Invitation for Public Comment on the List of Candidates for the EPA Science Advisory Board Review of EPA's External Draft Technical Support Document for the All Ages Lead Model (AALM) – Parameters, Equations, and Evaluations

March 1, 2019

The U.S. Environmental Protection Agency (EPA) Science Advisory Board (SAB) Staff Office announced in a Federal Register Notice (Vol 83 Number 212 Pages 54923-4) published on November 1, 2018) that it was forming a Panel to review EPA's Draft All Ages Lead Model (AALM). To form this Panel, the SAB Staff Office sought nominations of nationally and internationally recognized experts with experience and expertise in one or more of the following areas: physiologically based pharmacokinetic modeling, physiological processes related to lead, human processes controlling uptake/absorption of ingested lead, assessing pathways for lead exposure, and assessing environmental or occupational exposure to lead.

Attached is a List of Candidates that includes the biosketches of both current members of the Board and other nominees. In total, the SAB Staff Office has identified 30 candidates based on their relevant expertise and willingness to serve.

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

We hereby invite comments on the attached List of Candidates for consideration by the SAB Staff Office in the formation of this Panel. Comments should be submitted to Iris Goodman, Designated Federal Officer, no later than March 22, 2019. E-mailing comments (goodman.iris@epa.gov) is the preferred mode of receipt. Please be advised that comments are subject to release under the Freedom of Information Act.

AALM Review Panel

Barton, Hugh A.

Independent Consultant

Dr. Hugh A. Barton is an independent consultant for applications of systems pharmacology and toxicology to drug discovery and safety evaluation or environmental risk assessment. He provides expert advice on physiologically based pharmacokinetic (PBPK) and pharmacodynamic (PD) models and their implementation for decision-making. Dr. Barton was Associate Research Fellow with Biomedicine Design, Pfizer, Inc. for ten years. His focus in drug discovery was applying translational modeling and simulation to oncology, cardiovascular disease, and neurodegenerative diseases to assess PK, PD, and safety. His pharmacokinetic modeling to support safety evaluation for excipients lead to FDA approval of generic Pfizer docetaxel in 2014. He has more than 25 years of experience in biological modeling with Pfizer, US Environmental Protection Agency and consulting/contract companies, developing computational models for use in biologically based dose-response analyses. Dr. Barton worked in environmental consulting for several years doing site specific risk assessments for hazardous waste sites, air permitting, and other environmental regulatory requirements. He has been adjunct professor at Boston University School of Public Health and in Toxicology at The University of North Carolina at Chapel Hill. He received a B.S. in Life Sciences from the Massachusetts Institute of Technology, Cambridge, MA in 1982 and a Ph.D. in Toxicology from the Department of Applied Biological Sciences at MIT in 1988. Dr. Barton has been President of the Risk Assessment and Biological Modeling Specialty Sections of the Society of Toxicology. He has served as an invited peer-reviewer for organizations including Health Canada, NIEHS, US EPA, NAS/NRC and TERA. He is a member of the US EPA Science Advisory Board's Chemical Assessment Advisory Committee, the Simulations Plus, Inc. Science Advisory Board, and the NRC Committee on Organohalogen Flame Retardants, and a committee reviewing pesticide PBPK models for Versar under contract to US EPA. He previously served on the NRC Committee on Inorganic Arsenic and WHO IPCS PBPK Modeling working group. He is a reviewer for numerous scientific journals and serves on two editorial boards. Dr. Barton has published more than 50 articles in the scientific literature on physiologically based pharmacokinetic and pharmacodynamic modeling and has received awards from Pfizer, EPA and others for that work and its applications in pharmaceutical safety and risk assessment. Dr. Barton's research currently has no research funding.

Canfield, Richard

Cornell University

Dr. Richard Canfield is a developmental psychologist who received his Bachelor's degree in Psychology from the University of Puget Sound in 1980 and his Ph.D. in Psychology from the University of Denver in 1986, specializing in perceptual and cognitive development in young infants. He conducted postdoctoral research in the Department of Human Development at Cornell University from 1988-1990, after which he joined the faculty at Cornell. In 1998, as Associate Professor of Human Development, Dr. Canfield took the position of Senior Research Associate in the Division of Nutritional Sciences where he conducts research on the possible effects of prenatal and postnatal exposure to environmental toxins and variations in the prenatal diet on cognitive functioning during infancy and childhood. His ongoing research projects include a study of the effects of low-level lead (Pb) exposure on children's intellectual and

neuropsychological development. He has also conducted research on the risks and benefits of maternal fish consumption during pregnancy. This research questions, for example, whether a prenatal diet rich in fish oils can compensate for the possible neurotoxic effects of prenatal exposure to the methylmercury contained in the fish. Dr. Canfield has also studied the possible effects of prenatal exposure to phthalates on cognitive and behavioral functioning during childhood. Finally, Dr. Canfield is examining the development of infants exposed prenatally to a human herpes virus (HHV-6) to determine whether early infection with HHV-6 is related to neurobehavioral impairments during infancy and childhood. Similar viruses have this effect but it remains unknown whether HHV-6 infection is deleterious to later child development. Dr. Canfield's pending research support pertains to the postnatal effects of early choline supplementation on memory, attention, and affect regulation in human infants (NIH).

Caravanos, Jack

Hunter College of the City University of New York

Dr. Jack Caravanos is an Associate Professor at Hunter College of the City University of New York where he directs the ABET accredited MS degree program in Environmental and Occupational Health Sciences (EOHS) as well as the MPH EOHS degree. He received his Master's from Polytechnic University in New York City and proceeded to earn his Doctorate in Public Health (Environmental Health) from Columbia University in 1984. Dr. Caravanos holds certification in industrial hygiene (CIH) and prides himself as being a "practicing environmental specialist". As director of one of the largest environmental hygiene programs in the United States, located in the largest city, Dr. Caravanos has extensive experience in variety of urban environmental and industrial hygiene problems. His principle area of research is urban environmental lead dust sources and migration and has published in this area. Most recently, Dr. Caravanos has worked with an international environmental assessment non-governmental organization (Blacksmith Institute) to identify and remediate urban hazardous waste sites with specific attention to the improper recycling of used lead-acid batteries (ULAB). He has traveled worldwide assessing ULABs and lead contamination from artisanal ceramic manufacturers and has extensive experience in X-ray fluorescence (XRF) Lead Detection technology and LeadCare Blood testing equipment.

Christopher, John P.

Independent Consultant

Dr. John Christopher became Staff Toxicologist Emeritus upon retirement from California Department of Toxic Substances Control 2010. He holds a Ph.D. in Biological Science from Oregon State University, M.A. in Pharmacology from Stanford University, and B.S. in Biology from Georgetown University. During 22 years in California government, Dr. Christopher developed toxicity criteria for solvents, metals, pesticides, and industrial chemicals; developed methods for dose-response assessment of chemicals; wrote risk assessments in support of proposed regulations; reviewed human health and ecological risk assessments submitted as part of regulating hazardous waste cleanup; and participated in multi-disciplinary project teams for cleanup at more than 100 former military, industrial, agricultural, and mining properties in California. Dr. Christopher became the Department's expert for biostatistics, bioavailability, background levels of metals, multi-media risk assessment for lead and arsenic, probabilistic risk assessment, and methods development for exposure and risk characterization. Since 1996 Dr. Christopher has been an independent consultant in the public sector and an invited peer reviewer

for over 40 toxicity criteria and children's risk assessments. He received a Lifetime Achievement Award for government contributions to waste cleanup in 2007. He became a Fellow of Toxicology Excellence for Risk Assessment in 2009. He was an invited science panel member in 2010-2011 for "Beyond Science and Decisions", a broadly sponsored effort for implementing recommendations regarding risk assessment from "Science and Decisions" (NAS, 2009). He was elected President of both the Risk Assessment Specialty Section and the Northern California Regional Chapter of the Society of Toxicology. He has been certified by the American Board of Toxicology since 1984. His research on bioavailability of arsenic in soils at former mining sites was recently (2008) funded by U.S. EPA's Brownfields Program. Dr. Christopher currently consults actively in the public and private sectors, principally in dose-response assessment and hazardous waste cleanup. Dr. Christopher receives no federal research funding.

Clewell, Harvey

Ramboll Environment and Health

Dr. Harvey J. Clewell is a research scientist with over forty-five years of experience in environmental quality and toxicology research, chemical risk assessment and hazardous materials management. He is currently a Principal Consultant with Ramboll. He received a Masters Degree in Chemistry from Washington University, St. Louis, and a PhD in Toxicology from the University of Utrecht, the Netherlands. He is a Diplomate of the American Board of Toxicology and a Fellow of the Academy of Toxicological Sciences, and holds the position of Visiting Scientist at the University of Utrecht in the Netherlands. He has authored more than 200 peer-reviewed scientific publications and a number of book chapters. He has gained an international reputation for his work on the incorporation of mechanistic data and mode of action information into chemical risk assessments, having played a role in the first uses of physiologically based pharmacokinetic (PBPK) modeling in cancer and non-cancer assessments by EPA, ATSDR, OSHA, and FDA. Dr. Clewell has served on external peer review panels for a number of EPA guidelines, including those for cancer risk assessment, risk characterization, benchmark dose modeling, and dermal absorption, and has participated in chemical-specific reviews conducted by the EPA Scientific Advisory Board and the FIFRA Scientific Advisory Panel. He also served as a member of the ECVAM Scientific Advisory Panel from 2012 to 2016. Over the years he has performed research for a wide variety of clients, including the EPA, FDA, NIEHS, ATSDR, Health Canada, TCEQ, ACC, CEFIC, Pfizer, DuPont, Dow Corning, EPRI, NIPERA, Syngenta and Cosmetics Europe. In 2007 the Society of Toxicology recognized Dr. Clewell with the Arnold J. Lehman Award for major contributions to chemical safety and risk assessment.

Cohen, Joel

Gradient

Dr. Joel Cohen is a PhD toxicologist at the scientific consulting firm Gradient in Cambridge, MA, with specialties in lead exposure modeling and risk assessment in a variety of contexts. He has extensive experience with the International Commission on Radiological Protection (ICRP) model, also known as the Leggett model, a well-regarded physiologically based pharmacokinetic (PBPK) computational model for estimating blood and bone lead levels associated with various intermittent lead exposures via inhalation and ingestion. He is most familiar with an updated version of the Leggett model that incorporates sex-specific growth parameters adapted from O'Flaherty PBPK model. He has applied this updated version of the Leggett model and

interpreted modeling results in various litigation contexts in order to estimate blood and bone lead levels associated with intermittent exposures to lead from consumer products regulated under California's Proposition 65. I then evaluated modeled blood lead levels in the context of possible reproductive and developmental toxicity effects of lead. He also recently applied inhalation exposure models to estimate the dose of lead delivered tothe lungs of workers in various occupational environments. Specifically, he evaluated size distribution data of lead particles measured in battery manufacturing and secondary smelter facilities, and then applied the Multiple-Path Particle Dosimetry (MPPD) model to estimate particle deposition in the lung based on various particle size distributions measured from two types of air samplers: cascade impactor and filter cassette. In light of differences in particle size distributions measured via the two sampling approaches, he evaluated subsequent impacts on modeled particle deposition in the lungs and possible implications for applying such modeling approaches in setting occupational exposure limits. This work was documented in a white paper submitted to the California Division of Occupational Safety and Health (CalOSHA), and was recently published in the Journal of Occupational and Environmental Hygiene. Before joining Gradient, Dr. Cohen received his doctorate from the Harvard T.H. Chan School of Public Health (HTHCSPH) where he investigated the fate, transport, and toxicity of inhaled nanoparticles. His graduate research led to several published papers and one patent related to modeling the fate and transport of particles in various media (air, liquid, etc). He currently holds a Visiting Scientist appointment at the HTHCSPH, where he continues to investigate the implications and applications of nanomaterial exposures in a variety of exposure contexts.

Cory-Slechta, Deborah

University of Rochester

Dr. Deborah Cory-Slechta became a faculty member at the University of Rochester Medical School (URMC) in 1982. She became Chair of its Department of Environmental Medicine and Director of the NIEHS Environmental Health Sciences Center in 1998, and served as Dean for Research from 2000-2002. She then became Director of the Environmental and Occupational Health Sciences Institute (EOHSI) and Chair of the Department of Environmental and Community Medicine at the UMDNJ-Robert Wood Johnson Medical School from 2003-2007, before returning to URMC as Professor in Environmental Medicine, Pediatrics and Public Health Sciences where she has served as Acting Chair of the Department of Environmental Medicine and Director of its NIEHS Environmental Health Sciences Center. Dr. Cory-Slechta has served on national review and advisory panels of the National Institutes of Health, the National Institute of Environmental Health Sciences, the Food and Drug Administration, the National Center for Toxicological Research, the Environmental Protection Agency, the National Academy of Sciences, the Institute of Medicine, and the Agency for Toxic Substances and Disease Registry, Centers for Disease Control. In addition, Dr. Cory-Slechta has served on the editorial boards of the journals Neurotoxicology, Toxicology, Toxicological Sciences, Fundamental and Applied Toxicology, Neurotoxicology and Teratology, and American Journal of Mental Retardation. She has held the elected positions of President of the Neurotoxicology Specialty Section of the Society of Toxicology, President of the Behavioral Toxicology Society, and been named a Fellow of the American Psychological Association. Her research has focused largely on the relationships between brain development and behavior in both animal models and human studies, and its alteration by exposures to environmental toxicants. Most recently this work has included the effects of developmental exposures to air pollutants on brain and behavior. These research

efforts have resulted in over 171 papers and book chapters to date. Her research funding sources include the Department of Health and Human Services (HHS) National Institutes of Health and the U. S. Environmental Protection Agency.

Erdal, Serap

University of Illinois, Chicago

Dr. Serap Erdal is an Associate Professor of Environmental and Occupational Health Sciences at the University of Illinois at Chicago (UIC) School of Public Health. She is received her Ph.D. in Environmental and Occupational Health Sciences of the University of Pittsburgh Graduate School of Public Health. Dr. Erdal has an active research program in exposure and health risk assessment for environmental and occupational hazards. Prior to her academic appointment at UIC and Rutgers University, she worked for the Health Risk Assessment Division of the EA Engineering, Science, and Technology (a for-profit consulting firm) and the Washington State Department of Ecology. Through her positions in academia, government, and industry, she has performed exposure and health risk assessments for many fortune 500 companies and governmental entities (e.g., U.S. Department of Defense and Department of Energy). Her areas of expertise include: multi-media human exposure and risk assessment for cancer and non-cancer effects; health and safety evaluation of new chemicals or products; petroleum and alternative fuel; renewable energy sources; multi-media (air, water, soil, sediment, fish) exposure and health risk assessment for hazardous waste sites; remediation and risk management; Brownfields or Superfund site evaluation and redevelopment; sustainable development; indoor and outdoor air pollution; aerosol science and technology; fine and nanoparticle exposure and risk assessment; nanotechnology health and safety evaluation; persistent organic chemicals (PAHs, PCBs, PBDEs, Dioxins, Furans) and lead and other toxic metal exposure assessment and abatement; industrial hygiene; retrospective occupational exposure assessment; development of exposure assessment methodologies for epidemiological investigations; technical and regulatory interpretation of environmental and occupational health and safety regulations (CAA, CWA, TSCA, CERCLA,OSHA); and regulatory science policy analysis. Dr. Erdal served as an invited peer reviewer by the U.S. Environmental Protection Agency for the revised guidance on the Integrated Exposure Uptake Biokinetic Model for Lead in Children (IEUBK Model) in 2012. She also served as an invited peer reviewer by the Ireland Environmental Protection Agency for grant program focusing on health risks evaluation in 2017 and 2018. Furthermore, she has been invited to conduct reviews of scientific articles focusing on health risk evaluation by many scientific journals throughout her career including Environmental Science and Pollution Research; Environmental Pollution; Science of the Total Environment; Environmental Science & Technology, International Journal of Environmental Research and Public Health, Toxicology Letters, Annals of Occupational Hygiene, Journal of Hazardous Materials, American Journal of Industrial Medicine, Human and Ecological Risk Assessment, and others.

Fisher, Jeffrey

U.S. Food and Drug Administration

Dr. Jeffrey Fisher is a research toxicologist with the U.S. Food and Drug Administration, National Center for Toxicological Research. He was formerly a Professor in the Department of Environmental Health Science, College of Public Health at the University of Georgia (UGA). He joined the University of Georgia in 2000 and served as Department Head of the Department of Environmental Health Sciences from 2000 to 2006 and Director of the Interdisciplinary

Toxicology Program at UGA from 2006-2010. He spent most of his career at the Toxicology Laboratory, Wright Patterson AFB, where he was Principal Investigator and Senior Scientist in the Toxics Hazards Division and Technical Advisor for the Operational Toxicology Branch. Dr. Fisher's research interests are in the development and application of biologically based mathematical models to ascertain health risks from environmental and occupational chemical exposures. Dr. Fisher's modeling experience includes working with chlorinated and non-chlorinated solvents, fuels, pesticides, perchlorate and bisphenol A. He has developed PBPK models for use in cancer risk assessment, estimating lactational transfer of solvents, understanding in utero and neonatal dosimetry, quantifying metabolism of solvent mixtures and developing biologically motivated models for the hypothalamic-pituitary-thyroid axis in rodents and humans. Dr. Fisher is currently supported by the USAF to develop a hypothalamic-pituitary-thyroid (HPT) axis mathematical model for intake of iodide and perchlorate by the pregnant woman. Other current modeling projects, funded by the FDA, include bisphenol A and HPT axis models for intake of anions (eg., perchlorate, iodide) in pregnant and lactating rats. Dr. Fisher has 20 years of experience in physiological modeling and has trained several graduate students and postdoctoral fellows on the concepts and application of physiological models. He was a Visiting Scientist at the Chemical Industry Institute of Toxicology in 1996 and at the NIOSH Taft Laboratory in 1999. During this time, he also served as Adjunct Professor in the Department of Pharmacology and Toxicology at Wright State University. Dr. Fisher has published over 120 papers on pharmacokinetics and PBPK modeling in laboratory animals and humans. He has served on several national panels and advisory boards for the DoD, ATSDR, USEPA and non-profit organizations. He was a U.S. delegate for the North Atlantic Treaty Organization. Dr. Fisher served on the International Life Sciences Institute Steering Committee, which evaluated chloroform and dichloroacetic acid using EPA-proposed Carcinogen Risk Guidelines. He is Past President of the Biological Modeling Specialty Section of the Society of Toxicology, reviewer for several toxicology journals, and was Co-Principal Investigator on a National Institutes of Health (NIH)-supported workshop on Mathematical Modeling at the University of Georgia in the fall of 2003. He was a member of the National Academy of Sciences subcommittee on Acute Exposure Guideline Levels (AEGLs) from 2004-2010 and Science Advisory Board for the US EPA (2007-2010). He is an ad hoc member of the SAB for dioxin. He is a fellow of the Academy of Toxicological Sciences and an 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.

Fowler, Bruce

U.S. Centers for Disease Control and Prevention (ATSDR/CDC)

Dr. Bruce A. Fowler Ph.D., Fellow A.T.S., received a B.S. degree in Fisheries (Marine Biology) from the University of Washington in 1968, and a Ph.D. in Pathology from the University of Oregon Medical School in 1972. He was a staff scientist at the National Institute of Environmental Health Sciences from 1972 until 1987, when he became Director of the University of Maryland system-wide Program in Toxicology and Professor of Pathology at the University of Maryland School of Medicine. In 2001, Dr. Fowler became Professor and Director of the Laboratory of Cellular and Molecular Toxicology in the Department of Epidemiology at the University of Maryland School of Medicine. In 2002, he began an IPA assignment as a Senior Research Advisor to the Agency for Toxic Substances and Diseases Registry (ATSDR) in

the Division of Toxicology. Dr. Fowler is the author of over 195 research papers and book chapters dealing with molecular mechanisms of metal toxicity and biomarkers for early detection of metal-induced cell injury. He has been the editor or co-editor of 4 books or monographs on metal toxicology and mechanisms of chemical–induced cell injury. Dr. Fowler's current research is focused on the toxicology of chemical mixtures involving metals, particularly in relation to semiconductors, lead, cadmium, arsenic mixtures and the role(s) of lead–binding proteins in mediating the toxicity of this ubiquitous metal to the kidney and brain. He serves on the editorial boards of a number of scientific journals in toxicology and environmental health.Dr. Fowler, who is an internationally recognized expert on the toxicology of metals, has served on a number of Federal, State, and international advisory committees in his areas of expertise. These include the Maryland Governor's Council on Toxic Substances (Chair), National Academy of Sciences / National Research Council Committees on Toxicology, Toxicology Information Committee, Committee on Women in Science and Engineering, Measuring Lead in Critical Populations (Chair), Biological Markers of Urinary Toxicology, Committee on the Evaluation of Augmenting Potable Water Supplies with Reclaimed Water, and the Subcommittee on Arsenic in Drinking Water of the Committee on Toxicology. He has also served as a temporary advisor to the World Health Organization (WHO) and the International Agency for Research Against Cancer (IARC). Dr Fowler has been honored as a Fellow of the Japanese Society for the Promotion of Science (1990), a Fulbright Scholar and Swedish Medical Research Council Visiting Professor at the Karolinska Insititute, Stockholm, Sweden (1994-1995) and elected as a Fellow of the Academy of Toxicological Sciences (2000). Dr. Fowler currently serves as Chairman of the Scientific Committee on the Toxicology of Metals under the International Commission on Occupational Health (ICOH), as a member of EPA's Clean Air Scientific Advisory Committee (CASAC) Lead NAAQS Review Panel, and as a member of the Fulbright Scholarship review committee for Scandinavia (1999-, Chair, 2000-2001). Dr. Fowler is also a member of the AAAS Recruitment and Screening Committee for the Court-Appointed Scientific Experts (CASE) Demonstration Project 2000-Present.

Georgopoulos, Panos

Rutgers University

Dr. Panos Georgopoulos is a professor in the Department of Environmental and Occupational Medicine at Robert Wood Johnson Medical School (RWJMS). He is also a member of the Graduate Faculties of Chemical and Biochemical Engineering, Biomedical Engineering, and of Environmental Sciences at Rutgers University, and a member of the Environmental and Occupational Health Sciences Institute (EOHSI), which is a joint project of RWJMS and Rutgers. Dr. Georgopoulos received his M.S. and Ph.D. Degrees in Chemical Engineering from the California Institute of Technology (Caltech) and his Dipl. Ing. Degree from the National Technical University of Athens. At EOHSI he directs the Computational Chemodynamics Laboratory (ccl.rutgers.edu), a research facility for informatics and source-to-dose-to-effect modeling studies of environmental and occupational health problems. Also at EOHSI, he currently directs the State-funded Ozone Research Center (ORC) as well as the Bioinformatics and Computational Toxicology Core of the National Institutes of Environmental Health Sciences (NIEHS)-funded Center for Environmental Exposures and Disease (CEED). Dr. Georgopoulos' research over the past 30 years has involved the development and application of computational methods and tools for multiscale modeling of physical and chemical processes taking place in interacting environmental and biological systems. The overall aim of this research is to improve

the understanding and quantification of human exposure and mechanism-based dosimetry, toxicokinetics, and biological response (toxicodynamics) to xenobiotics, including particulate and gaseous air pollutants, such as air toxics and the interacting components of photochemical air pollution systems. Dr. Georgopoulos has implemented the developments of this research in the graduate programs of Rutgers and RWJMS and has developed innovative courses in modeling and informatics related to environmental health applications. In these programs he has been primary doctoral thesis advisor to 20 students, and has been mentor to 24 post-doctoral fellows. Dr. Georgopoulos has lectured as invited speaker at various US and European universities and has published over 130 peer-reviewed articles and chapters in scientific journals, books and proceedings; he has also authored or co-authored several State and Federal Government Documents and technical reports. He has received awards and honors from professional societies, such as the International Society of Exposure Science (ISES) and the International Society for Environmental Epidemiology (ISEE) , as well as by governmental organizations and by industry. He has participated in many national and international scientific and technical committees and panels, and served, among many other positions, as Co-Director of the USEPA-funded Environmental Bioinformatics and Computational Toxicology Center (ebCTC), a research consortium of UMDNJ-RWJMS, Princeton University, Rutgers University and United States Food and Drug Adminstration's Center for Toxicoinformatics, and as Chair of the United States Department of Energy (USDOE)-funded Center of Expertise in Exposure Assessment of the Consortium for Risk Evaluation with Stakeholder Participation (CRESP). Dr. Georgopoulos has received research funding from Federal, State and private agencies, including the Agency for Toxic Substances and Disease Registry /Centers for Disease Control and Prevention, the National Institutes of Health, the National Institute of Occupational Safety and Health, the New Jersey Department of Environmental Protection, the New Jersey Department of Health and Senior Services, USDOE, USEPA, and others.

Goodrum, Philip E.

Cardno ENTRIX

Dr. Philip Goodrum is a Senior Consultant with Cardno ENTRIX with more than 20 years of experience in environmental modeling and applications of probability and statistics to human health and ecological risk assessment, compliance monitoring, and natural resources damages assessment. He received a Ph.D. in Environmental Engineering from the State University of New York (SUNY) College of Environmental Science and Forestry (ESF) in 1999; an M.S. in Environmental Engineering from SUNY ESF in 1995; and a B.S. in Environmental Technology from Cornell University in 1989. Dr. Goodrum developed and demonstrated applications of the Integrated Stochastic Exposure Model for lead, which uses Monte Carlo simulation to quantify variability and uncertainty in childhood blood lead concentrations based on variability and uncertainty in exposures. Dr. Goodrum specializes in quantitative uncertainty analysis and lead risk assessment, having served for approximately 10 years as a consultant for USEPA's Technical Review Workgroup for Lead. As a senior project manager for Syracuse Research Corporation from 1996 to 2006, he conducted and reviewed numerous lead risk assessments, managed EPA's "Lead Hotline" which assisted the public with applications of both the Integrated Exposure Uptake Biokinetic (IEUBK) model and the interim Adult Lead models, co-authored numerous platform presentations, technical white papers and guidance documents, and actively participated in the research and development of EPA's All Ages Model for lead. Dr. Goodrum has been an active member of community outreach and professional peer review

panels. In 1998-1999, he served as the chair of the Syracuse Regional Lead Task Force, responsible for coordinating public outreach and educational programs for the Syracuse community on childhood lead exposure. Dr. Goodrum served on a peer review panel for U.S. EPA National Center for Exposure Assessment (NCEA) for the All-Ages Risk Model in 2000. He was an invited speaker by NCEA for the National Air Quality Criteria for Lead Workshop held in Chapel Hill, NC, Feb. 1-3, 2005. In 2006-2007, Dr. Goodrum served on the Clean Air Scientific Advisory Committee Panel as a member of EPA's Science Advisory Board charged with reviewing the Lead Renovation, Repair, and Painting (LRRP) report and Office of Pollution Prevention and Toxics Dust study. Currently he is a member of the Interstate Technology and Regulatory Council's technical workgroup on Incremental Sampling Methodology, charged with developing guidance and training on new sampling methodologies for use in risk assessment. Dr. Goodrum's current research focuses on evaluating performance of environmental models based on empirical data, as well as developing sampling designs, assessing data usability for assessments, and conducting exploratory data analysis, regression and correlation analyses, multivariate analyses, hypothesis testing, trend analysis, outlier analysis, geospatial analysis, and hotspot identification (cluster analysis). Dr. Goodrum does not have any current research grants.

Jacobs, David E.

University of Illinois at Chicago

Dr. David Jacobs is the Director of Research at the National Center for Healthy Housing in the U.S. He previously worked at the U.S. Department of Housing and Urban Development as Director of the Office of Healthy Homes and Lead Hazard Control, where he was responsible for policy development, grants management, enforcement, public education and training, and research. He wrote the first federal interagency strategy on childhood lead poisoning prevention in the U.S. He also conceived and won Congressional support for the U.S. Healthy Homes initiative in 1999. He has testified before Congress and other legislative bodies on many occasions and has numerous scientific publications. Dr. Jacobs is also an adjunct associate professor at the School of Public Health at the University of Illinois at Chicago, a faculty associate at the Johns Hopkins University Bloomberg School of Public Health, and Director of the World Health Organization Collaborating Center on Healthy Homes Research and Training. He holds a Ph.D. in Environmental Engineering, an M.S. in Technology and Science Policy, a BS in Environmental Health, and a B.A. in Political Science. His research interests are in the association of the built environment and housing on health outcomes, especially for children and other sensitive populations; lead poisoning prevention; asthma; toxicology and risk assessment; ventilation; interventions; sustainable development; and integrating health considerations into disaster recovery, among others. He has received grants from government entities such as HUD, CDC, EPA as well as from foundations.

Kannappan, Vijay

Georgia Pacific LLC

Dr. Vijayavel "Vijay" Kannappan is a Board-certified Toxicologist (European Registered -ERT) with over 15 years of active practice in Human and Environmental Health Toxicology. Vijay is currently a Regulatory Toxicology & Stewardship Manager with Georgia Pacific LLC. where he manages toxicological risk assessment projects to ensure that the personal hygiene and skin care products are safe for consumers. Prior to his current position was employed with Mary Kay Inc. as a Sr. Product Safety Toxicologist, where he was accountable for the safety of raw materials

used in cosmetic products. He also worked as an Environmental Health Toxicologist for the State of Government of Michigan- Department of Environmental Quality in collaboration with US Federal Government Agencies viz. USEPA, NOAA, & USGS, where his projects focused on conducting human and environmental health risk assessment of specialty chemicals and biological agents. Vijay's educational qualifications includes, Post-Doctoral Research in Environmental Toxicology from University of Hawaii, U.S.A; Ph.D. in Environmental Toxicology, M.S in Environmental Toxicology and B.S in Microbiology from University of Madras, India. Vijay has been an active member with Society of Toxicology since 2008 and Full Member since 2014. He is also a recipient of Young Investigator Award (2017) with the Association of Scientists of Indian Origin, a Special Interest Group within the Society of Toxicology. Vijay is a reorganized Subject Matter Expert and serves a Committee Member in the Safety and Regulatory Toxicology Task Force with Personal Care Products Council, advocating and driving science-based policies impacting cosmetics and personal care products. He is an Author/Co-author of 100+ publications (peer-reviewed and non-refereed) with a track record of 1100+ citations in the field of Human and Environmental Health Sciences. Vijay's external *Ad-Hoc Services includes,* Steering Committee Member of the Ecological Risk Assessment World Interest Group (ERAIG) of Society of Environmental Toxicology & Chemistry; Doctoral Thesis evaluation committee member for International Universities; Editorial Member & Peer Reviewer for scientific journals.

Khubchandani, Jagdish

Ball State University

Dr. Jagdish Khubchandani is a Professor of Community Health at Ball State University. He also serves as a Biostatistician for the College of Health and has previously served as a fellow of Center for International Development and Global Health Institute at Ball State University. He received his Doctorate in Clinical Medicine from India, Masters in Public Health from Western Kentucky University, and Ph.D. in Health Education and Epidemiology from University of Toledo. Currently, he teaches in the areas of environmental health, global health, social epidemiology, and public health education in community and clinical settings. Within the past decade, he has mentored over 100 students pursuing undergraduate and graduate degrees in the field of public health, nursing, or medicine. In the past 5 years, he has coauthored more than 75 research articles in prestigious journals such as the Lancet, Journal of American Medical Association, and the New England Journal of Medicine on a broad range of issues including morbidity and mortality associated with environmental health problems. Within the past 2 years, Dr. Khubchandani has received research funding from Merck Neuroscience Laboratories and Ball State University Foundation. Previously, he has also mentored racial/ethnic minority students on National Science Foundation and National Institute of Diabetes and Digestive and Kidney Diseases funded projects. More recently, his research has received widespread attention from prominent media outlets such as Fox News, CNN, CNBC, MSN, Bloomberg News, Chicago Tribune, WSJ, and Huffington Post. Dr. Khubchandani also serves as an Associate Editor or Editorial Board Member for six journals in the field of public health and biomedical sciences. In 2017, he was also elected Director of the World Association of Medical Editors. Dr. Khubchandani has received many prestigious honors such as the Indiana Governor's Service Learning Award (2012), Hurley Goodall Distinguished Faculty Award (2012), Hero of Health Education (2012) and Open Society Award (2017) from Society for Public Health Education,

Outstanding Junior Faculty Award (2014) and Outstanding Diversity Advocate (2017) from Ball State University.

Kosnett, Michael

University of Colorado School of Medicine

Dr. Michael Kosnett is a medical toxicologist with a clinical and research interest in the toxicology of lead, arsenic and other heavy metals. Dr. Kosnett received his B.S. degree in Molecular Biophysics & Biochemistry from Yale University in 1979, his M.D. degree from the University of California, San Francisco in 1983, and his M.P.H. degree in Environmental Health Sciences from the University of California, Berkeley, in 1988. Dr. Kosnett is a Diplomate of the American Board of Internal Medicine, the American Board of Medical Toxicology, and the American Board of Preventive Medicine (Occupational Medicine). He is an Associate Clinical Professor in the Division of Clinical Pharmacology and Toxicology at the University of Colorado Health Sciences Center, and an Attending Physician at the Rocky Mountain Poison and Drug Center. Dr. Kosnett currently serves as the Chair of the Work Group on Lead in Consumer Products of the CDC Advisory Committee on Childhood Lead Poisoning Prevention. He is Past-President of the American College of Medical Toxicology (2002-2004), the national organization of physicians specializing in the field of medical toxicology. In 2005, he completed three years of service on the National Institute for Occupational Safety and Health (NIOSH) - funded Expert Panel on Medical Management Guidelines for Lead Exposed Adults convened by the Association of Occupational and Environmental Clinics. He is a past member of the Committee on Toxicology of the National Research Council, and of the US EPA Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) Scientific Advisory Panel on Copper-Chromated-Arsenic Treated Wood. He has served on the Subcommittee on Arsenic in Drinking Water of the National Research Council (1999 and 2001 reports). He is currently a member of the World Health Organization's Antidote Monograph Peer Review Committee, and he has been a Temporary Advisor to the World Health Organization regarding human arsenic exposure from drinking water in India and SE Asia. Between 1997 to 2000, Dr. Kosnett served on four expert workshop panels convened by the Agency for Toxic Substances and Disease Registry (ATSDR) to develop recommendations on medical monitoring for residents impacted by the Bunker Hill, Idaho Superfund Site, the largest lead-contaminated site in the United States. Dr. Kosnett has been a recent consultant to the CDC's National Center for Environmental Health on selected sections on metals (including lead) contained within the Second and Third National Report on Human Exposure to Environmental Chemicals. In 2003, Dr. Kosnett was recipient of the Assistant Administrator's Award for Special Service to the Agency for Toxic Substances and Disease Registry. Dr. Kosnett has conducted research and authored several papers and book chapters on the clinical toxicology of human exposure to lead and arsenic, including the use of noninvasive K x-ray fluorescence as a biomarker of cumulative lead exposure, and the clinical manifestations of acute and chronic arsenic intoxication. He has served as a consultant to the Occupational Lead Poisoning Prevention Program of the California Department of Health Services for more than 15 years, and also serves as an advisor on childhood lead screening and prevention for the Colorado Department of Public Health and Environment. In Denver, Dr. Kosnett was an EPA funded Technical Advisor to a community group regarding the VB/I-70 Superfund site, a large residential area impacted by arsenic and lead in residential soil, and he was a technical consultant to the ATSDR funded "Kids At Play" study of childhood pica behavior conducted in that venue. Dr. Kosnett is Principal Investigator for the American College

of Medical Toxicology regarding ATSDR Funding Opportunity CDC-RFA-TS09-903, Award TS0990304CONT12, “National Environmental Medicine Education and Consultation Project (NEMECP)”, a 5 year cooperative agreement from 2009 to 2014.

Loccisano, Anne

Exponent Inc

Dr. Anne Loccisano is currently a consultant with Exponent, Inc in Alexandria, VA, where her work includes pharmacokinetic modeling, exposure and risk assessment, regulatory compliance, safety assessment, and litigation support for a number of agents, including pesticides, metals, consumer products, perfluorinated compounds, and pharmaceuticals. She has experience in the development and application of physiologically-based pharmacokinetic (PBPK) models for perfluorinated compounds, lead, VOCs, pesticides, and a number of other agents. After receiving her Ph.D. in chemistry from Duquesne University in 2007, she was a postdoctoral fellow at The Hamner Institutes (2008-2011) where her work focused on the development of PBPK models to aid in risk assessment for perfluorinated surfactants. She was an ORISE fellow in the IRIS/NCEA division of the USEPA (2011-2012), where her work involved review, integration, and synthesis of toxicological data as well as development of PBPK models for chemicals of agency concern, and she has worked in the consumer products industry (Reynolds American), where her responsibilities included safety assessment and regulatory compliance. Dr. Loccisano has authored or co-authored nine peer-reviewed journal articles and book chapters and has been a member of the Society of Toxicology (SOT) since 2009. She obtained DABT certification in 2013. Dr. Loccisano has authored or co-authored nine peer-reviewed journal articles and book chapters and is an active member of SOT. She current serves as the Vice President of the Regulatory and Safety Evaluation Section (RSESS) of SOT, serves as a Councilor for the Biological Modeling Specialty Section (BMSS) of SOT, and as a Councilor the Risk Assessment Specialty Section (RASS) of SOT. Dr. Loccisano 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. She served as a peer reviewer on the 2017 USEPA panel for Proposed Modeling Approaches for a Health-Based Benchmark for Lead in Drinking Water.

Luderer, Ulrike

University of California at Irvine

Dr. Ulrike Luderer is Associate Professor of Medicine in the Division of Occupational and Environmental Medicine and Co-Director of the Environmental Toxicology Graduate Program at the University of California at Irvine. She also holds a joint appointment in the Department of Developmental and Cell Biology at UC Irvine. She received a Sc.B. in Biomedical Engineering and A.B. in French from Brown University, Ph.D. in Reproductive Endocrinology and M.D. from Northwestern University, and M.P.H. from the University of Washington, and is board-certified in Internal Medicine and in Occupational and Environmental Medicine. Dr. Luderer's research focuses on mechanisms of action of reproductive toxicants with a particular emphasis on oxidative stress as a mechanism of ovarian toxicity. Her ongoing work is investigating the interactions between genetic deficiencies in antioxidant capacity and toxicant exposure in ovarian toxicity, reproductive aging and ovarian cancer. Dr. Luderer currently serves as Chair of the Scientific Guidance Panel of the California Environmental Contaminant Biomonitoring

Committee. She previously served as a member of the Environmental Health Committee of the Science Advisory Board of the US Environmental Protection Agency. She has served on the National Toxicology Program/NIEHS Center for the Evaluation of Risks to Human Reproduction Expert Panel on 1- and 2-Bromopropane and chaired the Expert Panel on styrene.

Marcus, Steven

Rutgers University

Dr. Steven Marcus retired from a career in medical toxicology/pediatrics July, 2016. He spent the majority of his career working with adults and children exposed to pharmaceuticals and chemicals, and providing medical intervention for any toxicity determined to be related. His particular interest has been in children and adults exposed to lead from various sources. He graduated from Brooklyn College with an undergraduate degree in biology and chemistry, attended The Medical College of Virginia to obtain his MD degree. He did residency in Pediatrics for two years at Bellevue Hospital, NYU School of Medicine, and then at Jacobi Hospital/Albert Einstein College of Medicine before serving for two years in the U.S. Navy, in Iceland. He completed a fellowship in medical toxicology at Children's Hospital of Boston/Harvard Medical School. He has been the Medical and Executive Director of the New Jersey Poison Information & Education System since its formation in 1983. He attracted more than $100 million in external support. He currently sits and has sat on several advisory committees, including being the chair of the New Jersey Physician's Lead Advisory Council and being the consultant to the New Jersey Department of Health for Lead Poisoning. He sits on the New Jersey Department of Human Services Drug Utilization Board and on the Public Health Subcommittee of the Scientific Advisory Board of the New Jersey State Department of Environmental Protection.

Martin, Clyde F.

Texas Tech University

Dr. Clyde Martin received his PhD in Mathematics from the University of Wyoming in 1971, worked as a National Research Council Research Associate at NASA from 1971-1973 and was a Paul Whitfield Horn Professor of Mathematics at Texas Tech University for 30 years. Clyde F. Martin's research interests include the development and analysis of mathematical and statistical models in medicine and environmental problems and control theory. He has collaborated with engineers and scientists in a number of areas including aeronautics, bioengineering, economics, analytical chemistry, public health, epidemiology and chemical engineering on a variety of scientific topics. He is a Fellow of the Institute of Electrical and Electronic Engineers, a Fellow of the American Statistics Association and an elected member of the International Statistics Institute. In November of 2001 he received an honorary doctorate for his contributions to systems thoery from the Royal Institute of Technology in Stockholm, Sweden. He has received distinguished alumni awards from both Emporia State University and the University of Wyoming. He has directed more than 120 students to advanced degrees and published more than 400 papers in a variety of disciplines. From August 2012 to August 2013 he served as a Jefferson Science Fellow at the United States Department of State..

Pessah, Isaac

University of California, Davis

Dr. Isaac Pessah obtained his B.S. in Biological Sciences from Cornell University and his Ph.D. in Toxicology from the University of Maryland, College Park in 1984 under the mentorship of Professor Robert Menzer. He pursued postdoctoral training at UC Berkeley from 1984 to 1987 during which time he discovered a family of calcium channels termed ryanodine receptors. Since then, his research and academic interests have spanned the broad area of molecular and cellular mechanisms by which Ca2+ channels regulate cellular signaling in muscle, neurons, and immune cells. He studies the organization and function the macromolecular complexes regulating ryanodine-sensitive Ca2+ channels and how marine toxins (e.g., bastadins and xestospongins) and environmental chemicals (e.g., PCBs, PBDE's, pyrethroids) promote toxicity. Members of his laboratory have been studying gene/environment interactions influencing susceptibility that are relevant to autism and related developmental disorders using humanized mice possessing mutations known to contribute susceptibility to disease. He received the Pfizer Award for Research Excellence in 1997 and the Neurobehavioral Toxicology Society's Distinguished Lecture Award in 2010. Dr. Pessah is a member of the UC Davis Superfund Research Program, Society of Toxicology and Neurotoxicology Specialty Section, the American Chemical Society and Pesticide Toxicology Specialty Section, the American Society for Pharmacology and Experimental Therapeutics, the Biophysical Society, and International Neurotoxicology Association. He is on the editorial board of several journals. Currently he is Professor of Toxicology and in the Department of Molecular Biosciences, and Associate Dean of Research and Graduate Education at UC Davis School of Veterinary Medicine. He is Deputy Director of the UC Davis Center for Children's Environmental Health and Disease Prevention. The Center, established under his direction in 2000, is an NIEHS/USEPA funded multidisciplinary program aimed at understanding how environmental factors influence developmental neurotoxicity. Recently, he was appointed by Governor Jerry Brown to serve on the California Developmental and Reproductive Toxicant Identification (DART) Committee. His laboratory provides a truly unique opportunity for training graduate students and postdocs interested in developing strong interdisciplinary research experience that implement basic biophysical, chemical, and cellular physiological methods to answer important questions about etiological factors contributing to developmental disorders. Dr. Pessah has been PI or Co-PI on 14 major multi-year NIH grants from several institutes (NIEHS, NIAMS, NICHD, NIA, and NINDS), most of which have been successfully renewed at least once. He has successfully mentored 18 Ph.D. students and 18 postdoctoral fellows who have gone on to successful careers in academia and to leadership positions in industry and government. His research addresses the causes, consequences, prevention, and treatment of neurodevelopmental disorders, especially in the area of susceptible populations and gene/environment interactions. His research program has had important translational implications for understanding gene/environment interactions that promote human and animal disorders of the nervous system. Dr. Pessah has co-authored more than 200 peer-reviewed primary research publications and several reviews, and a book chapter.

Phalen, Robert

University of California-Irvine

Robert F. Phalen, Ph.D. is a Professor of Medicine in the Center for Occupational and Environmental Health at the University of California, Irvine. He is the founding director, and current co-director of the Air Pollution Health Effects Laboratory. He is a member of the graduate program in Environmental Toxicology, now called Environmental Health Science, and he is on the faculty of the Occupational Medicine Residency Program. His research is in several

areas: aerosol science, inhalation toxicology, air pollution health effects, modeling the deposition and clearance of inhaled substances, and radiation biology. At San Diego State University his undergraduate major was physics with a minor in mathematics, and his master's degree was in nuclear physics with an emphasis on inhaled nuclear reactor accident particles. At the University of Rochester (NY) School of Medicine and Dentistry, he obtained a Ph.D. in Radiation Biology and Biophysics, with an emphasis in Toxicology. His thesis was a study of inhaled nanosilver particles. His post-doctoral training was at the Lovelace Inhalation Toxicology Research Institute in Albuquerque, NM. He joined the Aerosol Physics group and worked on an NIEHS computer modeling grant on inhaled particles in four mammalian species, including humans. The University of California, Irvine, recruited Dr. Phalen to direct the Air Pollution Health Effects Laboratory, and to establish a research program. The research focused on the effects of air pollution mixtures on lung defenses. He has published over 250 journal papers, chapters, and proceedings papers on his research. Another research interest is in the ethics of laboratory, animal, and human research. He chaired the U.C. Irvine Institutional Review Board (IRB) for seven years, and was a member of the Institutional Animal Care and Use Committee for seven years. His ethics textbook, "Core Ethics for Health Professionals" (Springer International Publisher) was published in August 2017. His current research funding is from an endowment (the Stocking Family Trust). He is an elected fellow of three organizations: the Academy of Toxicological Sciences; the Southern California Academy of Sciences; and the American Association for the Advancement of Science. He is a full member of eight scientific societies, and is the chair of the Board of Directors of the California Society for Biomedical Research (CSBR). He has served on review and advisory committees for EPA, NIEHS, CDC/NIOSH, and the National Academy of Sciences (NAS), including the NAS Committee on Controlled Human Inhalation – Exposure Studies at EPA, and on EPA's Clean Air Scientific Advisory Committee – Particulate Material Subcommittee. He has authored and co-authored sixteen books and reports including "Methods in Inhalation Toxicology" (1997); "Introduction to Air Pollution Science" (2011); and "Core Ethics for Health Professionals" (2017). His recent awards include "Career Achievement" (Society of Toxicology – Inhalation Section); and "Public Education" (CSBR). He has chaired and co-chaired several international conferences on human effects of air pollutants; and on modeling inhaled aerosols.

Pounds, Joel G.

Pacific Northwest National Laboratory

Dr. Joel Pounds is a Senior Staff Scientist in Cell Biology & Biochemistry, Biological Sciences Division and Science Advisor to the Environmental Biomarkers Initiative at Battelle – Pacific Northwest National Laboratory in Richland, WA. He received his B.A. in Zoology and Chemistry from Olivet Nazarene College (1971), his M.S. in Environmental Toxicology from the University of Wisconsin (1973), and a Ph.D. in Toxicology (1977) from the University of Wisconsin. Dr. Pounds has directed research programs in Government (National Center for Toxicological Research, 1977-1985); National Laboratories (Brookhaven National Laboratory, 1985-1990), and Academia (Wayne State University, 1990-1999). He has focused his research on the cellular and molecular toxicity of lead and other metals, metal-metal interaction, and mathematical modeling of the response to metal mixtures. Dr. Pounds' current research includes use of mass-spectrometry based proteomic and NMR-based metabonomic instrumentation for characterization of biological responses to nanomaterials and other airborne toxicants. Dr. Pounds has served on numerous NIH, ATSDR, and EPA advisory committees related to

toxicology of lead, metals, mixtures, and risk assessment. In addition, he has many peer-reviewed publications, abstracts, and proceedings; edited volumes; and invited lectures, seminars and symposia in which he participated. Dr. Pounds' current active and pending research support pertains to proteomics, biomarkers, and systems toxicology, and includes: Battelle Memorial Institute (Implementation of Systems Toxicology for an Animal Model of Emphysema; Proteomic Characterization of Human Blood plasma); the Agency for Toxic Substances and Disease Registry (ATSDR) (Methods for Joint Toxicity Assessment of Environmental Mixtures); PNNL (Environmental Biomarker Initiative, Particulate Matter Impacts on Respiratory Health); and several private sector research contracts (Protein Biomarkers for Chronic Obstructive Pulmonary Disease; Proteomic Analysis of Plasma Proteins for Biomarkers of Stress).

Ramsay, Sharon

Independent Consultant

Dr. Sharon Ramsay holds a Doctorate in Education from Binghamton University, State University of New York and a Master of Public Health from Columbia University, New York. Dr. Ramsay has works as a Program Coordinator, Cornell University to develop and implement a regional plan to increase awareness of energy efficiency in an eight-county region in New York State. She was also Study Coordinator: Survey of Clinical Practices Regarding Extremely Premature Births in New York City Hospitals, for which she designed the study protocol, conducted surveys, created a database, and prepared a paper for peer review. She has also worked as an Associate for Climatology and Hydrology, in the School of International and Public Affairs, MPA Program in Earth System Science, Policy, and Management, at Columbia University. She served two years as Public Health Epidemiologist for the New York City Department of Health, where she prepared and presented educational materials, wrote study protocols and created data collection tools, wrote funding proposals for federal and state grants, analyzed health data and conducted epidemiological investigations, develop monitoring and reporting guidelines for grant recipients, and completed quarterly reports on program implementation. At the Mailman School of Public Health, she analyzed, cataloged, blood and urine samples for breast cancer research, and conducted quality control on blood samples. Dr. Ramsay has presented papers at several conferences, and published in conference proceedings, and has published in Advances in Medicine and Biology, Nova Science Publishers, 2012.

Schoof, Rosalind

Ramboll US Corporation

Dr. Rosalind Schoof is a Principal at Ramboll US Corporation (formerly ENVIRON). She is a board-certified toxicologist (first certified in 1986) and a Fellow of the Academy of Toxicological Sciences. She holds a PhD in toxicology from the University of Cincinnati and a B.A. in molecular biology from Wellesley College. Prior to joining ENVIRON in 2010, she worked at other consulting companies since 1987, and at Ortho Pharmaceutical from 1982 through 1987. Prior to graduate school she worked in the Office of Toxic Substance at the U.S. Environmental Protection Agency (during 1976 and 1977). Dr. Schoof has more than 35 years' experience assessing human health effects and exposures from chemical substances in a variety of settings. She is an internationally recognized expert on evaluation of arsenic and metals in the environment and in the diet, and on the bioavailability of metals from soil with over 35 peer-reviewed publications. She has served on numerous peer review panels for U.S. agencies and Canadian ministries, and on several National Research Council committees. She is currently a

member of the U.S. Department of Defense Strategic Environmental Research and Development Program (SERDP) Science Advisory Board. Other recent appointments included the external peer review of EPA's Approach for Estimating Exposures and Incremental Health Effects Due to Lead from Renovation, Repair, and Painting Activities in Public and Commercial Buildings, the Advisory Committee for the Washington Department of Ecology PCB Chemical Action Plan, and the Washington Department of Ecology Model Toxics Control Act Science Panel.

Schwartz, Joel

Harvard University

Dr. Joel Schwartz is a professor in the Departments of Environmental Health and Epidemiology at the Harvard School of Public Health, and Director of the Harvard Center for Risk Analysis. He has been on the faculty at Harvard since 1994. He has served on two National Academy of Sciences panels, on the Health Subcommittee of EPA's Board of Scientific Counselors, and was the longest serving member of the CDC's committee on Childhood Lead Poisoning Prevention (1994-2005), and as a member of EPA's Clean Air Scientific Advisory Committee Lead panel. He is a member of the steering committee of Harvard's Center for the Environment. Dr. Schwartz has been the co-director of the Biostatistics core of Harvard's National Institute of Environmental Health Sciences (NIEHS) Center, and the director of the Statistics Core of its Children's Environmental Health Center. His research has focused on health effects of environmental contaminants, including heavy metals, organic chemicals, and air pollution. More recent work has included effects of temperature. Much of his recent work has involved identification of factors conveying susceptibility, including genetic polymorphisms, epigenetic changes, disease status, and social factors. Dr. Schwartz has done much to spread more sophisticated methods to examine the shape of dose-response curves for environmental ages, including studies of lead and children's IQ in the mid 1990s. He has recently been involved in studies of effects of heavy metals, including lead, on cognitive function in the elderly. He has 400 publications in environmental health, including studies of exposure, health effects, biomarkers, and methods.

Stern, Alan

New Jersey Department of Environmental Protection/University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School

Dr. Alan H. Stern is the Bureau Chief for Risk Analysis in the Office of Science of the New Jersey Department of Environmental Protection; Adjunct Associate Professor in the Department of Environmental and Occupational Health of the Rutgers University School of Public Health. He received a bachelor's degree in biology from the State University of New York at Stony Brook (1975), a master's degree in cellular and molecular biology from Brandeis University (1978), a master of public health degree (1981) and a doctorate in public health from the Columbia University School of Public Health (1987). Dr. Stern is board-certified in toxicology by the American Board of Toxicology (Diplomate of the American Board of Toxicology). Dr. Stern's areas of expertise include risk assessment and exposure assessment including the application of probabilistic techniques to quantitative estimation of exposure and risk. His research interests have focused on heavy metals including lead, mercury, chromium and cadmium as well as on risk and benefit from fish consumption. Dr. Stern is currently a member of the Chemical Assessment Advisory Standing Committee of the USEPA's Science Advisory Board. Dr. Stern was a member of the National Research Council/National Academy of Sciences

Committee on the Toxicology of Methylmercury (1999-2000) and an invited panel member of the USEPA IRIS Workshop on the NRC Recommendations (October 15-16, 2014), the USEPA Science Advisory Board panel for the National-Scale Mercury Risk Assessment for Coal- and Oil-Fired Electrical Generating Units (June-July 2011) as well as the USEPA Science Advisory Board Panel for Peer Review of the All-Ages Lead Model (Oct. 27-28, 2005). He has also served on numerous USEPA-IRIS review panels including Toxicological Review of Urea (Dec. 13, 2010, Panel Chair), Toxicological Review of Trichloroacetic Acid (Dec. 10, 2009, Panel Chair), Toxicological Review of 2-Hexanone (May 22, 2008, Panel Chair), Toxicological Review of Toluene (Feb. 5, 2004, Panel Chair). Other panels, committees and workshops include, ATSDR Toxicological Profile Review of Revised Minimal Risk Levels (MRLs) for 1, 4-Dioxane (March-April, 2010), ATSDR Toxicological Profile Review of Revised Inhalation MRL for 1, 4-dioxane (Sept. 2011), .USEPA Panel for the Review of Draft Exposure Factors Handbook (March 3-4, 2010), USEPA Workshop on Cardiovascular Toxicity of Methylmercury (Jan. 12-13, 2010), USEPA Panel for Review of "Draft Child-Specific Exposure Factors Handbook" (Sept. 19-20, 2007. Dr. Stern has authored numerous articles in peer-reviewed journals, and contributed a book chapter on Exposure Assessment for Neurotoxic Metals in "Human Developmental Neurotoxicology" D. Bellinger, ed. (Taylor & Francis, New York, 2006), and the article on "Environmental Health Risk Assessment" in the Encyclopedia of Quantitative Risk Assessment and Analysis, John Wiley and Sons Ltd., 2008.

von Lindern, Ian

TerraGraphics Environmental Engineering, Inc.

Dr. Ian von Lindern is Chairman and CEO of TerraGraphics Environmental Engineering in Moscow, Idaho. He holds a B.S. in Chemical Engineering from Carnegie-Mellon University and M.S. and Ph.D. degrees in Environmental Science and Engineering from Yale University. Dr. von Lindern has 40 years of national and international environmental engineering/science experience. He has directed more than 50 major health/environmental investigations involving primary and secondary smelters and battery processors, landfills, uranium mill tailings, at several major mining/smelting sites in the U.S. and internationally in North America, Asia, Africa, Australia, and Latin America. Dr. von Lindern has worked for the State of Idaho on projects involving the Bunker Hill/Coeur d'Alene Basin Hill Superfund Site for more than 35 years as the lead Risk Assessor. In that capacity he had extensive experience in applying exposure and bio-kinetic lead modeling in assessing human health risk, developing cleanup criteria and remedial design. He is currently Senior Project Manager implementing the human health cleanup at the Bunker Hill/Coeur d'Alene Basin Hill Superfund Site. He is involved in an International Initiative with the University of Idaho and non-governmental organizations (NGOs) to adapt the lead health response lessons learned in the U.S. to developing countries. He has designed and directed international cleanup projects in China, Russia, the Dominican Republic, and Senegal. In 2010-11, Dr. von Lindern directed the United Nations Children's Fund (UNICEF) humanitarian remediation of seven remote villages in sub-Saharan Zamfara, Nigeria, where 400 to 500 children had died of acute lead poisoning associated with artisanal gold mining. That project is ongoing in coordination with the U.S. Centers for Disease Control (CDC), Medicins Sans Frontieres (Doctors Without Borders), World Health Organization (WHO), and the Nigerian government. More than 10, 000 people remain severely lead poisoned in surrounding villages in Zamfara. Dr. von Lindern has served as a U.S. EPA Science Advisory Board (SAB) member on five occasions: (1) Review Subcommittee for Urban Soil Lead Abatement

Demonstration Project, 1993; (2) Subcommittee Assessing the Consistency of Lead Health Regulations in U.S. EPA Programs, 1992; (3) Review Subcommittee Assessing the Use of the Bio-kinetic Model for Lead Absorption in Children at RCRA/CERCLA Sites, 1988; (4) the Ad Hoc All-Ages Lead Model (AALM) Review; (5) Panel for National Ambient Air Quality Standard for Lead (2006-2008). He served on the EPA Clean Air Scientific Advisory Committee (CASAC) Subcommittee on Exposure Assessment Methodology, 1988; and was a member of the EPA Criteria Assessment Committee for Lead in the Ambient Air from 1975 to1986 and 2006 to 2008. He is currently principal investigator for a USEPA research project involving application of the in vitro soil and dust bioavailability test results to the Integrated Exposure Uptake Bio-kinetic (IEUBK) model for lead.

Vork, Kathleen

California Environmental Protection Agency

Dr. Kathleen Vork is a Staff Toxicologist for the Office of Environmental Health Hazard Assessment (OEHHA) at the California Environmental Protection Agency. She received her Ph.D. in Environmental Health Sciences from the University of California at Berkeley in 2003 and her MPH degree in Occupational and Environmental Health from the University of Minnesota School of Public Health in 1988. Prior to her position at OEHHA, Dr. Vork worked for the California Childhood Lead Poisoning Prevention Program. Dr. Vork has extensive experience and expertise relating to exposure pathways and the pharmacokinetics (PBPK) of lead in workers and the general population. Dr. Vork has implemented various statistical and mathematical modeling methods to estimate, adjust, and check the accuracy and consistency of predictions from models combining exposure pathways with physiologically based pharmacokinetic and bio-kinetic models. She is the primary author of the report entitled "Estimating Workplace Air and Worker Blood Lead Concentration using an Updated Physiologically-based Pharmacokinetic (PBPK) Model" (2013). She has conducted work involving the derivation of human lactation transfer coefficients for various chemicals including lead for the "Risk Assessment Guidelines Technical Support Documents for Exposure Assessment and Stochastic Analysis" (2012), and contributed to "The Derivation of Non-cancer Reference Exposure Levels" (2007) for the California Air Toxics Hot Spots program. Dr. Vork has worked collaboratively with multiple agencies and the public. She has recently served on USEPA peer-review consult panels involving complex modeling of lead exposure and pharmacokinetics (2015, 2016, and 2017). She has also served on the California Advisory Committee for Training Regulations for Lead Paint Abatement while working for the California Lead Poisoning Prevention Program, and she chaired the Lead Training Course Planning Committee while working for the Alameda County Lead Poisoning Prevention Program. She attended the University of California at Berkeley (Ph.D. in Environmental Health Sciences (2003)) and the University of Minnesota (MPH in Occupational and Environmental Health).

Weitzman, Michael

New York University School of Medicine

Dr. Michael Weitzman is a professor of Pediatrics and of Psychiatry at the New York University School of Medicine where he previously served as the Chair of the Department of Pediatrics. Prior to this, he was the Executive Director of the American Academy of Pediatrics' Center for Child Health Research and Professor and Associate Chair of Pediatrics at the University of Rochester. Before that he was Director of Maternal and Child Health for the City of Boston (in

which capacity he ran both the City's Lead Poisoning Prevention and Treatment Programs) and Director of General Pediatrics at Boston City Hospital and Boston University. Dr. Weitzman has published close to 300 peer-reviewed articles, chapters, books and abstracts of scholarly work. Most of his scientific work involves extensive collaboration with scientists from other fields. His work has focused on the epidemiology of child physical and mental health and health disparities at the boundaries of Pediatrics, the behavioral sciences, and Environmental, Public and Community Health. Much of it has dealt with environmental influences, such as lead and secondhand smoke exposure, as well as social influences on child physical and mental health and development. He has been the Principal or Co-Investigator on more than $10 million dollars of lead-related research. He currently is the principal investigator on an NIEHS ARRA funded grant entitled Preventing Childhood Lead Exposure By Window Replacement (1RCES018558-01). Other sources of research grants include the Centers for Disease Control (to develop collaborative linkages to conduct obesity related policy relevant research), the National Institute of Allergy and Infectious Diseases (to test an intervention to improve the health and functioning of urban high school students with undiagnosed asthma), and the US Department of Housing and Urban Development (to investigate the role of window repair and replacement in reducing children's dust lead exposure in two Illinois communities). Dr. Weitzman has more than 35 years of experience treating children with lead poisoning, running lead poisoning prevention programs, researching ways to achieve primary prevention, writing peer-reviewed papers and speaking around the globe about childhood lead exposure. He has served on the New York State Governor's Advisory Committee on Childhood Lead Poisoning; on the CDC's Lead Poisoning Prevention Committee, and chaired its Workgroup on Blood Lead Levels less than 10 ug/dl from 2002-2006 (in which capacity he was the lead author of the CDC Report on Blood Lead Levels Less than 10 ug/dl). Both his work leading the CDC efforts to understand the effects of low level lead exposure, and his serving as an expert witness in the Department of Justice's Federal Racketeering Case against the Tobacco Industry from 2000-2006 (DOJ vs Phillip Morris, Inc. et al, Civil No. 99-2496, D.D.C.), where he offered expert witness testimony on the causal nature of the relationship between prenatal tobacco and postnatal secondhand smoke and child development, recurrent ear infections, and Sudden Infant Death Syndrome have provided him with extensive experience in evaluating epidemiologic data for causal relations, and also demonstrates that both the CDC and the Department of Justice have relied on his expertise in these areas. He also served on the EPA's child scientific advisory committee and received that agency's first ever child environmental health advocacy award.