environmental Protection Agency's Clean Air Scientific Advisory Committee

May 18, 2012

The U.S. Environmental Protection Agency (EPA) Science Advisory Board (SAB) Staff Office announced in a *Federal Register* Notice on March 4, 2012 (77 FR 20396-20398) that it was inviting nominations of scientific experts from a diverse range of disciplinary areas to be considered for the Administrator's appointment to the Clean Air Scientific Advisory Committee (CASAC). The CASAC provides independent advice to the EPA Administrator on the technical bases for EPA's national ambient air quality standards. For CASAC, the SAB Staff Office sought nominations of experts in the health sciences, medicine, public health, atmospheric sciences, modeling and/or risk assessment with knowledge and experience in air quality relating to criteria pollutants.

The SAB Staff Office identified 21 candidates based solely on their expertise and willingness to serve. We hereby invite public comments on the attached List of Candidates for appointment or reappointment for consideration by the SAB Staff Office in the formation of this Committee. Comments should be submitted to Dr. Holly Stallworth, Designated Federal Officer, no later than June 8, 2012 at stallworth.holly@epa.gov. E-mail is the preferred mode of receipt. Please be advised that public comments are subject to release under the Freedom of Information Act.

Biosketch

Allen, David T.

University of Texas

Dr. David Allen is the Gertz Regents Professor of Chemical Engineering, and the Director of the Center for Energy and Environmental Resources, at the University of Texas at Austin. He is the author of eight books and over 200 papers. For the past two decades, his work has focused primarily on urban air quality and the development of materials for environmental and engineering education. Dr. Allen was a lead investigator for the first and second Texas Air Quality Studies, which involved hundreds of researchers drawn from around the world, and which have had a substantial impact on the direction of air quality policies in Texas. He has developed environmental educational materials for engineering curricula and for the University's core curriculum, as well as engineering education materials for high school students. His research is supported by the Environmental Protection Agency (for examining the air quality impacts of drought and electrical grids), the National Science Foundation (for smart, green, electrical grids and for the development of high school engineering programs), a consortium including Environmental Defense Fund and natural gas producers (for the measuring the methane emissions of natural gas production), and the federal court system (for measuring air pollutant concentrations in neighborhoods near petroleum refineries). He also directs the Air Quality Research Program funded by the State of Texas. The quality of his work has been recognized by the National Science Foundation (through the Presidential Young Investigator Award), the AT&T Foundation (through an Industrial Ecology Fellowship), the American Institute of Chemical Engineers (through the Cecil Award for contributions to environmental engineering and through the Research Excellence Award of the Sustainable Engineering Forum), the Association of Environmental Engineering and Science Professors (through their Distinguished Lecturer Award), and the State of Texas (through the Governor's Environmental Excellence Award). He has won teaching awards at the University of Texas and University of California, Los Angeles (UCLA). Dr. Allen received his B.S. degree in Chemical Engineering, with distinction, from Cornell University in 1979. His M.S. and Ph.D. degrees in Chemical Engineering were awarded by the California Institute of Technology in 1981 and 1983. He has held tenured faculty appointments at UCLA and the University of Texas and visiting faculty appointments at the California Institute of Technology, the University of California, Santa Barbara, and the Department of Energy.

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 and the Center for Excellence in Environmental Public Health Tracking. 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 San Francisco General Hospital. 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 University of California, 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. 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.

Bartell, Scott

University of California - Irvine

Dr. Scott M. Bartell is Associate Professor in public health, statistics, and epidemiology at the University of California, Irvine. His research interest is environmental health methodology, with applications in environmental epidemiology, exposure science, and risk assessment. Recent projects include epidemiologic analysis of particulate matter exposure and arrhythmia in the Cardiovascular Health and Air Pollution Study, linkage of fate and transport models and a pharmacokinetic model for perfluorooctanoic acid with data from the C8 (ammonium perfluorooctonate) Health Project, and development of statistical methods for biomarker based exposure estimation and for epidemiologic analysis of aggregated data. He has served on a variety of scientific advisory committees for the National Research Council, the Environmental Protection Agency, the Centers for Disease Control and Prevention, the National Institute of Environmental Health Sciences, and the Department of Energy. Dr. Bartell earned his PhD in epidemiology and MS in statistics from the University of California, Davis, and his MS in environmental health from the University of Washington. Current and recent research funding sources include the National Institutes of Health, the Centers for Disease Control and Prevention, the U.S. Environmental Protection Agency, California Air Resources Board, and Garden City Group, Inc.

Demerjian, Kenneth

State University of New York

Dr. Kenneth Demerjian is Professor Emeritus in the Department of Atmospheric and Environmental Sciences, and former Director (1986-2011), Atmospheric Sciences Research Center at the University at Albany, State University of New York (SUNY). Dr. Demerjian holds a B.A. in Chemistry from Northeastern University (1968), and an M.S. (1970) and Ph.D. (1973) in Physical Chemistry from The Ohio State University. His areas of expertise, research activities and interests include: chemical kinetics and mechanistic pathways of elementary atmospheric reactions in polluted and clean atmospheres; instrumentation development and measurement of atmospheric trace gases and particulate matter; development and evaluation of air quality forecast models and diagnostic analysis of atmospheric processes within air quality modeling systems; and sources and evaluation of uncertainty in theoretical models of atmospheric processes, air quality, and pollutant exposure. He has published over 120 journal articles and book chapters in the areas of atmospheric chemistry, air quality measurement and atmospheric modeling and process science.Dr. Demerjian's leadership positions in national or professional associations and related service and advisory activities include: EPA Office of Research and Development (ORD) Board of Scientific Counselors, Executive Committee, 2006 to 2012; Clean Air Science Advisory Committee National Ambient Air Monitoring Strategy (NAAMS/AAMMS) Subcommittee, 2003 to present; Health Effects Institute Research Committee, 2002 to 2010; Science Advisory Committee, Harvard School of Public Health Clean Air Center, 2011 to present; EPA ORD Board of Scientific Counselors Particulate Matter – Ozone (PM/O3) Subcommittee, 2005 to 2006; Science Advisory Committee, John Hopkins PM Center, 2006-2010; Science Advisory Board of the Mid-InfraRed Technologies for Health and the Environment (MIRTHE), NSF Engineering Research Center at Princeton University, 2007 to present; Co-Chair NARSTO Assessment on Multi-pollutant Air Quality Management, 2006- 2009; Board on Oceans and Atmosphere (BOA) of the National Association of State Universities and Land Grant Colleges (NASULGC), 2001 to 2004; National Research Council Committee on Atmospheric Chemistry, August 1999 to 2001; Co-Chair, Synthesis Team – North American Research Strategy for Tropospheric Ozone (NARSTO), 1996 to 2000; Member, National Research Council Committee on Research Opportunities and Priorities for the Environmental Protection Agency (ROPE), 1995 to 1997; Convener, Committee for the Atmospheric Chemistry and Environmental Education in Global Change (ACEED), 1994 to 1999; Chairman, Peer Review Panel – Oxides of Nitrogen/Volatile Organic Compounds (NOx/VOC) Science Program, Environment Canada, 1993; NRC/NAS Committee on Tropospheric Ozone Formation and Measurement, 1989 to 1991; National Research Council – National Academy of Sciences (NRC/NAS) Committee to Evaluate Mass Balance Information for Facilities Handling Toxic Substances, 1987 to 1990; International Joint Commission-Air Quality Advisory Board/Expert Group on Monitoring, 1987 to 1991; Office of Technology Assessment (OTA), U. S. Congress - Advisory Panel on the Assessment of New Clean Air Act Issues, 1987 to 1989; Associate Editor, Atmospheric Environment, 1982 to 1991; Chairman Task Group C: Atmospheric Processes, Interagency Task Force on Acid Precipitation 1982-1983; Testimony before the Committee on Environmental and Public Works U. S. Senate - Outstanding Technical Issues in Atmospheric Processes Related to Acid Deposition, May 25, 1982; Vice Chairman North Atlantic Treaty Organization NATO's Committee on the Challenges of Modern Society NATO/CCMS Working Group - Air Pollution Pilot Study, 1982 to 1984; Associate Editor, Environmental Science and Technology, 1982 to 1984; Co-Chairman Gordon Research Conference, Environmental Science-Air, 1981.

Fine, Philip

South Coast Air Quality Management District

Dr. Philip Fine is currently a Planning and Rules Manager at South Coast Air Quality Management District (SCAQMD) in Diamond Bar, CA. Previous to this position, he served for five years as the Atmospheric Measurement Manager at SCAQMD. He holds a B.S. in Mechanical Engineering from the University of California, Berkeley (1993), and an M.S. (1997) and Ph.D. (2002) in Environmental Engineering Science from California Institute of Technology. Dr. Fine is a nationally recognized expert in the area of atmospheric sciences, with experience covering a broad range of atmospheric measurement, modeling, chemistry, and source apportionment. He oversaw the SCAQMD ambient network of over 35 air monitoring stations, and continues to lead numerous special air monitoring research projects focusing on air toxics and the local impacts of air pollution. Prior to joining the SCAQMD, Dr. Fine was a Research Assistant Professor at the University of Southern California, Los Angeles where he taught courses and conducted extensive research on particulate pollution, its health effects, atmospheric science, and measurement methods resulting in over 47 peer-reviewed scientific publications. He has served and continues to serve on several advisory committees, including: the CASAC Air Monitoring and Methods Subcommittee; an Airport Cooperative Research Program Committee of the Transportation Research Board; the National Association of Clean Air Agencies (NACAA) Monitoring Steering Committee; the External Scientific Advisory Committee for the MESA Air Study at the University of Washington; the External Advisory Committee for a National Institute of Environmental Health Sciences (NIEHS) P01 Grant at the University of Southern California; and numerous U.S. Environmental Protection Agency Science to Achieve Results (STAR) Grant Program Peer Review Panels. Dr. Fine is a member of the American Association for Aerosol Research and the Air & Waste Management Association.

Foster, William Michael

Duke University Medical Center

Dr. W. Michael Foster 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 National Institute of Health (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 tropospheric 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 supported through extramural funding sources of the NIH and encompasses 3 separable areas of research: environmental triggers of exacerbation for obstructive airway disease, development of therapeutic targets to treat inflammatory airway disease, and 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.

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 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.

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 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 toxicologic mechanisms 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 science advisory committees, including those for the National Institute for Environmental Health Sciences (NIEHS), National Toxicology Program (NTP), EPA, and NAS. 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 multi-pollutant atmospheres in the Great Lakes region and to investigate the nasal toxicology and pathology of chlorine; the NIH to study the respiratory toxicology and pathology of engineered nanoparticles and the hepatoxicity of acetaminophen; 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.

Jacksier, Tracey

Air Liquide

Dr. Tracey Jacksier is an International Senior Expert and the Global Research and Development Analysis and Specialty Gas Program Director at the Newark, Delaware Research and Technology Center of Air Liquide, a world leader in gases for industry, health and the environment. She holds a B.S. in Biochemistry from Purdue University (1983) and a Ph.D. in Physical Chemistry from the University of Massachusetts (1992). Dr. Jacksier is responsible for defining the world-wide development of key technologies in specialty gases used for environmental compliance and improved process quality, as well as the recommendation of new analytical technologies within the Air Liquide Group. She is also the Project Manager covering research entitled "Assessment of CO2 Compression and Purification Technology for Near Zero Emissions from Oxy-Coal Combustion" on a CRADA (cooperative research and development agreement) with the National Risk Management Research Laboratory of the U.S. Environmental Protection Agency. She has been with Air Liquide for 20 years; prior to her current position, she has previously served as Analysis Group Manager, Project Manager for Elemental Analysis, and Postdoctoral Researcher. Prior to joining Air Liquide, Dr. Jacksier served in the Cooperative Education Program / Intern and as a Chemist at International Business Machines in NY. She has authored or co-authored more than 100 articles and technical presentations and holds patents in the areas of gas purification and standard manufacturing. Dr. Jacksier currently serves on the advisory boards of Princeton University Engineering Research Center on Mid-InfraRed Technologies for Health and the Environment, and Northwestern University International Institute for Nanotechnology. Dr. Jacksier's research has been supported solely by Air Liquide.

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 NASA aircraft missions, and is a member of several satellite Science Teams. He presently leads the National Air and Space Administration (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, Joel

University of Washington

Dr. 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. He is currently Professor in the departments of Environmental & Occupational Health Sciences, Medicine, and Epidemiology, and the Director of the UW's Occupational and Environmental Medicine Program. His current research activities are primarily focused on environmental factors in cardiovascular and respiratory disease. 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 the UW Northlake Controlled Exposure Facility, a facility customized for experimental inhalation toxicology studies on health effects of combustion-derived pollutants including diesel exhaust. He is also principal investigator of an NIH-funded Specialized Center for Research at the University of Washington on Cardiovascular Disease and Traffic-Related Air Pollution. Dr. Kaufman's research integrates the disciplines of epidemiology, exposure sciences, toxicology, and clinical medicine.

Kleinman, Michael T.

University of California, Irvine

Dr. Michael T. Kleinman is an 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 particulate matter (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.

Lanphear, Bruce

Simon Fraser University

Dr. Bruce P. Lanphear, MD, MPH, is a Clinician Scientist at the Child & Family Research Institute, BC Children's Hospital and a Professor of Health Sciences at Simon Fraser University, both in Vancouver, British Columbia. He received his Medical Degree from the University of Missouri at Kansas City and his Masters degree in Public Health from the Tulane School of Public Health & Tropical Medicine. He completed a residency in Preventive Medicine and Public Health at Tulane University and is board certified in Preventive Medicine and Public Health. Dr. Lanphear completed a 3-year NIH-funded postdoctoral training program in pediatric research at the University of Rochester School of Medicine. From 2001 to 2008, he was the Director of the NIEHS/EPA-funded Cincinnati Children's Environmental Health Center and the Sloan Professor of Children's Health and Environment at Cincinnati Children's Hospital, where he is still an adjunct professor. Dr. Lanphear has conducted numerous epidemiologic studies, including those implicating low-level lead exposure as a risk factor for intellectual deficits and behavioral problems in children. He has also conducted several randomized controlled trials to reduce children's exposure to environmental hazards, including low-level lead exposure and second hand smoke exposure. He is currently the principal investigator for an NIH-funded study to examine the associations of prenatal and early childhood exposures to prevalent environmental neurotoxicants, including lead, pesticides, mercury, Polybrominated diphenyl ethers (PBDE), and environmental tobacco smoke with the development of learning and behavioral problems. He is also a co-Principal Investigator of a 2000-person Canadian birth cohort to evaluate the effect on emerging contaminants on the development of learning problems and behavioral problems in children. Dr. Lanphear has served on numerous scientific advisory committees, including the Children's Environmental Health Expert Advisory Panel of the Commission on Environmental Cooperation (2000-2003), the US EPA's Clean Air Scientific Advisory Committee on Lead Review Panel (2006-2008), the US Environmental Protection Agency Science Advisory Board for Evaluating Dust Lead Standards (2010-2011), the Joint Food and Agriculture Organization World Health Organization (FAO/WHO) Expert Panel for Toxicological and Health Review of Bisphenol A (2010), and the Panel on Health Effects of Low-level Lead, Office of Health Effects, National Toxicology Program, National Institutes of Environmental Health Sciences (2011) and the American Academy of Pediatrics Committee on Environmental Health (2012-1215). Dr. Lanphear is a founding member and Secretary-Treasurer of the International Society for Children's Health and Environment.

McConnell, Rob

University of Southern California

Dr. Rob S. McConnell is Professor of Preventive Medicine at the Keck School of Medicine at the University of Southern California (USC). He is also Deputy Director of the Children's Environmental Health Center. His research interests include effects of air pollution on the development and exacerbation of asthma, and he is the principal investigator of a large prospective cohort study in the Children's USC Health Study to investigate these relationships. His work examining the associations between ozone and fresh traffic emissions with the development of asthma has contributed to the current policy debate on proper regulation of these exposures. Dr. McConnell is also interested in the effects of psychosocial stress and other social characteristics on asthma and on the application of new biomarkers of exposure to air pollutants in population based studies. He teaches the survey course on environmental health in the USC Masters of Public Health program. Dr. McConnell research is on the health effects of environmental exposures, including new onset asthma and respiratory symptoms, with a special emphasis on air pollution.

Nandedkar, Arvind

Howard University

Dr. Arvind K. N. Nandedkar, Professor of Biochemistry and Molecular Biology, College of Medicine, joined the Howard University faculty in 1968. Currently, he serves as the Safety Officer for the College of Medicine Complex. He has served as the Director of the Metabolic Screening- Biochemical Genetics Laboratory, in the Department of Pediatrics and Child Health, and the Acting Director of Clinical Chemistry Laboratory, Howard University Hospital. He is a Diplomate, American Board of Clinical Chemistry (1979) and a Certified Professional Chemist of the American Institute of Chemists. He is a Fellow of the College of the Forensic Examiners (1995) and is Board Certified in Forensic Medicine (1996). Dr. Nandedkar earned his Bachelor of Science degree in Chemistry, Botany, Geology (1959) and the Master of Science degree in Biochemistry and Physiology (1961) from Nagpur University, Nagpur, India. He received his Ph.D. degree in Medical Biochemistry (1966) from The V.P. Chest Institute, Delhi University, India. Dr. Nandedkar completed his post-doctoral fellowships at the Georgetown University (1966-68). He has served as a Visiting Professor at the Cornell Medical Center's New York Hospital (1975-1977, 1979-80) , Mt. Sinai Medical Center and Hospital, New York (1979-80), and the U.S. Army Medical Institute for Research on Infectious Diseases (USAMRIID), Ft. Derrick (1982, 1983). He has received Atomic Energy Commission Fellowship, NIH Fellowship and the National Library of Medicine Fellowship, as well as Visiting Scientist Awards from the U.S. Army Medical Program/Battle Engineering and the Minority Student Science Careers Support Program, the American Society of Microbiology. Dr. Nandedkar is a member of the Association of Clinical Scientists and American Association for Clinical Chemistry as well as a Fellow of the American Institute of Chemists; a Fellow of The American College of Forensic Examiners, a Fellow of Society of Toxicology. Dr. Nandedkar is the first person of color to achieve the National Peer Recognition by his election as the President of the American Institute of Chemists (2000-2002), headquartered in Philadelphia, PA.

Nevius, Tim

Horiba Instruments Inc

Dr. Tim Nevius is an Analytical Specialist at Horiba Instruments in Ann Arbor, Michigan. He received a Ph.D. in Analytical Chemistry from Purdue University inLafayette,Indiana in 1984, and a B.S. in Chemistry from Wright State University in Dayton, Ohio. He has conducted research and designed analytical instruments for measuring many of the high profile criteria emissions from internal combustion engines in the US and internationally. His research includes hybrid vehicles, alternative fuels, diesels, and particulate and gaseous emissions at ultra-low concentrations in ambient air and vehicle exhaust. He has 20 years experience with certifying vehicles in chassis and engine dynamometer test cells, and equal experience with real-world on-board vehicle emission testing. Dr. Nevius has published more than 20 technical papers related to vehicle and air emissions, and holds five patents on emission instrumentation. He serves as an advisor to the Brazilian (CETESB) government, as well as the United Nations committee for global emissions

standards. He is an active participant in the Society ofAutomotive Engineers emissions forums, and he is a member of the American Chemical Society and the Association of Analytical Chemists.

Pope, III, C. Arden

Brigham Young University

Dr. C. Arden Pope III is the Mary Lou Fulton Professor of Economics at Brigham Young University. He received his Ph.D. from Iowa State University (Economics/Statistics, 1981) and was a Fellow at the Harvard School of Public Health (Environmental Health and Public Policy, 1992/93). He has conducted research dealing with various natural resource and environmental issues and his cross-disciplinary research in environmental economics and air pollution epidemiology has resulted in seminal studies on the health effects of air pollution. Dr. Pope has conducted or collaborated on various key studies of human health effects of short- and long-term air pollution exposure, has played prominent roles in reviewing and interpreting this literature, and is one of the world's most widely cited and recognized experts on the health effects of air pollution. He has been the recipient of various honors and awards including the Thomas T. Mercer Joint Prize from the American Association for Aerosol Research and the International Society for Aerosols in Medicine (2001), the Utah Governor's Medal for Science & Technology (2004), and Honorary Fellow of the American College of Chest Physicians (FCCP Hon, 2008). His current research funding comes from National Institutes of Health (through University of Louisville Research Foundation), U.S. Environmental Protection Agency (through The Harvard School of Public Health and The Cleveland Clinic Foundation), and a Mary Lou Fulton Professorship (Brigham Young University).

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. He holds an Sc.D. in Environmental Health from Harvard University (2002). 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 the application of these findings towards the development of novel spatiotemporal models of personal air pollution exposures. Currently, Dr. Sarnat is Principal Investigator of two large scale panel studies, funded by the CDC and the USEPA, investigating in-vehicle multi-pollutant exposures in cohorts of healthy and asthmatic car commuters and corresponding acute cardiorespiratory response. Dr. Sarnat also receives funding from NASA to study satellite remote sensing of particulate matter. Recently, he was awarded the 2011 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. Dr. Sarnat also holds a Visiting Fellowship within the National Center for Environmental Health at the Centers for Disease Control and Prevention.

Suh, Helen

National Opinion Research Corporation (NORC) at the University of Chicago

Dr. Helen Suh is the Program Area Director for Environmental Health at the National Opinion Research Corporation (NORC) at the University of Chicago. Prior to joining NORC in 2011, Dr. Suh was on the faculty in the Environmental Health Department at the Harvard School of Public Health. Dr. Suh is an expert in air pollution exposure assessment, measurements, and environmental epidemiology. She 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.

Turner, Jay

Washington University

Dr. Jay Turner is an Associate Professor of Energy, Environmental and Chemical Engineering at Washington University in St. Louis. Dr. Turner holds B.S. and M.S. degrees from UCLA (1987) and a D.Sc. from Washington University (1993), all in Chemical Engineering. Following his M.S. studies, he spent two years at the University of Duisburg, Germany, where he was a German Academic Exchange Service Fellow. Following his D.Sc. studies, Dr. Turner spent eight months on assignment with the Federal Highway Administration, U.S. Department of Transportation, as an Air Quality Specialist. He subsequently joined the Washington University faculty in 1994 as an Assistant Professor of Engineering & Policy. Dr. Turner's research primarily focuses on air quality characterization and control with emphasis on field measurements and data analysis to support a variety of applications in the atmospheric science, regulation and policy, and health studies arenas. He was the Principal Investigator of the St. Louis – Midwest Fine Particulate Matter Supersite. He manages a field site in East St. Louis that has hosted several Federal Equivalent Method testing campaigns and was recently one of two U.S. Environmental Protection Agency (EPA) coarse particulate matter pilot speciation study sites. Current and recent research projects include estimating lead emissions from piston engine aircraft, source apportionment of ambient particulate matter in Hong Kong, assessing intraurban variability of air toxics metals, and long-term fenceline monitoring for gaseous air toxics and particulate matter species at an industrial facility. Current and recent consulting activities include monitoring guidance and/or data analyses for agencies in four states in support of State Implementation Plan development. He is currently Co-PI on a STAR grant from EPA to the University of Wisconsin to improve particulate matter emission inventories using real-time data,

Co-PI on a grant from NIH to Washington University to examine risk factors for asthma inception, Washington University lead investigator on a contract from the Airport Cooperative Research Program (ACRP) to Sierra Research, Inc. to improve the emission inventory methodology for piston-engine aircraft, and Principle Investigator (PI) on a Memorandum of Understanding (MOU) between ConocoPhillips and Washington University to conduct the Roxana Air Quality Study. He is also Co-PI on a contract from Monsanto and Archer Daniels Midland to conduct technical, economic and life cycle inventory analyses for second generation biofuels. His consulting work is currently funded by EPA through Alion and The McConnell Group to recommend data quality assessment strategies for an exposure study, by EPA through Sonoma Technology to evaluate coarse particulate matter speciation monitoring strategies and to develop software to detect and adjust for artifacts in Aethalometer black carbon data , and by the Millennium Challenge Corporation (MCC) through Social Impact to conduct an air quality impact evaluation of a heating stove replacement program in Mongolia. Dr. Turner has served on several state and local air quality-related advisory committees and the Science and Technical Support Workgroup of the Federal Advisory Committee Act (FACA) Subcommittee for Ozone, Particulate Matter, and Regional Haze Implementation Programs. He currently serves on the Ambient Monitoring and Methods Subcommittee (AMMS) of EPA's Clean Air Scientific Advisory Committee (CASAC), the Independent Technical Advisory Committee of the Texas Air Quality Research Program, and the Health Effects Institute project panel for the National Particle Components Toxicity Initiative. Dr. Turner was general chair for the 2007 Annual Conference of the American Association for Aerosol Research (AAAR) and currently serves on the AAAR Board of Directors.

Weathers, Kathleen

Cary Institute of Ecosystem Studies

Dr. Kathleen C. Weathers received her M.F.S. degree from Yale University in 1983 and her Ph.D. in Ecology from Rutgers University in 1993. She is currently a Senior Scientist at the Cary Institute of Ecosystem Studies (IES) in Millbrook, New York. Dr. Weathers has been involved in air pollution research since the mid-1980s. She has published widely, including significant papers on modeling the effects of landscape features on patterns of atmospheric deposition, tracking the response of terrestrial ecosystems to nitrogen pollution, and illuminating the ecological importance of fog. Much of her research is focused on understanding atmospheric influences and controls on ecosystem processes and biogeochemical cycles in heterogeneous landscapes. Currently, she is working with colleagues and students in California, Chile, Mexico, New York, New England, and National Parks in the eastern U.S. Dr. Weathers has been elected a fellow of the American Association for the Advancement of Science (AAAS), and is a member of the Public Affairs Committee of the Ecological Society of America (ESA). She has been a member of various National Science Foundation and American Association of University Women (AAUW) panels, of the EPA's CASAC NOx and SOx Review Panel as well National Academy of Sciences/Transportation Research Board (NAS/TRB) Committee to evaluate the Congestion Mitigation Air Quality (CMAQ/TEA-21) program. She has co-led workshops and conferences on such topics as the ecological effects of air pollution; strategies for successfully bridging science, policy and management; and linking science, education and outreach.

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.

Yang,Raymond

Colorado State University

Dr. Raymond S. H. Yang is Professor Emeritus of Toxicology and Cancer Biology, and the former leader of the Quantitative and Computational Toxicology Group, at the College of Veterinary Medicine and Biomedical Sciences, Colorado State University (CSU). Between October 2007 and July 2009, Dr. Yang had also been a Visiting Scientist at the National Center for Environmental Assessment, USEPA, Cincinnati, to work on TCDD and chemical mixture toxicology and risk assessment, among other projects. Dr. Yang's research focuses on physiologically based pharmacokinetic/pharmacodynamic (PBPK/PD) modeling, and other biologically-based computer modeling with a special emphasis on the toxicology of chemical mixtures. Dr. Yang has had extensive research and administrative experience in academia, chemical industry, and the federal government. At CSU in the last 20 years, Dr. Yang had served in the capacity as a Department Head, a Center Director, and the Director for a NIEHS Quantitative Toxicology Training Program. Since June 2010, Dr. Yang has retired from the CSU but during his tenure at CSU in the past 20 years or so his research funding was principally from the NIEHS, CDC, and Department of Defense (DOD) for toxicological interactions of chemicals including biologically based computer modeling. Dr. Yang publishes extensively in biomedical journals and is the editor/co-editor of two books; Toxicology of Chemical Mixtures: Cases Studies, Mechanisms, and Novel Approaches (1994), and Physiologically Based Pharmacokinetics: Science and Applications (2005). Dr. Yang is a Fellow of Academy of Toxicological Sciences and served on many prestigious national and international committees and panels. Presently, Dr. Yang is working part-time as an international consultant; part of this service includes Dr. Yang's continuing teaching of his "PBPK Modeling Workshop for Beginners" at CSU and elsewhere in the US, Europe, and Asia.