

**Invitation for Public Comment on the List of Candidates for the
Environmental Protection Agency's Science Advisory Board
PFAS Review Panel**

August 9, 2021

The U.S. Environmental Protection Agency (EPA) Science Advisory Board (SAB) Staff Office announced in a *Federal Register Notice* on June 30, 2021 (86 FR 34744-34745) that it was inviting nominations of experts to be considered for appointment to the SAB PFAS Review Panel. The chartered SAB provides scientific advice to the EPA Administrator on a variety of EPA science and research topics. The SAB Staff Office invited nominations of nationally and internationally recognized scientists with demonstrated expertise in the following disciplines: *Toxicology, specifically: Reproductive/ developmental, hepatic, immunology and neurotoxicology; epidemiology with expertise in: Immunology, endocrinology, reproductive/ developmental and cardiology; physiologically-based pharmacokinetic (PBPK) modeling; physician/clinician with a focus on cardiology; risk assessment; toxicity of chemical mixtures; economist with expertise in health related benefit cost analysis and valuing avoided adverse health outcomes; dose response relationships in economic models.*

The SAB Staff Office received nominations for the attached 41 candidates based on their expertise and willingness to serve. We hereby invite public comments on the attached List of Candidates under consideration for appointment to the SAB. Comments should be submitted to Dr. Sue Shallal, Designated Federal Officer, at Shallal.suhair@epa.gov no later than August 30, 2021. E-mail is the preferred mode of receipt. Please be advised that public comments are subject to release under the Freedom of Information Act.

List of Candidates for the SAB PFAS Review Panel

Barlow, Christy

GZA GeoEnvironmental

Dr. Christy Barlow is a toxicologist at GZA GeoEnvironmental, Inc., a multi-disciplinary consulting firm providing geotechnical, environmental, ecological, water, and construction management services. She has over 15 years of experience performing toxicological evaluations of chemicals, including poly- and perfluoroalkyl substances (PFAS), in a variety of exposure settings, such as contaminated sites, consumer products, and pharmaceuticals. She earned a B.S. in Biology from Eckerd College and a Ph.D. in Cell and Molecular Biology from the University of Vermont. She completed her doctoral work as a National Institute of Environmental Health Sciences (NIEHS) predoctoral fellow, where her dissertation work involved elucidating the role of cellular signaling by oxidant stress and asbestos in the development of asbestos-related diseases. She was subsequently awarded a National Institutes of Health (NIH) postdoctoral fellowship to examine the role of an oxidant-regulated poly(A) polymerase in the regulation of mRNA polyadenylation. She has published peer-reviewed manuscripts encompassing her work throughout her career and has presented at dozens of professional conference proceedings, including on topics related to PFAS exposure, toxicology, and regulatory considerations. She is a member of professional societies including the American Industrial Hygiene Association (AIHA), the International Society of Exposure Science (ISES), the Society of Toxicology (SOT), and the Society for Risk Analysis (SRA). She has served on a review panel for the NIEHS Superfund Hazardous Substance Research and Training program, as well as on a Special Emphasis Panel for Nanomaterials Health Implications Research. In 2012, she served on the Danish Science Advisory Board (SAB) developing a scientific reference document on behalf of the Danish Working Environment Research fund. She currently serves as a member of the Interstate Technology & Regulatory Council (ITRC) Soil Background & Risk Team. As an employee of GZA, she works on multiple projects for which GZA has contracts with various public and private sector clients.

Bartell, Scott

University of California - Irvine

Dr. Scott Bartell is Professor of Environmental and Occupational Health and Statistics, and Associate Dean/Director for Faculty Affairs in the Program in Public Health, at the University of California, Irvine (UCI). His research interest is environmental health methodology, with applications in environmental epidemiology, exposure science, and risk assessment. Since 2006, much of his research has focused on per- and polyfluoroalkyl substances (PFAS), including linkage of fate and transport models and a pharmacokinetic model for exposure reconstruction and epidemiological analyses in the C8 Studies, development of Bayesian statistical methods for biomarker-based pharmacokinetic calibration in PFAS exposure reconstruction, assessment of the potential impacts of exposure measurement error on previous epidemiological findings for PFAS, and a critical review and meta analysis of epidemiological studies on cancer. Dr. Bartell currently serves as Principal Investigator for the UCI PFAS Health Study, the California site for the U.S. Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry (CDC/ATSDR) Multi-Site PFAS Study. His other current and recent research funding sources include the National Institutes of Health, California Air Resources Board, Orange County Health Care Agency, and Syngenta. Dr. Bartell earned his B.A. in Environmental Science from the University of California, Berkeley, his M.S. in Environmental Health from the University of Washington, and his M.S. in Statistics and Ph.D. in Epidemiology from the University of California, Davis. He has served on a variety of scientific advisory committees and panels for the National Academies, the International Agency for Research on Cancer, the U.S. Environmental Protection Agency, CDC, the National Institute of Environmental Health Sciences, the U.S. Department of Energy, the U.S. Food & Drug Administration, and other local and state agencies.

Belzer, Richard

Independent Consultant

From 2001-2020, Dr. Richard Belzer was an independent consultant in regulation, risk, economics, and information quality. Previously he was a visiting professor of public policy at Washington University in St. Louis and staff economist in the Office of Information and Regulatory Affairs in the Office of Management and Budget. He received his Ph.D. in public policy from Harvard University (1989), Master's in Public Policy (MPP) from the John F. Kennedy School of Government (now Harvard Kennedy School) (1982), and MS and BS degrees in agricultural economics from the University of California at Davis (1979, 1980). He is current engaged in research concerning the estimation of benefits and costs accruing to disadvantaged, vulnerable, and marginalized communities. Recent original research has included the development of solutions to longstanding inequities in EPA's drinking water program; the identification, estimation, and analysis of variability in pulmonary function testing; the development of objective economic indicators to identify adverse human health effects; the improved integration of human health risk assessments into benefit-cost analysis; and the analysis of environmental justice ranking schemes. Recent potentially relevant consulting projects

have included the analysis of benefits and costs of proposed consolidated interim storage facilities for spent nuclear fuel, and the benefit-cost analyses of California's proposed drinking water standards for hexavalent chromium and 1,2,3-trichloropropane. Dr. Belzer is a regular contributor to scholarly professions through journal peer review and service to professional societies. He was elected Treasurer of the Society for Risk Analysis (1998, 2000) and elected Secretary-Treasurer of the Society for Benefit-Cost Analysis (2008, 2010). He earned multiple awards for exemplary performance at OMB, given the SRA's Distinguished Service Award (2003), and named a Fellow of the Cecil and Ida Green Center for the Study of Science and Society (1995). He has served as a member of the SAB's Chemical Assessment and Advisory Committee, and on SAB panels on economy-wide modeling and reduced-form tools for estimating air pollution effects and regulatory benefits and costs.

Boyle, Kevin

Virginia Tech

Dr. Kevin Boyle is Professor of Agricultural and Applied Economics at Virginia Tech and is also the Willis Blackwood Director of the Program in Real Estate. He received his BA with honors from the University of Maine, MS in Agricultural and Resource Economics from Oregon State University, and PhD in Agricultural Economics from the University of Wisconsin. Dr. Boyle's research focuses on the development and application of methods that estimate monetary values for goods and services that are not traded in markets. His stated-preference research refines the theoretical and empirical foundations for modeling peoples' choices to estimate values. His hedonic property-value research focus on appropriate measurement of environmental quality in model estimation. He is also has contributed to the development of benefit transfers, which is the reuse of existing economic information to analyze new policy questions. Recent research applications focus on the benefits of surface water quality, improvements in air quality, tree cover in urban areas and human health. He served on the USEPA Science Advisory Board Environmental Economics Advisory Committee (2013-16 and 2017-18), U.S. EPA Science Advisory Board Advisory Council on Clean Air Compliance (2011-2013), and U.S. EPA Clean Air Scientific Advisory Committee Particulate Matter Review Panel (2015-18). Dr. Boyle also served on the Union of Concerned Scientists' Independent Particulate Matter Review Panel (2019-20) and the External Environmental Economics Advisory Committee WOTUS Report Review Committee (2020). He received Virginia Tech's highest research recognition, Alumni Award for Research Excellence, in 2021. Dr. Boyle was recognized with the "Service Award" by the Land, Water and Environmental Economics Section of the Agricultural and Applied Economics Association. He is the lead author of "Due Diligence in Meta-Analyses to Support Benefit Transfers" that received the Publication of Merit from Environmental and Resource Economics. He is a Fellow of the Agricultural and Applied Economics Association and a Fellow of the Association of Environmental and Resource Economists. He has received no new research funding in the last two years..

Bredfeldt, Tiffany

Texas Commission on Environmental Quality

Dr. Tiffany Bredfeldt is a Senior Toxicologist with the Toxicology Division of Texas Commission on Environmental Quality (TCEQ). She received her bachelor's degree in Microbiology and a minor in Spanish from the University of Arkansas (Magna Cum Laude) and earned a Ph.D. in Pharmacology and Toxicology from the University of Arizona. She next worked as a postdoctoral fellow at the University of Texas, M.D. Anderson Cancer Center investigating the impact of early life exposure to endocrine disrupting chemicals. After her postdoctoral fellowship, she joined the TCEQ as a toxicologist. In this role, Dr. Bredfeldt has conducted health effects reviews for impacts associated with proposed air permits and evaluations of ambient air monitoring data. She also derives chemical-specific toxicity factor for environmental chemicals of health concern. Additional areas of some expertise include expert witness testimony and communicating human health risk information at various public meetings. She has served as a member of the Dose-Response Advisory Committee of the Alliance for Risk Assessment. As part of this committee, Dr. Bredfeldt focuses on the emergence of new approaches in risk assessment, particularly those associated with the application of molecular data in human health risk assessment. In addition, she has served as a member of the USEPA Science Advisory Board's Chemical Assessment Advisory Committee, which provides scientific guidance regarding toxicological review of environmental chemicals produced by the Integrated Risk Information System (IRIS). As time permits, Dr. Bredfeldt enjoys working with students and postdoctoral fellows at the University of Texas or with the Society of Toxicology in areas of career planning, project strategy, interpersonal communication, and professional networking. She has no sources of outside funding, and her salary is entirely funded by the state of Texas.

Burman, Sandeep

Minnesota Department of Health

Sandeep Burman has worked in leadership roles on multiple aspects of investigating and remediating the environmental and public health impacts of PFAS for over a decade. Since November 2018, he has served as the State Drinking Water Administrator for Minnesota, a position that resides in the Minnesota Department of Health. Mr.

Burman leads the State's Drinking Water Protection Program, which has the primacy for administration of the Safe Drinking Water Act in the State. He is responsible for oversight of the State's efforts to address all known PFAS impacts in public water supplies, as well as a major effort to assess the statewide occurrence of PFAS in drinking water. He is a member of the Association of State Drinking Water Administrators (ASDWA) and serves on the Association's PFAS Workgroup. In that capacity he participated in the development of two key ASDWA resources on PFAS, "State CEC Rule Development and Management Toolkit", and "PFAS Source Water Guide and Toolkit." From 2013 to 2018, Mr. Burman was the Manager of the Superfund Program in Minnesota, located in the Minnesota Pollution Control Agency. He led the investigation and cleanup of PFAS contaminated sites across the state, including the regional contamination in the Twin Cities metropolitan area. He also served on the Board of Directors of the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) and on the Association's PFAS Workgroup. Mr. Burman was the ASTSWMO representative at the USEPA National Leadership Summit on PFAS in May 2018. In September 2018, he testified on behalf of ASTSWMO at the US House of Representatives hearing on "Perfluorinated Chemicals in the Environment: An Update on the Response to Contamination and Challenges Presented". Sandeep Burman also serves as the Co-Chair of the Environmental Commission of the States (ECOS) PFAS Caucus and was involved in the development of the ECOS White Paper: "Processes and Considerations for Setting State PFAS Standards." Mr. Burman holds a Master's Degree in Hydrogeology (Civil Engineering Minor) from the University of Minnesota, and a Master's Degree in Applied Geology from the Indian Institute of Technology, and is a licensed professional geologist in Minnesota.

Chen, Aimin

University of Pennsylvania

Dr. Aimin Chen is Professor of Epidemiology in the Department of Biostatistics, Epidemiology and Informatics, Perelman School of Medicine, University of Pennsylvania. He is Associate Director of the Integrative Health Sciences Facility Core (IHSFC) in the Center of Excellence in Environmental Toxicology (CEET) in the University of Pennsylvania. He has received MD in Preventive Medicine and MS in Epidemiology from Nanjing Medical University, and he has a PhD in Epidemiology and Health Statistics from Fudan University. He completed postdoctoral training in Perinatal and Pediatric Environmental Epidemiology at the National Institute of Environmental Health Sciences (NIEHS). Dr. Chen has expertise in epidemiology, biostatistics, children's environmental health, exposure assessment, and public health interventions. His research includes informal electronic waste recycling exposure and child development; exposure to polybrominated diphenyl ethers (PBDEs) and per- and polyfluoroalkyl substances (PFAS) and child neurobehavioral development; developmental neurotoxicity of organophosphate ester (OPE) and replacement brominated flame retardants; environmental chemical mixture exposure and child health outcomes. He has studied heavy metals, persistent organic pollutants, endocrine disrupting chemicals, and chemical mixtures. He has published more than 170 peer-reviewed journal papers and presented at numerous national and international academic conferences. In the past two years, his research was supported by the NIEHS. Dr. Chen has served on various National Institutes of Health (NIH) study sections. He is Associate Editor of International Journal of Hygiene and Environmental Health (IJHEH) and on the Editorial Review Board of Environmental Health Perspectives (EHP). He has served on the Board of Directors of the Pacific Basin Consortium for Environment and Health, a forum to promote technology and information exchange on environmental and health issues in the Pacific Basin. He is a member of Project TENDR: Targeting Environmental Neuro-Development Risks, which promotes translation of sciences to reduce children's exposure to developmental neurotoxicants.

Chiu, Weihsueh

Texas A&M University

Dr. Weihsueh A. Chiu, Ph.D. is a professor in the Department of Veterinary Integrative Biosciences in the College of Veterinary Medicine and Biomedical Sciences at Texas A&M University. He received an AB degree in Physics from Harvard University, a MA and PhD in Physics from Princeton University, and a Certificate in Science, Technology, and Environmental Policy from the Woodrow Wilson School of Public and International Affairs at Princeton University. Dr. Chiu was an analyst at the U.S. Government Accountability Office from 1998-2000. He joined the Radiation Protection Division of the U.S. Environmental Protection Agency (EPA) as an environmental scientist in 2000, transferring to the Office of Research and Development in 2002. From 2002-2015, Dr. Chiu led and supervised the development of human health hazard and dose-response assessments for a variety of environmental chemicals, serving as Chief of the Toxicity Pathways Branch from 2012-2015. Dr. Chiu's research has addressed a broad range of topics in human health risk assessment, including toxicokinetics, mechanisms of toxicity, physiologically-based pharmacokinetic modeling, dose-response assessment, characterizing uncertainty and variability, systematic review, meta-analysis, Bayesian and probabilistic methods, and geospatial mapping and data integration for environmental justice. His research has been supported by a number of government agencies, including the National Institutes of Health, the Food and Drug Administration, the U.S. EPA, and the National Academies of Sciences, Engineering, and Medicine (NASEM), as well as other organizations such as California EPA and the Environmental Defense Fund. Dr. Chiu has

participated in or chaired expert review and advisory committees for the National Toxicology Program, California EPA, U.S. Food and Drug Administration, Agency for Toxic Substances and Disease Registry, and NASEM. He has also served on international committees and workgroups for Health Canada, the World Health Organization, and the Organisation for Economic Cooperation and Development. He is currently a Councilor for the Society for Risk Analysis, and previously chaired its Dose-Response Specialty Group.

Chou, Karen

Michigan State University

Dr. Karen Chou is an associate professor of environmental toxicology in the Department of Animal Science and Environmental Science & Policy Program. She received a BS in Human Nutrition from Fu Jen Catholic University, MS in Dairy Science from Michigan State University, and Ph.D. in Toxicology from the University of Michigan. She was a visiting scientist in the Department of Environmental Epidemiology, Harvard School of Public Health. Dr. Chou coordinates the sustainable agricultural management program which synthesizes pesticide risk, pesticidal efficacy, and agricultural practices, to enable flexible management approaches for small and large operations, by providing risk information to users, while attempting to minimize the cost and burden of practicing sustainability. Dr. Chou teaches two graduate and three undergraduate courses in the areas of human health risk assessment, toxicology, food safety, and environmental management, including the topics on endocrine disruptors, metal toxicity, and nanotoxicity. She has studied the toxicity of pesticides, endocrine disruptors, and other environmental chemicals in human and animals. Dr. Chou has developed geospatial exposure models for the interactions between environmental contaminants, human reproductive health, and socioeconomic factors. She has published over 50 peer-reviewed journal articles and book chapters and given over 100 invited talks and conference presentations. Dr. Chou has served as a board member, reviewer, chairperson, or editor on environmental health related topics for local communities, and federal and state agencies, including US Environmental Protection Agency, the National Institute of Environmental Health Sciences, the National Institute for Occupational Safety and Health, Michigan Department of Environmental Quality, and Michigan Department of Agriculture, on health risks of several dozens of substances. She has published seven chapters on the endocrine system and endocrine disruptors and reviewed the toxicity and risk assessment of several per- and polyfluoroalkyl (PFAS) substances.

Clewell, Rebecca

21st Century Tox Consulting

Dr. Rebecca Clewell is an internationally recognized expert on the development of in vitro and computational tools to support chemical safety decisions. Bringing together over 20 years of experience in quantitative biology and chemical dose-response, her current work is focused on designing in vitro tests with the biological fidelity to accurately predict human response and in developing strategies to use these in vitro based points of departure for risk-based decision making. Recently, Dr. Clewell has worked with industry, government, and academic thought leaders around the globe to identify tools and technologies that are needed to build confidence in this new era of toxicology and to develop a framework for efficient chemical testing using primarily in vitro and in silico approaches. This framework, which uses high-throughput screening approaches for chemical triage and biologically complex in vitro systems and computational pathway models to evaluate chemical dose-response, supports chemical decisions from early screening and prioritization to in-depth evaluation of dose-response and margins of exposure. Dr. Clewell's areas of expertise are in using mathematical models to describe chemical pharmacokinetics and response, planning and directing in vivo rodent studies to identify chemical mode of action, and more recently, development of in vitro and in silico tools to evaluate the effect of chemicals on cellular signaling. In her leadership positions at The Hamner Institutes and ScitoVation, she leveraged this diverse research background to build integrative research programs that combined high throughput data streams, omics technologies, fit for purpose in vitro assays, and computational models to support chemical safety assessments based on non-animal methods. At 21st Century Tox Consulting, she works with industry, government agencies and non-governmental organizations to develop nonanimal testing strategies for human safety assessments and to promote implementation of new approach methods in chemical risk assessment.

Cory-Slechta, Deborah

University of Rochester

Dr. Deborah Cory-Slechta is a Professor of Environmental Medicine, Pediatrics and Public Health Sciences at the University of Rochester Medical School, and former Chair of its Department of Environmental Medicine and Principal Investigator (PI) of its National Institute of Environmental Health Sciences (NIEHS) Core Center Grant. She also previously served as Dean for Research at the University of Rochester Medical School, and as Director of the Environmental and Occupational Health Sciences Institute of Rutgers University. Her research, which has resulted in over 200 peer-reviewed publications to date, includes both animal models and human studies focused largely on the consequences of developmental exposures to environmental chemicals on brain development and behavior. Her

earlier work examined the effects of developmental exposures to metals and pesticides in animal models and human cohorts. Over the past 10 years she has undertaken studies of the impact of air pollution on brain development and behavior, with exposures to concentrated ambient ultrafine particles that have led to 20 peer-review publications. Dr. Cory-Slechta has served on advisory panels of the National Institutes of Health (NIH), the Food and Drug Administration (FDA), the Environmental Protection Agency, the National Academy of Sciences, the Institute of Medicine, and the Agency for Toxic Substances and Disease Registry (ATSDR), and on the editorial boards of the journals *Environmental Health Perspectives*, *Neurotoxicology*, *Toxicology*, *Toxicological Sciences*, *Toxicology and Applied Pharmacology* and *Neurotoxicology and Teratology*. She also served on the Board of Scientific Counselors, ATSDR/Centers for Disease Control and Prevention (CDC). In 2017, she was the recipient of the Distinguished Neurotoxicologist Award from the Neurotoxicology Specialty Section of the Society of Toxicology. In 2021, she was the recipient of the Distinguished Toxicology Scholar Award from the Society of Toxicology.

DeWitt, Jamie C.

East Carolina University

Dr. Jamie DeWitt is a Professor of Pharmacology and Toxicology, Brody School of Medicine, East Carolina University and Adjunct Associate Professor, Toxicology Program, Biological Sciences, North Carolina State University. She has bachelor's degrees in Environmental Science and Biology from Michigan State University and doctoral degrees in Environmental Science and Neural Science from Indiana University-Bloomington. Her expertise is in environmental toxicology, immunotoxicology, neurotoxicology, developmental toxicology, biomedical statistics, and risk assessment and communication. Her research focuses on consequences of exposure to emerging environmental contaminants, especially aquatic contaminants, on adult and developing immune systems and on interactions between the immune and nervous systems. She has co-authored nearly 80 scientific publications including two edited books. Dr. DeWitt's funding sources in the last two years include the North Carolina Policy Collaboratory, US Environmental Protection Agency via subcontract from Oregon State University, Department of Defense, National Institute of Environmental Health Sciences via subcontract from North Carolina State University, Brody Brothers Endowment Fund, and North Carolina State University. Dr. DeWitt is a Diplomate of the American Board of Toxicology, past president of the Immunotoxicology Specialty Section of the Society of Toxicology and the North Carolina Society of Toxicology, Associate Editor for *Toxicology and Applied Pharmacology*, and co-editor of the *Molecular and Integrative Toxicology* series. She is a member of the North Carolina Secretaries Science Advisory Board, the Tennessee PFAS External Advisory Group, and the Global PFAS Science Panel, served as a member of the North Carolina Cancer Advisory Research Panel, serves as a grant reviewer for the National Institute of Environmental Health Sciences and Department of Defense, has been an external reviewer for the Agency for Toxic Substances and Disease Registry and the US Environmental Protection Agency, and served as working group member for the International Agency for Research on Cancer.

Finkel, Adam

University of Pennsylvania

Dr. Adam M. Finkel is currently Clinical Professor of Environmental Health Sciences at the University of Michigan School of Public Health. Since leaving federal-government service in 2004, he has been on the faculty of schools of medicine (UMDNJ/Rutgers), public policy (Princeton), and law (University of Pennsylvania), and began his career doing research in environmental economics at Resources for the Future. From 2000 to 2003, Dr. Finkel was Regional Administrator for the U.S. Occupational Safety and Health Administration (OSHA) in Denver, Colorado, responsible for regulatory enforcement, compliance assistance, and outreach activities in the six-state Rocky Mountain region (Region VIII). From 1995 to 2000, he was Director of Health Standards Programs at OSHA headquarters, and was responsible for promulgating and evaluating risk-based regulations to protect the nation's workers from chemical, radiological, and biological hazards. Dr. Finkel holds an Sc.D. in environmental health sciences from the Harvard School of Public Health, a master's degree in public policy from Harvard's John F. Kennedy School of Government, an A.B. in biology from Harvard College, and is a Certified Industrial Hygienist. Dr. Finkel has pioneered methodological improvements in human health risk assessment and cost-benefit analysis for the past 35 years, primarily in the areas of quantitative uncertainty analysis, accounting for interindividual variability in susceptibility (especially to carcinogenesis), and designing regulatory processes to maximize stakeholder input and shed light on disparate public health impacts of regulatory inaction and disparate economic impacts of regulatory action. He is one of two living scholars who served on both the "Blue Book" and "Silver Book" committees of the National Academy of Sciences convened to evaluate EPA's risk assessment methods, and has served on the SAB Environmental Health Committee, the EPA Board of Scientific Counselors, and the National Toxicology Program Executive Committee. He has authored over 50 peer-reviewed articles in the public health, law, economics, medical, and ethics literatures, and has co-authored three books: one on regulations and unemployment, one on risk-based and other methods to set national environmental priorities, and one on increasing the safety of imported consumer products. Dr. Finkel received the Chauncey Starr Award from the Society for Risk Analysis in 1998. In 2006, he received the David P. Rall Award for Advocacy in Public

Health from the American Public Health Association, for “a career in advancing science in the service of public health protection,” and in 2013 received the Harvard School of Public Health Alumni Leadership Award for Public Health Practice. His recent research funding has come from the National Science Foundation, the government of Alberta, Canada, the Robert Wood Johnson Foundation, the Alfred P. Sloan Foundation, the Ewing Marion Kauffman Foundation, and the Public Welfare Foundation. He also receives funding as a plaintiffs’ expert in several cases involving exposure to toxic substances in occupational, para-occupational, and community settings.

Fisher, Jeffrey

ScitoVation

Dr. Fisher retired from the U S Food and Drug Administration in December 2020. Since January 2021 Dr. Fisher has worked part-time assisting mathematical modelers at ScitoVation LLC, Durham, NC as a Senior Science Fellow. To date, Dr. Fisher’s primary research duties have been computational support for Cosmetics Europe, a personal care association, and Brown University (NIH program grant). Dr. Jeffrey Fisher was a research toxicologist with the U.S. Food and Drug Administration, National Center for Toxicological Research from 2010 to 2020. All funding for research was derived from the U S Food and Drug Administration in 2019 and 2020. Before 2010, Dr. Fisher was a Professor at the University of Georgia and a research toxicologist at Wright-Patterson AFB. While at the FDA Dr. Fisher was an advisor and coauthor for perfluorooctanoic acid (PFOA) PBPK model publications in rats and humans. He acted in the same capacity for the published pharmacokinetic evaluations of 6:2 fluorotelomer alcohol in rats and humans. Beyond PFAS, Dr. Fisher’s modeling experience includes working with solvents, fuels, pesticides, perchlorate, bisphenol A and drugs. Dr. Fisher has published over 170 papers on pharmacokinetics and PBPK modeling in laboratory animals and humans. He was a Visiting Scientist at the Chemical Industry Institute of Toxicology in 1996 and at the NIOSH Taft Laboratory in 1999. He served as Adjunct Professor in the Department of Pharmacology and Toxicology at Wright State University. He has served on several national panels and advisory boards for the DoD, ATSDR, USEPA and non-profit organizations. He is Past President of the Biological Modeling Specialty Section of the Society of Toxicology, and reviewer for several toxicology journals. He was a member of the National Academy of Sciences subcommittee on Acute Exposure Guideline Levels (AEGs) from 2004-2010 and Science Advisory Board for the US EPA (2007-2010). He is a fellow of the Academy of Toxicological Sciences and former associate editor for Toxicological Sciences. Dr. Fisher has a B.S. degree in biology from the University of Nebraska at Kearney, a M.S. degree in biology from Wright State University, and a Ph.D. in Zoology/Toxicology from Miami University.

Goeden, Helen

Minnesota Department of Health

Dr. Helen Goeden is a senior toxicologist and human health risk researcher for the Health Risk Assessment Unit at the Minnesota Department of Health (MDH). She received her Ph.D. degree in Environmental Health/Toxicology from the University of Cincinnati. Dr. Goeden led MDH’s effort to revise methods to incorporate multiple exposure durations into the derivation of health-based water guidance, as well as the effort to create the Drinking Water Contaminants of Emerging Concern program within the Health Risk Assessment Unit. Currently, her specific responsibilities include: toxicological assessment of a wide range of environmental contaminants (e.g., industrial, agricultural, pharmaceutical, consumer product); development of state-wide health-based criteria for groundwater and drinking water; leadership role in the development, improvement, and integration of risk assessment methods and public health policies that are protective of sensitive or more highly exposed populations (e.g., infants and children); and research projects specific to emerging environmental health threats (e.g., alternative methods for providing risk context to chemicals with little toxicity information). Dr. Goeden has led the MDH’s PFAS water guidance development effort since 2002 and was instrumental in developing a toxicokinetic model for incorporating placental and breastmilk exposure pathways into MDH’s most recent PFAS guidance. Prior to coming to MDH, Dr. Goeden worked for nine years at the Minnesota Pollution Control Agency, where she supported the work of several remediation programs and led an effort to develop a standardized risk-based site evaluation process, which is still in use today. Dr. Goeden has served as a member of the EPA Chemical Assessment Advisory Committee (CAAC), and several EPA chemical review SABs. She has lectured on toxicology and risk assessment at the University of Minnesota School of Public Health. She is a member of the Society of Toxicology (SOT), past-president of the Northland Regional SOT chapter, and was a founding member of the national Dose-Response Specialty section of the Society for Risk Analysis

Hammitt, James K.

Harvard University

Dr. James K. Hammitt is Professor of Economics and Decision Sciences, Director of the Harvard Center for Risk Analysis, and visiting professor at the Toulouse School of Economics. His teaching and research concern the development and application of decision and risk analysis to health and environmental policy. Professor Hammitt studies the management of long-term environmental issues with important scientific uncertainties (such as global

climate change and stratospheric-ozone depletion) and methods for measuring the value of health risks (including monetary and health-adjusted-life-year metrics). He holds degrees in applied mathematics and public policy from Harvard and worked at the RAND Corporation.

Hooper, Jennifer

CDM Smith

Jennifer Hooper is a professional engineer with 15 years of consulting experience, specializing in research and development of innovative biological and chemical treatment technologies for potable water treatment, with a focus on emerging contaminants. She received a Bachelor of Science in biological systems engineering from the University of Idaho and a Master of Science in environmental engineering with a minor in risk assessment and communication from Cornell University. She is currently pursuing a doctoral degree, funded by the National Science Foundation Graduate Research Fellowship Program, in Civil and Environmental Engineering from the University of Washington. She was a recipient of the American Academy of Environmental Engineers and Scientists (AAEES) Grand Prize Award for Research in 2018, and she received the WaterReuse Association Award for Transformational Innovation. Ms. Hooper has been involved in more than a dozen projects for the Water Research Foundation, Water Reuse Research Foundation, and the Department of Defense's Environmental Security Technology Certification Program. She is currently a co-principal investigator or technical lead on four Water Research Foundation (WRF) projects related to poly- and perfluoro alkyl substances (PFAS). Ms. Hooper also serves as a technical advisor to the Water Research Foundation's for carbon-based advanced treatment for potable reuse. As a senior engineer at CDM Smith Inc., she directs water, reuse, and wastewater applied research projects and treatability studies at the firm's in-house Research and Testing Laboratory located in Bellevue, Washington. Ms. Hooper's treatment experience encompasses ozonation, ultraviolet (UV) disinfection, advanced oxidation, coagulation, conventional and biologic filtration, carbon adsorption, ion exchange, microfiltration/ultrafiltration, nanofiltration, and reverse osmosis. She has applied these and other technologies to assess PFAS removal for full-scale implementation with water suppliers in California, Massachusetts, North Carolina, New Jersey, New York, and South Carolina.

Irwin, Elena G.

The Ohio State University

Dr. Elena Irwin is a Distinguished Professor of Food, Agricultural, and Environmental Sciences in Economics and Sustainability at Ohio State University. She is also the Faculty Director of the Sustainability Institute at Ohio State, an interdisciplinary university-wide institute that fosters sustainability research, teaching, and community engagement. Dr. Irwin holds a B.A. from Washington University and a Ph.D. in Agricultural, Environmental, and Resource Economics from the University of Maryland. Dr. Irwin studies land use and ecosystem services in urban, rural and regional contexts in the U.S., including the impacts of land use change on water quality and other ecosystem services. Her research includes integrated modeling of regional economic and ecological systems, climate change, and sustainability assessment of environmental policies at local, regional, and national scales. She leads or co-leads multiple programs funded by the National Science Foundation (NSF) with a focus on community engagement and broadening participation, including the EmPOWERment Convergent Graduate Training Program for a Sustainable Energy Future and stakeholder participatory modeling research on food, energy, and water systems in the Great Lakes region. Dr. Irwin has extensive experience as a national research leader and advisor on environmental economics and sustainability topics, including as a member of the US EPA Board of Scientific Councilors Subcommittee for Sustainable and Healthy Communities and National Research Council and NSF research committees. She served on NSF's Advisory Committee for Environmental Research and Education subcommittee on Sustainable Urban Systems. She is an elected member of the Agricultural and Applied Economics Association Executive Board and previously served on the boards of the Association of Environmental and Resource Economists and the North American Council of Regional Science. In addition to funding from multiple programs at the National Science Foundation, Dr. Irwin's research has received funding in recent years from the National Institutes of Food and Agriculture, Ohio Sea Grant Program, and Ford Motor Company.

Kamendulis, Lisa

Indiana University

Dr. Lisa M. Kamendulis is currently an Associate Professor in the Department of Environmental and Occupational Health at Indiana University, Bloomington. She received her PhD in Toxicology from the University of New Mexico, followed by post-doctoral studies in Pathology and Biochemistry at Indiana University School of Medicine. Her research focuses on elucidating the mechanisms involved in toxic responses elicited by environmental factors, and how these exposures impact the development of chronic human diseases such as cancer. Current research focuses on investigating whether exposure to perfluoroalkyl substances (PFAS) promotes the progression of pancreatic cancer and uses animal models, and molecular and analytical chemistry approaches to quantify oxidative stress and other

biomarkers related to environmental exposures and chronic diseases. Information from these studies may ultimately lead to novel disease prevention/intervention strategies and will provide the framework to assess the relative human risk from exposure to toxicants. She has published over 65 peer-reviewed manuscripts, and book chapters, and has mentored numerous graduate and post-doctoral students, and taught courses in the areas of environmental health, toxicology and environmental carcinogenesis. Dr. Kamendulis has served the science of toxicology both locally and nationally as a peer reviewer for several EPA panels and chemical toxicity evaluations, has served as Councilor, and Secretary-Treasurer of the Ohio Valley Society of Toxicology, as a member and chair of the Placement Committee, and Councilor in the Carcinogenesis Specialty Section of the Society of Toxicology.

Keeler, Bonnie

University of Minnesota

Dr. Bonnie Keeler is a McKnight Presidential Fellow and Charles M. Denny Chair in Science, Technology, and Environmental Policy at the University of Minnesota's Humphrey School of Public Affairs. She has an undergraduate degree in Biology, a Master's degree in Ecology, and a Ph.D. in Natural Resources Science and Management with a specialization in Environmental Economics. Dr. Keeler has expertise in integrated assessment modeling, benefit cost analysis, water and agriculture policy, non-market valuation, and environmental justice. She integrates quantitative modeling, economic valuation, and spatial analyses with qualitative and participatory approaches to capture multiple perspectives on complex social and environmental problems. Current projects include investigating the effects of climate change on water resources, environmental justice implications of nature-based solutions, governance dimensions of state and tribal groundwater management, and quantification of the social costs of water pollution. Her research has been published in top journals; including Science, Science Advances, The Proceedings of the National Academy of Sciences, Nature Sustainability, and the Annual Review of Resource Economics. She has been principal or co-principal investigator on 30 grants, totalling over \$12 million in funding. Dr. Keeler's funding sources in the last two years include the National Science Foundation, the Joyce Foundation, the McKnight Foundation, the State of Minnesota, and the National Academies Keck Futures Initiative. Keeler is the Co-Director of the CREATE Initiative, a community-engaged research project that aims to leverage the resources of the research university in service to the needs and priorities of environmental justice organizations in urban watersheds. Keeler is a Co-Investigator of the Minneapolis-St. Paul Urban Long-Term Ecological Research site where she oversees research on contemporary and historical dynamics of green infrastructure investments and wealth distribution. Keeler also directs the Beyond the Academy network - a coalition of university leaders seeking to reform academic models to promote actionable, engaged scholarship on sustainability. A member of the External-Environmental Economics Advisory Council, Keeler and colleagues recently completed a non-partisan review of the economic analysis of the Trump Administration's Navigable Waters Protection Act. She is a frequent advisor and collaborator on state-level water planning, working closely with the Minnesota Environmental Quality Board, Minnesota Department of Health, Pollution Control Agency, Department of Natural Resources, Board of Soil and Water Resources, and the Clean Water Council.

Keiser, David

University of Massachusetts Amherst

Dr. David A. Keiser is a Professor of Resource Economics at the University of Massachusetts Amherst. He holds affiliations with the Dyson School at Cornell, the Center for Agricultural and Rural Development at Iowa State, and the Center for Behavioral and Experimental Agri-Environmental Research. He was previously an Assistant Professor of Economics at Iowa State and served as the Division Director of Resource and Environmental Economics at the Center for Agricultural and Rural Development. Dr. Keiser holds a Ph.D. and M.Phil. in Environmental and Natural Resource Economics from Yale University, an M.S. in Agricultural and Applied Economics from the University of Georgia, and a B.A. in Mathematics and Religious Studies from the University of Virginia. Dr. Keiser is an environmental and natural resource economist with a focus on the economics of U.S. water quality policy. His research explores both surface and drinking water quality issues. Dr. Keiser's work has appeared in leading economic and scientific journals, including Science, Proceedings of the National Academy of Sciences, Science Advances, Quarterly Journal of Economics, and the Journal of Economic Perspectives, among others. His work has been cited in Congressional testimony, incorporated in graduate training at leading universities, and appeared in major news outlets. The journal Science featured his 2019 co-authored paper on the Clean Water Act as an Editors' Choice. From 2019 to 2020, Dr. Keiser co-chaired a review of the economic analyses that supported the Clean Water Rule's repeal and its replacement with the Navigable Waters Protection Rule. The External Environmental Economics Advisory Committee supported this review. Dr. Keiser is a member of the Editorial Board of Land Economics and is a co-founder of the Social Cost of Water Pollution Workshop. His research's recent funding sources include the United States Department of Agriculture and the United States Environmental Protection Agency.

Klaunig, James E.

Indiana University

Dr. Klaunig received his B.S. degree in Biology from Ursinus College and a Ph.D. in Pathology from the University of Maryland. He served as Assistant/ Associate Professor of Pathology and Associate Professor of Pharmacology and Therapeutics at the Medical University of Ohio from 1982 to 1991. After a one-year sabbatical leave at the Institute of Toxicology (CIIT) he joined Indiana University School of Medicine as Professor and Director of Toxicology. Concurrently he also served as the State Toxicologist and Director of the State Department of Toxicology for the State of Indiana. In 2010, he was recruited as the founding Professor and Chair of the Department of Environmental Health at the newly formed School of Public Health at Indiana University Bloomington. Dr. Klaunig's research has focused on understanding the toxicological and pathological effects of chemical agents including pharmaceuticals. His work has concentrated primarily in chemically induced carcinogenesis with particular interest in the mechanisms by which agents induce liver and lung cancer. The foundation of his mechanistic studies has been the application of these results to further understanding and producing scientifically based human risk assessment. His laboratory has produced over 300 peer-reviewed manuscripts and book chapters. His publications are highly referenced and cited as is evident by his designation in 2013, 2015, and again in 2017 as a highly cited author in pharmacology and toxicology by the Thomson Reuters'. Dr. Klaunig is recognized as a highly effective teacher and mentor for graduate and medical students. His teaching has been recognized by his awarding of the IU Trustee's Teaching Award in 2005 by Indiana University and the Education award from the Society of Toxicology in 2020. He was an associate editor of Toxicological Sciences and Editor-in-Chief of Toxicologic Pathology. His research, teaching, and service work, has been recognized through honors bestowed upon him, including the Sagamore of the Wabash by the Governor of Indiana. He was Outstanding Senior Researcher in the IUSPH in 2016, was also elected to his high school Hall of Fame (Freehold NJ). , received the Dubois Award of the Midwest SOT. More recently he was elected a fellow to the AAAS (2020), received the Mid-Atlantic SOT Ambassador Award in 2019 and the International Regulatory Toxicology and Pharmacology Achievement Award in 2020.

Leung, Angela M.

University of California Los Angeles

Dr. Angela M. Leung is an Associate Professor of Medicine at the University of California Los Angeles (UCLA) David Geffen School of Medicine and an endocrinologist at UCLA Health and the Veteran Affairs (VA) Greater Los Angeles Healthcare System. After pursuing her receiving her medical degree from the Boston University School of Medicine, Dr. Leung completed her internal medicine residency and endocrinology fellowship training at Boston University School of Medicine and Boston Medical Center. She also obtained a Master of Science degree in Epidemiology at the Boston University School of Public Health. Dr. Leung has clinical and research interests in thyroid disorders, specifically regarding environmental thyroid toxicants, iodine status, and maternal-child thyroid health. Her research has been funded by the National Institutes of Health (NIH) and the VA Clinical Science Research and Development Service; currently, she is principal investigator of a VA study examining the associations between iodinated contrast dye exposure, thyroid dysfunction, cardiac outcomes, and mortality among Veterans. Dr. Leung also serves on the board of directors of the American Thyroid Association (ATA); is Editor-in-Chief of Clinical Thyroidology, one of the ATA's journals; is president-elect of the ATA's Women in Thyroidology task force; and is past-chair of the ATA's Public Health Committee. She has served on multiple NIH study sections and draft toxicity assessment review committees for the U.S. Environmental Protection Agency (EPA) and the global Organization for Economic Cooperation and Development (OECD), in relation to the exposure risks of various environmental thyroid disruptors that include GenX, PFBS, and perchlorate.

Lipworth, Loren

Vanderbilt Medical Center

Dr. Loren Lipworth is Professor of Medicine and Associate Director of the Division of Epidemiology at Vanderbilt University Medical Center. She holds a B.S. in Neuroscience from Brown University, and a Sc.D. in epidemiology from the Harvard School of Public Health. Her research is focused on biologic and environmental risk factors for chronic diseases, including cancer, cardiovascular disease and kidney disease, with a focus on health inequities. She has extensive research experience in the design and conduct of epidemiologic studies utilizing large-scale population-based epidemiologic cohorts and electronic health record databases, many involving identifying associations with biomarkers. She has conducted and published numerous large cohort studies of individuals and workers with exposure to various chemicals and other environmental exposures, including trichloroethylene, welding fumes, aromatic amines, and aircraft and satellite manufacturing. Dr. Lipworth is the site principal investigator of a study funded by the National Heart Lung and Blood Institute to examine the association of genetic

factors with response to pharmacotherapy for Type 2 diabetes, and of a study funded by the National Cancer Institute to examine molecular characteristics and racial disparities in endometrial cancer. She has been a co-investigator since its inception of the Southern Community Cohort Study (SCCS), an ongoing prospective cohort study funded by the National Cancer Institute of ~86,000 Black and White individuals of generally low socioeconomic status residing in the southeastern United States. She also serves as a co-investigator of numerous studies funded by the National Heart Lung and Blood Institute to study circulating metabolites and gut microbial metabolites in relation to cardiometabolic disease, the National Institute of Diabetes and Digestive and Kidney Diseases to study abnormalities of mineral metabolism and kidney, cardiovascular and bone disease, and the National Institute on Aging to study diabetes, dementia and aging at home. Dr. Lipworth is a member of the Epidemiology of Endometrial Cancer Consortium (E2C2) and the Ovarian Cancer in Women of African Ancestry (OCWAA) Consortium.

Loccisano, Anne

Exponent Inc

Dr. Anne Loccisano is a consultant with Exponent, Inc in Alexandria, VA, where her work includes exposure and risk assessment, pharmacokinetic modeling, regulatory compliance, safety assessment, and litigation support for a number of agents, including perfluorinated compounds, volatile organic compounds, pesticides, metals, consumer products, ethanol, and pharmaceuticals. She holds a BS in chemistry from Allegheny College and a PhD in chemistry from Duquesne University. She was a postdoctoral fellow at The Hamner Institutes where her work focused on the development of pharmacokinetic models to aid in risk assessment for perfluorinated surfactants. She then served as an Oakridge Institute for Science and Education (ORISE) fellow in the Integrated Risk Information System (IRIS) division of the US Environmental Protection Agency (EPA), where her work involved review, integration, and synthesis of toxicological data as well as development of pharmacokinetic models for chemicals of agency concern, and she has worked in the consumer products industry, where her responsibilities included safety assessment and regulatory compliance. She served as a peer reviewer on the 2017 EPA panel for Proposed Modeling Approaches for a Health-Based Benchmark for Lead in Drinking Water on the 2019 EPA panel for evaluation of the All Ages Lead Model (AALM). Dr. Loccisano has authored or co-authored a number of peer-reviewed journal articles and book chapters and is an active member of the Society of Toxicology (SOT). She currently serves as the Vice-President-elect of the Occupational and Public Health Specialty Section (OPHSS) of SOT and as a Councilor for the Computational Toxicology Specialty Section (CTSS) of SOT. Dr. Loccisano is a Diplomate of the American Board of Toxicology (DABT). She actively contributes to the toxicology community as a reviewer for peer-reviewed journals, participating as a mentor through the SOT Chat with an Expert Program, and as a reviewer of SOT session proposals, abstracts, and publications for various awards given by component groups.

Lumen, Annie

U.S. Food and Drug Administration (FDA)

Dr. Annie Lumen is a Senior Staff Fellow and Principal Investigator in the Division of Biochemical Toxicology at the National Center for Toxicological Research of the U.S. Food and Drug Administration (FDA). She also is an Adjunct Faculty in the College of Medicine at the University of Arkansas Medical Sciences. She holds a M.Sc. in Biological Sciences with a dual degree of B.E. in Chemical Engineering from the Birla Institute of Technology and Sciences, BITS-Pilani, India, and received her Ph.D. in Biological Sciences from Drexel University. Her research interests focus on developing computational tools, specifically Physiologically Based Pharmacokinetic (PBPK) modeling, in support of regulatory decision-making with a focus on perinatal life-stages. As the principal investigator, her research has been funded by several intramural grants from the FDA's Office of Women's Health, Medical Counter Measures Initiative, and Perinatal Health Center for Excellence. She has trained postdoctoral students in the development and application of computational modeling tools as a part of these funded studies. She has chaired the Committee for the advancement of FDA science and is a member of the FDA modeling and simulations leadership circle leading the risk assessment interest group. She has served as a grant reviewer, subject matter expert, and external peer reviewer in toxicological review panels for the Environmental Protection Agency (EPA). She is a member of the in vitro to in vivo extrapolation working group of the interagency coordinating committee on the validation of alternative methods (ICCVAM IVIVEWG) and the toxicokinetics expert group of the Working Group of the National Coordinators of the Test Guidelines Programme, Organization for Economic Co-operation and Development (OECD). She currently also serves as a member of the steering committee of the PBPK working group of Health and Environmental Sciences (HESI) and as an expert member of the International Agency Research on Cancer Monographs Programme of the World Health Organization (WHO IARC).

Ma, Lala

University of Kentucky

Dr. Lala X. Ma is an Assistant Professor of Economics in the Gatton College of Business and Economics at the University of Kentucky. Dr. Ma holds a B.A. and M.A. in Economics from Tufts University, a B.A. in Mathematics from Tufts University, and an M.A. and Ph.D. in Economics from Duke University. She joined the faculty at the University of Kentucky in 2014. Dr. Ma is an environmental economist who specializes in non-market valuation. Her work combines economic modeling with data on housing markets, environmental quality, and/or health outcomes to estimate the value of environmental services as an input into policy. Her research can be broadly categorized into three areas: valuation as revealed through housing markets (or “sorting” and “hedonic valuation”), valuation using direct impacts on health or environmental outcomes, and distributional and equity issues related to pollution exposure. Dr. Ma’s research has been funded by the U.S. Department of Agriculture and the National Institutes of Health through subaward agreements. From 2019 to 2020, she was a faculty fellow with the U.S. Environmental Protection Agency’s Office of Resource Conservation and Recovery. She is currently serving a five-year term on the Editorial Council for the Journal of Environmental Economics and Management.

Meek, Bette

University of Ottawa

Dr. Meek is the Associate Director of Chemical Risk Assessment at the McLaughlin Centre for Risk Science, Faculty of Medicine, University of Ottawa. Previously, she contributed to and managed several chemical risk assessment programs within Health Canada. With colleagues internationally, she has contributed to or led initiatives in developing methodology in chemical risk assessment, including mode of action, chemical specific adjustment factors, physiologically-based pharmacokinetic modeling, combined exposures and predictive modeling. These initiatives have involved collaborations with a range of international organizations and national Agencies, including the World Health Organization International Programme on Chemical Safety, the Organization for Economic Cooperation and Development, the U.S. Environmental Protection Agency, the European Joint Research Centre and the Agency for Food, Environmental and Occupational Health and Safety of France (ANSES). She has authored approximately 200 publications in this area and received several awards for contribution in this domain. Dr. Meek has a background in toxicology receiving her M.Sc. in Toxicology (with distinction) from the University of Surrey, U.K. and her Ph.D. in risk assessment from the University of Utrecht, the Netherlands.

Neptune, Enid

Johns Hopkins University

Dr. Enid Neptune is an Associate Professor of Medicine at Johns Hopkins School of Medicine in the Division of Pulmonary and Critical Care Medicine and the Institute of Genetic Medicine/Smilow Center of Marfan Research. She holds a B.A. in Biochemistry from Princeton University and an M.D. from Harvard Medical School. She completed an Internal Medicine Residency and Pulmonary and Critical Care Fellowship at University of California San Francisco. She completed a genetics fellowship at Johns Hopkins School of Medicine. She has been an active member of the American Thoracic Society (ATS) ascending to the upcoming Chair of the Respiratory Cell and Molecular Biology Assembly, the signature basic science assembly of the organization, and member of the Board of Directors. As vice-chair of the ATS Tobacco Action Committee, she guided the formulation of policies, positions and relevant publications for the ATS relevant to Tobacco Control Advocacy. Dr. Neptune is active in ATS and Johns Hopkins School of Medicine disparities efforts. Dr. Neptune has an extensive interest in environmental health especially as this converges onto ethnic disparities in tobacco product and air pollution exposure. She provided testimony at legislative sessions in which policies involving environmental health regulations were under consideration. Dr. Neptune is an internationally renowned expert on airspace injury and the pulmonary manifestations of genetic matrix disorders. She is on the professional advisory board of the Marfan Foundation. She is currently on the Board of Scientific Counselors of the National Institute of Health (NIH) Clinical Center and is a member of the Scientific Advisory Board of both the Tobacco-Related Disease Research Program and the American Lung Association. She is on the editorial board of journals including the American Journal of Respiratory and Critical Care Medicine (AJRCCM) and Journal of Clinical Investigation. Over the last 2 years, her research has been funded by four RO1 grants (as Principal Investigator on all) from the National Heart, Lung, and Blood Institute (NHLBI) and a Faculty Research Grant from the Marfan Foundation.

O'Donoghue, John

University of Rochester Medical Center

Dr. John L. O'Donoghue is an Adjunct Associate Professor in the Department of Environmental Medicine at the University of Rochester, School of Medicine and Dentistry. He holds a V.M.D. from the School of Veterinary Medicine and a Ph.D. in Pathology from the Graduate School of Arts and Sciences of the University of Pennsylvania. His research has focused on occupational and environmental neurotoxicants as risk factors for developmental and degenerative diseases of the central and peripheral nervous systems. Currently his research involves the effects of exposures to mercury on the human brain particularly as it involves the mercury species associated with dietary exposures to seafood and unintended intoxications from organic mercurials in occupational and environmental settings. This research has been funded in part by NIEHS grants and includes the use of the Stanford Synchrotron Radiation Lightsource, and SLAC National Accelerator Laboratory, supported by the U.S. Department of Energy, Office of Science, Office of Basic Energy Sciences. He is currently, a member of the National Institute for Occupational Safety and Health, National Occupational Research Agenda Manufacturing Sector Research Council. He has served on numerous national and international research review and advisory panels including committees of the U.S. Environmental Protection Agency, the National Academy of Sciences, the Institute of Medicine, and the World Health Organization. Included among these are U.S. Environmental Protection Agency advisory panels on the weight-of-evidence/hazard identification for non-cancer health effects, and FIFRA panels for the review of neurotoxicity test guidelines, review of cholinesterase inhibition neurotoxicity guidelines, and neurotoxicity risk assessment guidelines. Other national advisory panels include the Congressional Office of Technology Assessment Advisory Panel on Neurotoxic Substances, National Academy of Sciences committee on the review of the health effects in Vietnam Veterans from exposure to herbicides (Neurological and Neurobehavioral Effects of Dioxin), and the US Department of Defense Threat Reduction Agency Joint Science and Technology Office for Chemical and Biological Defense review panel. International panels include several OECD panels, WHO International Programme on Chemical Safety panels, and the United Kingdom Department for Environment, Food, and Rural Affairs, PFOS Risk Reduction Report Steering Committee.

Olmstead, Sheila

The University of Texas at Austin

Dr. Sheila Olmstead is a Professor at the Lyndon B. Johnson School of Public Affairs, University of Texas at Austin (UT), a University Fellow at Resources for the Future (RFF), and a Senior Fellow at the Property and Environment Research Center. Dr. Olmstead is an environmental and resource economist with expertise in water quality regulation and valuation, water pricing, water markets, the environmental impacts of energy development, adaptation to water-related climate change impacts, and market-based approaches to pollution control. From 2016-2017, Olmstead served as the Senior Economist for Energy and the Environment at the President's Council of Economic Advisers. From 2013-2016, Olmstead was Deputy Director of the Center for Reinventing Aging Infrastructure for Nutrient Management. Before joining UT in 2013, Olmstead was a Fellow and then Senior Fellow at RFF, as well as Assistant Professor and then Associate Professor of Environmental Economics at the Yale School of Forestry and Environmental Studies. Olmstead has served as Vice President and a member of the Board of Directors of the Association of Environmental and Resource Economists. She is currently an Editor of the Journal of the Association of Environmental and Resource Economists, and in the past has served as Associate Editor of Water Resources Research, Co-editor of Environmental and Resource Economics, and Book Review Editor of Water Economics and Policy. She holds a PhD in Public Policy from Harvard University, a Masters in Public Affairs from the University of Texas at Austin, and a BA from the University of Virginia.

Oswald, Eric

Michigan Dept. of Environment, Great Lakes, and Energy

Eric J. Oswald is the Director of the Drinking Water and Environmental Health Division of the Michigan Department of Environment, Great Lakes, and Energy. In this position, he oversees approximately 140 employees providing oversight of over 10,000 public water supplies and drinking water environmental health programs. He holds a BS in Civil Engineering and an MS in Environmental Engineering with his Thesis on A Trichloroethylene Risk Assessment Using a Monte Carlo Analysis of Parameter Uncertainty in Conjunction with Physiologically-Based Pharmacokinetic Modeling. Published author in peer reviewed journal (Risk Analysis, Volume 15, Issue 5) A Trichloroethylene Risk Assessment Using a Monte Carlo Analysis of Parameter Uncertainty in Conjunction with Physiologically-Based Pharmacokinetic Modeling. He led the development of the State of

Michigan's Maximum Contaminant Levels for seven PFAS compounds. He was in charge of development of the MCLs in accordance with state regulations to include a regulatory impact statement and cost benefit analysis of the proposed maximum contaminant levels. Development of the levels also included establishing health-based values based on current research, meeting with stakeholders to gather input on impacts, and the presentation of the process to an oversight panel. He currently serves on the state's Public Health Advisory Committee and Childhood Lead Exposure Elimination Committee advising the governor and key public health officials and current and developing health issues.

Phillips, Jenny

TRC companies

Jenny Phillips is a Technical Director at TRC, an environmental engineering firm, leading the Risk Assessment practice and the Emerging Contaminant team. Ms. Phillips is a Diplomat of the American Board of Toxicology (DABT). In this role, Ms. Phillips works on emerging contaminant research and guidance development, as well as a subject matter expert for technical panels and for clients with challenging project issues. She holds a B.S. in Environmental Health and a M.S. in Environmental Health-Toxicology from Colorado State University. Ms. Phillips has worked in the risk assessment field for 33 years, starting to build skill at the same time United States Environmental Protection Agency started to publish draft Risk Assessment Guidance. Her expertise includes all components of risk evaluation including statistical data analysis, exposure assessment, technical review of toxicity data, fate and transport modeling of contaminants, determination of endpoints protective of site ecological and human receptors; negotiation of site closure issues and working with regulatory, stakeholder and community groups. As an important component of risk assessment, risk communication has been a focus of Ms. Phillips work for many years working closely with regulatory agencies, stakeholders and the public. Emerging Contaminants add additional challenges as the knowledge of toxicity often rapidly changes. For the past several years (8) Ms. Phillips has been working on Per and polyfluoroalkyl substances (PFAS) related issues in risk assessment, including the derivation of risk based guidance and regulatory values, serving as a co-lead for the Regulatory section of the Interstate Technology Regulatory Council (ITRC) and has spoken on the toxicity and risk assessment of PFAS at a dozen or more conferences, workshops and seminars. Ms. Phillips specific interest in PFAS is tied to the use of the numerous toxicity endpoints for cleanup levels in all media (surface and ground water, soil, air and sediment) and the complicated issues around their use. Ms. Phillips participates on the a confidential American Chemistry Council project team. Ms. Phillips is a member of the Society for Risk Analysis and the Society of Environmental Toxicology and Chemistry. Ms. Phillips does not receive any research funding.

Post, Gloria

New Jersey Department of Environmental Protection

Dr. Gloria Post is a Research Scientist in the New Jersey Department of Environmental Protection (NJDEP) Division of Science and Research. She is a toxicologist with responsibility for health effects evaluation and risk assessment of contaminants found in New Jersey's environment. She holds an A.B. with honors in Biochemical Sciences from Princeton University and a Ph.D. in Pharmacology from Thomas Jefferson University, with post-doctoral research at Duke University. Dr. Post has made substantial contributions to the risk assessments of many environmental contaminants including volatile organics, methyl tertiary butyl ether, arsenic, radon, perchlorate, 1,2,3-trichloropropane, per- and polyfluoroalkyl substances (PFAS), 1,4-dioxane, and cyanotoxins, and she is the first author of the "Health and Aesthetic Effects of Drinking Water Contaminants" chapter in the American Water Works Association Handbook of Water Quality & Treatment. She has focused on PFAS as drinking water contaminants for more than 15 years, and she is the first author of five publications (including three critical reviews) and the co-author of three additional publications on this topic. She is the lead for the Human Health section of the Interstate Technology & Regulatory Council PFAS Technical and Regulatory Document and a major contributor to the Environmental Council of the States white paper on states' PFAS standards. She served on the National Academy of Sciences Planning Committee for the Workshop on Federal Human Health PFAS Research and the EPA Science Advisory Board's Exposure and Human Health Science Standing Committee and Trichloroethylene Risk Assessment Review Panel, and she is a frequent reviewer of National Institute of Environmental Health Sciences grant proposals. She has served on the Federal-State Toxicology and Risk Analysis Committee planning committee since 1990 and represented state risk assessors at the 2012 EPA Integrated Risk Information System Public Stakeholders Meeting. Dr. Post is a member of the NJ Drinking Water Quality Institute, represents NJDEP on the NJ Governor's Council for Prevention of Developmental Disabilities, and serves on several other advisory committees. She is a Diplomate of the American Board of Toxicology and a full member of the Society of Toxicology. She has not received research funding during the past two years.

Puglia, John

Entegris Corp.

Dr. John Puglia currently serves as Global Director at Entegris Corporation, a world leader in Material Science solution for the most advanced technology challenges. Focusing on Advanced Sourcing of Technology, his role is guided by a strong commitment to a Corporate Social Responsibility position, while fostering the development of emerging technology that can be advanced to play a critical role in solving the greatest scientific challenges facing the world today. A large portion of his development portfolio involves the use of fluoropolymers and fluorochemicals, a material that while playing an important role in existing technology solutions should be managed with the consistent level of diligence to assure future technological development are as beneficial to our environment as it is to serving technological solutions. Prior to this, Dr. Puglia served for 5 years as Global Director of Research, Development and Engineering at Entegris Corp, in Billerica MA. His duties included the development of advanced porous plastic systems for use in the semiconductor industry. Prior to joining Entegris, he developed porous plastic systems for the Department of Defense from 2005 to 2010 serving as Director of Technology for QinetiQ North America incorporating separation science into the most advanced Defense Systems under development by the Department of Defense. While at QinetiQ, he was awarded a multiyear contract with DARPA Advanced Science Office. Dr. Puglia's fundamental understanding of Polymer Science allows him to explore solutions to many different problem sets, even those not directly associated with the field of membrane separations, such as medical devices and chemical sensors. Dr. Puglia has a long affiliation with many of the leading colleges and universities and has previously managed commercial feasibility of academic technology working through technology transfer offices. Prior to 2005, he was Director of Ultrafiltration Technology at Millipore Corp, where he managed both R&D and Manufacturing Operations for the development of advanced pharmaceutical membranes from 2000 to 2005. Prior to 2000, he managed Advanced Research for Koch Industries, in their membrane facility in Wilmington, MA, starting in 1992. Along the way he has managed to accumulate a large number of patents specifically in the membrane and porous plastics field. Dr. Puglia received his BS degree in Chemistry at the Philadelphia College of Pharmacy & Science and his Ph.D. in Polymer Science/Plastics Engineering at University of Massachusetts. Dr. Puglia many patents to his credit and a host of publications in the field of separation science. Dr. Puglia is not receiving research funding currently.

Pullen-Fedinick, Kristi

Natural Resources Defense Council

Dr. Kristi Pullen Fedinick is the Chief Science Officer at the Natural Resources Defense Council. She also holds a faculty appointment in the Department of Environmental and Occupational Health of the Milken Institute School of Public Health at The George Washington University. Dr. Pullen Fedinick holds a B.S. in Biochemistry and Molecular Biology from the University of Maryland Baltimore County and a Ph.D. in Molecular and Cell Biology with a focus on Biochemistry, Biophysics, and Structural Biology from the University of California, Berkeley. For her postdoctoral work, Dr. Pullen Fedinick was a Robert Wood Johnson Foundation Health and Society Scholar at the Harvard T. H. Chan School of Public Health. Dr. Pullen Fedinick's current work resides at the intersection of science and public policy and seeks to advance protections for people and communities disproportionately impacted by environmental and social impacts. She uses a combination of geospatial, statistical, and computational tools to assess the distribution and impact of chemicals in the environment, with a particular emphasis on drinking water and cumulative exposures. Her work also includes the evaluation of the use of high-throughput technologies, predictive toxicology, epidemiology, and computational approaches in chemical evaluations. Dr. Pullen Fedinick has authored multiple policy reports, peer-reviewed articles, and policy comments, and served on numerous influential committees of the National Academies of Sciences (NAS), Engineering, and Medicine - including the Committee on the Application of Systematic Review in Toxic Substances Control Act (TSCA) Risk Evaluations, the Committee on Incorporating 21st Century Science in Risk-Based Evaluations, and the Standing Committee for Emerging Science for Environmental Health Decisions. She has also participated in multiple government, academic, and professional society panels, and committees.

Robinson, Lisa

Harvard University

Lisa A. Robinson is a Senior Research Scientist affiliated with the Center for Health Decision Science and the Center for Risk Analysis at the Harvard T.H. Chan School of Public Health, and Deputy Director of the Center for Health Decision Science. She received her Masters' in public policy degree from the Harvard Kennedy School of Government. Her research and teaching focus on the conduct of benefit-cost analysis and other forms of economic evaluation. She has led numerous assessments of the costs, benefits, and other impacts of

environmental, health, and safety policies and regulations, developed related methods, and drafted guidance documents. Recently, she led the creation of economic analysis guidelines for the U.S. Department of Health and Human Services and the Bill & Melinda Gates Foundation. She has developed approaches applied by government agencies and other organizations to value mortality risk reductions (the value per statistical life, VSL) and morbidity risk reductions. Ms. Robinson was previously a Senior Fellow at the Mossavar-Rahmani Center for Business and Government as well as an Affiliate Fellow of its Regulatory Policy Program at the Harvard Kennedy School. She was a Principal at Industrial Economics, Incorporated, the Director of Policy, Planning, and Budget for the federal Institute of Museum Services, and an analyst at the U.S. Office of Management and Budget. She is a past President of the Society for Benefit-Cost Analysis and served as a Councilor of the Society for Risk Analysis as well as Chair of its Economics and Benefits Analysis Specialty Group. She received the Richard J. Burk Outstanding Service Award from the Society for Risk Analysis and the Richard O. Zerbe Distinguished Service Award from the Society for Benefit-Cost Analysis, and is a Fellow of the Society for Risk Analysis. She is also on the Editorial Boards of Risk Analysis and the Journal of Benefit-Cost Analysis, which presented her with its Best Symposium award. She currently serves as a member of advisory groups for the World Health Organization on the VSL estimates used in its Health Economic Assessment Tool for Walking and Cycling and for the Newcastle University Centre for Healthier Lives.

Sanderson II, Andrew

Weatherby Healthcare

Dr. Sanderson is a practicing physician and has practiced medicine for 19 years in a number of settings including at large-tertiary care academic medical centers, large county hospitals, critical-access and safety-net hospitals, federally qualified health centers, private medical groups, and large integrated medical systems. He has held leadership and administrative positions and been in charge of large budgets and teams of interdisciplinary professionals. He has served in the federal government as a subject matter expert and has been the lead on health policy programs and proposals. He has served as co-investigator on university- and NIH-funded grants and produced several peer-reviewed publications as the member of a team and as senior author. Many of his publications are related to improving the process of colon cancer screening to understand how to identify cases of colorectal cancer earlier and reduce the morbidity and mortality rates in underserved communities. For the last 4 years, Dr. Sanderson has also worked to reduce health disparities and promote health equity by supporting, advising, and implementing programs on health literacy, men's health, culturally and linguistically appropriate services, resource mapping and coalition building, healthcare workforce diversity, and health information technology. Dr. Sanderson is a graduate of Morehouse College and completed his medical degree (MD) at Howard University. He also obtained a Master of Public Health (MPH) from Harvard University.

Savitz, David

Brown University

Dr. David Savitz is Professor of Epidemiology, with joint appointments in Obstetrics and Gynecology and Pediatrics at Brown University, where he previously served as Vice President for Research. He has held faculty appointments at the University of Colorado School of Medicine, the University of North Carolina School of Public Health where he served as the Carey C. Boshamer Distinguished Professor and Chair of the Department of Epidemiology, and as the Charles W. Bluhdorn Professor of Community and Preventive Medicine at Mount Sinai School of Medicine. Dr. Savitz received his undergraduate training in Psychology at Brandeis University and a Masters degree in Preventive Medicine at Ohio State University, and his PhD in Epidemiology from the University of Pittsburgh Graduate School of Public Health. He was elected to membership in the Institute of Medicine in 2007. He has served on 11 National Academy of Medicine Committees and was Chair of 4 of those, all of which concerned environmental health issues. Dr. Savitz's research is focused on reproductive and environmental epidemiology. He has conducted studies of the causes of adverse pregnancy outcome, including miscarriage and preterm birth, as well as pregnancy complications, birth defects, and child health problems. His environmental interests include a wide range of chemical and physical exposures, including perfluorinated chemicals, pesticides, drinking water treatment by-products, and non-ionizing radiation. In addition to his substantive expertise in environmental epidemiology, Dr. Savitz has strong methodologic expertise and has authored a book on the application of epidemiologic research, *Interpreting Epidemiologic Evidence: Connecting Research to Applications*. Dr. Savitz serves as Chair of the Research Committee of the Health Effects Institute and as Co-Chair of the Scientific Advisory Board of ISGlobal, the Barcelona Institute for Global Health. During the past two years, his research support has come from the National Institutes of Health.

Slitt, Angela L

Rhode Island University

Dr. Angela Slitt is a Professor in the Department of Biomedical Sciences in the College of Pharmacy at the University of Rhode Island. She has twenty years' experience as a toxicologist, specializing in mechanisms of liver injury, xenobiotic transport, and obesity. Her research includes the study of non-alcoholic fatty liver disease (NAFLD) and metabolic disorders, hepatic transport processes, and toxicant excretion, and evaluation of plant and food-derived polyphenolic compounds for anti-inflammatory activity. She currently holds NIH funding and has held USDA funding to study aspects of metabolic disease. Dr. Slitt is a Project Lead for the URI-HARVARD Sources, Transport, Exposure & Effects of PFAS (STEEP) Superfund Center which studies the adverse health effects of PFAS. Her project has focused on PFAS contribution to fatty liver disease in rodent models, impact of maternal diet on PFAS distribution and adverse liver outcomes in offspring. The project also integrates cellular models to assess emerging PFAS in cell-based models for adverse liver and adipocyte outcomes, and how these properties relate to membrane partitioning and protein binding. Dr. Slitt has participated in expert panel review of EPA regulatory documents for PFOS, PFOA, PFBS, and GenX, and serves regularly on NIH, NIEHS, and VA Merit Award Review Panels.

Zodrow, Jean

GeoSyntech

Dr. Jeanmarie M. Zodrow is a Senior Scientist at Geosyntec Consultants in the Greenwood Village, Colorado office. She previously worked for the United States Environmental Protection Agency (USEPA) Integrated Risk Information System (IRIS) Program and the USEPA Region 10 Risk Evaluation Unit. She holds a B.A. in biology and a M.S. in environmental Science from the University of Colorado at Denver, and a Ph.D. in toxicology from the University of Colorado Health Sciences Center. She is a risk assessor focusing on risk assessment of sites impacted by per- and polyfluoroalkyl substances (PFAS). She has expertise in risk assessment and on the USEPA Health Advisory Limit for PFOS and PFOA and familiarity with the critical studies reviewed for the health advisory documents. Her current research interests focus on developing ecological screening levels and using food web modeling to determine exposure and effects for PFAS-impacted sites. She was co-principal investigator of the Approach for Assessing PFAS Risk to Threatened and Endangered Species Project (ER18-1653) study to determine screening levels associated with effects in terrestrial and aquatic-dependent wildlife, funded by the Strategic Environmental Research and Development Program (SERDP). She is a fellow of the Society of Environmental Toxicology and Chemistry. While I have not served on other review panels, my technical expertise in risk assessment and broad knowledge of effects of PFAS would contribute to the diversity of the panel.