

**Invitation for Public Comment on the List of Candidates for the  
EPA Chartered Science Advisory Board  
July 29, 2016**

The U.S. Environmental Protection Agency (EPA) Science Advisory Board (SAB) Staff Office announced in a Federal Register Notice on April 6, 2016 (81 FR 19967-19969) that it was inviting nominations of experts to be considered for the Administrator's appointment to the Chartered SAB . The SAB is a scientific/technical advisory committee. The objective of the SAB is to provide independent advice and peer review to EPA's Administrator on the scientific and technical aspects of environmental issues. While the SAB reports to the EPA Administrator, congressional committees specified in ERDDAA may ask the EPA Administrator to have the SAB provide scientific advice on a particular issue.

The FR Notice sought: Analytical chemistry; ecological sciences and ecological assessment; economics; engineering; geochemistry; health disparities; health sciences; hydrology; hydrogeology; medicine; microbiology; modeling; pediatrics; public health; risk assessment; social, behavioral and decision sciences; statistics; and toxicology.

The SAB Staff Office is especially interested in scientists with expertise described above who have knowledge and experience in air quality; agricultural sciences; climate change; drinking water; energy and the environment; water quality; water quantity; water reuse; ecosystem services; community environmental health; sustainability; chemical safety; green chemistry; human health risk assessment; homeland security; and waste and waste management.

The SAB Staff Office identified 29 candidates based on their expertise and willingness to serve. We hereby invite public comments on the attached List of Candidates for consideration by the SAB Staff Office. Comments should be submitted to Mr. Thomas Carpenter, Designated Federal Officer no later than August 19, 2016 at [carpenter.thomas@epa.gov](mailto:carpenter.thomas@epa.gov). E-mail is the preferred mode of receipt. Please be advised that public comments are subject to release under the Freedom of Information Act.

## **2016 Chartered SAB Annual Membership**

**Bell, Michelle L.**

**Yale University**

Dr. Bell is the Mary E. Pinchot Professor of Environmental Health at Yale University in the School of Forestry and Environmental Studies. She holds secondary appointments in the Yale School of Public Health, Environmental Health Sciences Division, and the Environmental Engineering Program in the Department of Chemical and Environmental Engineering. She holds degrees from the Massachusetts Institute of Technology, Stanford University, and Johns Hopkins University. Her research investigates how human health is affected by atmospheric systems, including air pollution and weather. She also explores which subpopulations are most affected, such as by sex, socio-economic status, or race/ethnicity. Other work focuses on how climate change could affect the environment and thereby human health. Much of this research is based in epidemiology, biostatistics, and environmental engineering. The research is designed to be policy-relevant and contribute to well-informed decision-making to better protect human health. Her recent funding sources are the US Environmental Protection Agency and National Institute of Environmental Sciences. Dr. Bell is Director of the SEARCH (Solutions for Energy, AiR, Climate, and Health) Center, a multi-disciplinary research center funded by the US Environmental Protection Agency to investigate scientific questions relating to energy policy, air pollution, human health, equity, and climate change in the United States. She is the recipient of the Prince Albert II de Monaco / Institut Pasteur Award, Rosenblith New Investigator Award, and the National Institutes of Health Outstanding New Environmental Scientist (ONES) Award. Dr. Bell has authored over 130 peer-reviewed publications. She has served on review panels for the National Institutes of Health, US Environmental Protection Agency, and the National Academies, as well as on the editorial boards of several academic journals.

**Bennett, Deborah Hall**

**University of California, Davis**

Dr. Deborah Bennett is currently an Associate Professor of environmental and occupational health at the University California, Davis. She received her Ph.D and M.S. in Mechanical Engineering from the University of California, Berkeley, and her B.S. in Mechanical Engineering from the University of California, Los Angeles. Dr. Bennett's research focuses on the fate, transport, and exposure of organic compounds chemicals in multi-scale applications, including direct consumer product use, and indoor and outdoor multimedia environments within the context of both environmental epidemiology and environmental risk assessment. Her work utilizes both modeling and measurement techniques, bridging the gap between these two lines of inquiry. She has research funding from the Environmental Protection Agency to conduct modeling of the fate, transport, and resulting exposures from use of consumer products in the indoor environment. The American Chemistry Council is funding efforts for a modeling framework capable of rapidly calculating exposures over a continuum of spatial/temporal scales. She is involved in several projects funded through several NIEHS grants focusing on environmental causes of Autism. She has funding from the California air resources Board to evaluate the impact of air filtration interventions on asthma exacerbation, and a separate grant to evaluate ozone forming potential from low volatility compounds in consumer products. She has funding from NIOSH to evaluate heat exposure among farmworker populations, as well as pesticide exposure among landscape workers and farmworkers. She has served on various United States Environmental Protection Agency Science Advisory Boards, Panels, and advisory committees related to the Exposure Factors Handbook, Exposure Metrics for the National Children's Study, Estimation Associate Editor for the Journal of Exposure Science and Environmental Epidemiology. She has served as an Elected Councilor, Treasurer, and Chair

of the Awards Committee for the International Society of Exposure assessment. She has received funding from the American Chemistry Council, California Air Resources Board, Environmental Protection Agency, and the National Institute for Environmental Health.

### **Burken, Joel**

#### **University Missouri S&T**

Dr. Burken is Chair and Curators' Distinguished Professor of the Civil, Architectural and Environmental Engineering Department and the Missouri University of Science and Technology (Missouri S&T). He is former director and current senior investigator in the Missouri S&T Environmental Research Center. Joel received his BSCE, MSCE, and PhD from the University of Iowa in 1991, 1993, and 1996, respectively. Joel's research and service efforts have focused upon low impact and natural treatment systems since 1991. In that time, terms of sustainable-remediation, green infrastructure, and green-remediation have evolved and now promote the same fundamental aspects surrounding water quality and water resource management. Dr. Burken has been recently been funded from the National Science Foundation, from EPA, NIEHS, the US Navy, BP, and DOE Run Mining. Over his career, he has also received funding from NIEHS (R01), EPA, and NSF for fundamental research, and he has funding from the DoD branches for work on assessing exposure on military facilities and remediating polluted sites. International funding has also been provided from OECD, the EU, and the Ministry of the Environment, Ontario Canada. His research in phytoremediation of organic contaminants and pioneering work in phytoforensics, a novel approach to use plants as bio-sentinels of environmental pollutants and potential human exposure, have led to over 80 publications, a patented environmental assessment method, and international recognition with multiple research, teaching and service awards. This recognition includes twice winning the ASCE Rudolf Hering Medal, an NSF Career award, and being appointed a Fellow of the Association of Environmental Engineering and Science Professors (AEESP). Dr. Burken has received the highest Missouri S&T awards for teaching, service, advising and has received the Faculty Excellence award 7 times. In 2015 Dr. Burken received the President's Award for University Citizenship across the entire University of Missouri System.

### **Chambers, Janice**

#### **Mississippi State University**

Dr. Janice Chambers is a William L. Giles Distinguished Professor and the Director of the Center for Environmental Health Sciences in the College of Veterinary Medicine, Mississippi State University. She is originally from Berkeley, CA, and obtained a BS in biology from the University of San Francisco and a PhD in animal physiology from Mississippi State University. Her initial faculty appointment at Mississippi State University was in the Department of Biological Sciences and at present in the Department of Basic Sciences in the College of Veterinary Medicine where she conducts research and teaches in toxicology. She has mentored 22 MS and 19 PhD students. She has served in leadership roles in the Society of Toxicology. She is currently on the editorial boards of Toxicology and the Journal of Exposure Science and Environmental Epidemiology, and has previously served on the editorial boards of several other toxicology journals. She served as a member of the permanent Scientific Advisory Panel for FIFRA for two terms, and served two terms on the initial Human Studies Review Board for the US EPA. She has also served on the CDC National Center for Environmental Health and Agency of Toxic Substances and Disease Registry Board of Scientific Counselors, the National Research Council Research Associateship review panel and a number of NIH scientific review panels. She received the Burroughs Wellcome Toxicology Scholar Award, the Society of Toxicology's Education Award and the International Award for Research in Agrochemicals from the Agrochemicals Division of the American Chemical Society, as well as a number of research awards from units at Mississippi State University. She is board certified in toxicology by the American Board of Toxicology and the Academy of Toxicological Sciences, and she has previously served in leadership roles in both organizations. She has been continuously funded as Principal Investigator throughout her career by competitive grants, primarily from the National Institutes

of Health, the US Environmental Protection Agency and the Department of Defense's Defense Threat Reduction Agency. She has over 130 peer-reviewed publications and book chapters, and over 315 abstracts. She holds a patent on novel antidotes for nerve agents and other organophosphates. Her major research areas currently or previously have included the neurotoxicology of pesticides and chemical warfare agents; disposition, metabolism and toxic effects of neurotoxic compounds; developmental effects of pesticides; development of antidotes to organophosphate insecticides and nerve agents; human exposure monitoring for pesticides; associations of legacy organochlorine insecticides in chronic diseases with emphasis on populations displaying health disparities; and biochemical mechanisms of toxicity of environmental chemicals.

**Checkoway, Harvey**

**University of California San Diego**

Dr. Harvey Checkoway is a Professor in the Department of Family Medicine and Public Health at the University of California, San Diego (UCSD), with an Adjunct Professorship in the UCSD Department of Neurosciences. He previously held faculty positions in the Departments of Environmental and Occupational Health Sciences and Epidemiology at the University of Washington, and the Department of Epidemiology at the University of North Carolina. He was a Visiting Scientist for 1 year at the International Agency for Research on Cancer (IARC). Dr. Checkoway earned a BA in Psychology from Boston University, an MPH in Epidemiology from Yale University, and a PhD in Epidemiology from the University of North Carolina. His research has focused on epidemiologic investigations of environmental risk factors for non-infectious diseases, especially cancers and neurodegenerative disorders. Dr. Checkoway is lead author of both editions (1989, 2004) of "Research Methods in Occupational Epidemiology," Oxford University Press. While at the University of Washington, he served as Director of the Superfund Research Program Center and the Environmental and Molecular Epidemiology Training Grant, both funded by the National Institute of Environmental Health Sciences (NIEHS). Dr. Checkoway was an appointed member of the NIEHS National Toxicology Program Board of Scientific Counselors. He served as a member of the National Academy of Sciences, Institute of Medicine Committee (IOM) on the Role of Asbestos in the Causation of Esophageal, Stomach, Pharyngeal, Laryngeal, and Colorectal Cancers. Dr. Checkoway was an appointed member to the IOM Committee to Study the Mortality of Military Personnel Present Atmospheric Tests of Nuclear Weapons, and chaired the NIOSH Workers' Family Protection Task Force. He also has served on World Health Organization committees reviewing the global burden of asbestos-related cancer and DDT hazard assessment, and on the NIEHS Gulf Long-term Follow-up Scientific Advisory Board. Dr. Checkoway's research has been supported recently by NIEHS and the National Multiple Sclerosis Society.

**Cullen, Alison**

**University of Washington**

Dr. Alison Cullen is Professor of Public Affairs at University of Washington's Evans School of Public Policy and Governance. She holds a B.S. in Civil/Environmental Engineering from MIT (1984), and an M.S. in Environmental Health Science, Exposure Assessment, and Engineering (1989) and an Sc.D. in Environmental Health Management (1992) from Harvard University School of Public Health. Dr. Cullen joined the faculty at University of Washington in 1995, and has also served as Associate Dean for Academic Affairs. Her research involves the analysis of environmental health risks, decision making in the face of uncertainty and variability, and the application of value of information and distributional

techniques. Dr. Cullen's areas of specialization include Environmental Risk Analysis and Policy, Human Exposure and Health Risk, Quantitative Uncertainty Analysis, and Statistical Decision Theory. She was a 2007-08 visiting professor at the Swiss Federal Institute of Technology (ETH) in Zürich, Switzerland, and is active in projects in the U.S. and internationally. Dr. Cullen serves on the board of the University of Washington's Environmental Management Program. She is also the past president of the Society for Risk Analysis. Dr. Cullen previously served on the faculty of the Harvard University School of Public Health. Her research is published in numerous peer reviewed articles and a book with co-author H.C. Frey entitled Probabilistic Techniques in Exposure Assessment: A Handbook for Dealing with Uncertainty and Variability in Models and Inputs. She is a recipient of the U.S. Environmental Protection Agency's Special Recognition in the Field of Air Toxics, the Chauncey Starr Award from the Society for Risk Analysis, and the Outstanding Young Scientist Award from the International Society of Exposure Assessment. Outside of academia, Dr. Cullen has held positions in the Water Quality Branch of the U.S. EPA and served as a technical consultant and advisor to many groups, including the Health Effects Institute, the U.S. Consumer Product Safety Commission, the State of Washington's Department of Ecology, the City of Seattle's Office of Sustainability, the Sloan Foundation and the Gates Foundation. She also serves on the U.S. EPA's Science Advisory Board (SAB) Chemical Assessment Advisory Committee (CAAC 2016 - present), the U.S. EPA's CASAC committee on Sulfur Dioxide NAAQS (2014 - present), and was an affiliate scientist on the National Center for Atmospheric Research's Uncertainty Initiative. Dr. Cullen's research over the past three years has been supported by grants from and contracts with both government agencies and non-profit foundations, with core research support from the federal government (U.S. EPA and U.S. NSF), with additional support from the Alfred P. Sloan Foundation and the Bill and Melinda Gates Foundation.

### Dasgupta, Purnendu

#### University of Texas at Arlington

Purnendu K. (Sandy) Dasgupta is the Hamish Small Chair in Ion Analysis and the Jenkins Garrett Professor of Chemistry and Biochemistry and an adjunct professor of Physics at the University of Texas at Arlington (UTA). Prior to coming to UTA to chair the Department of Chemistry and Biochemistry, He served 25 years at Texas Tech University as Paul Whitfield Horn Professor of Chemistry and Biochemistry and also as an adjunct professor of Mechanical Engineering. He received his B.Sc (Hons) in Chemistry from Bankura Christian College, M.Sc. in Inorganic Chemistry from the University of Burdwan (both in WB, India), Diploma in Electronics Technology from DeVry Institute of Technology (Chicago, IL) PhD in Analytical Chemistry with a minor in Electrical Engineering from Louisiana State University (Baton Rouge, LA). The emphasis of his research is the development of analytical instrumentation, especially as it applies to in-situ environmental analysis. His website says: We foster builders, not users. Professor Dasgupta is best known for his research on ion chromatography and his work on environmental perchlorate and iodine nutrition. He has published over 400 scientific papers in peer-reviewed journals and is the primary author of the current version of the undergraduate text "Analytical Chemistry", Christian, Dasgupta and Schug, Wiley, 2013. Dasgupta's research has been supported by grants from both government agencies e.g., USEPA, USDOE, ONR, NIH, NSF, NASA, CDC, AFOSR, TVA, States of California, Texas, and Florida, etc.; and nonprofit institutions, e.g., EPRI, Gerber Foundation, CDC Foundation, etc., private companies, e.g., Dow Chemical, Shell Development, Arizona Instruments, Dionex Corporation, Thermo Fisher Scientific, Novus International, Biowhittaker Corp., Agilent Technologies, etc. He has widely acted in a consulting/advisory capacity to most of the foregoing industrial firms as well as many others, including the Texas Emission Reductions Program Advisory Board, and the Texas Council of Environmental Science and Technology. His major recognitions include American Microchemical Society Benedetti-Pichler Award, American Chemical Society (ACS) Award in Chromatography, Dal Nogare Award in Chromatography, ACS J. Calvin Giddings Award in

Chemical Education, Senate of State of Texas Honor Proclamation, Fellow of the IEEE, and Eastern Analytical Symposium Award in Fields of Analytical Chemistry..

### **Driscoll, Charles**

#### **Syracuse University**

Dr. Charles T. Driscoll is a Distinguished Professor at Syracuse University, Syracuse New York, USA. Driscoll received his B.S. degree in Civil Engineering from the University of Maine in 1974, and his M.S. in 1976 and Ph.D. in 1980 in Environmental Engineering from Cornell University. Driscoll's teaching and research interests are in environmental engineering, environmental chemistry, biogeochemistry, ecosystem restoration, soil chemistry and environmental quality modeling. Driscoll's principal scholarly contribution has been long-term research on the impacts of air pollutants on ecosystems and their response to mitigation. His early research, which continues, involves characterizing the mechanisms by which acid deposition (acid rain) acidifies soil and surface waters, the impacts of this disturbance on ecosystem structure and function, and ecosystem recovery from recent decreases in emissions. In the 1980s Driscoll's research expanded to address on the inputs, transport, fate and bioaccumulation of mercury from atmospheric deposition. He also has expertise in ecosystem restoration, such as the remediation of mercury contaminated Onondaga Lake, New York and the Everglades. Driscoll has been active in science communication and his work has included a series of scientific synthesis and translation efforts to inform the natural resource management and the public. He has provided expert testimony on air pollution effects on ecosystems to U.S. Congressional and State committees. Driscoll participated in the National Research Council committees, including Air Quality Management (2004) which reviewed the Clean Air Act and made recommendations for future restructuring and currently a review of Everglades restoration. He is serving as a member of the U.S. Environmental Protection Agency Clean Air Scientific Advisory Committee panel reviewing the secondary National Ambient Air Quality Standard for Oxides of Nitrogen and Oxides of Sulfur (2009-2011, 2014-present), and participated on the US EPA Science Advisory Board committee reviewing the Mercury Risk Assessment for Coal-Fired and Oil-Fired Electric Generating Units (2011). Dr. Driscoll has authored or co-authored over 420 peer-reviewed articles, and has been acknowledged by the Institute for Scientific Information (ISI) as a highly cited researcher in both engineering and environmental science (H-index 91). In 2007 he was elected to the U.S. National Academy of Engineering.

### **Eastmond, David**

#### **University of California - Riverside**

Dr. David A. Eastmond is a professor and chair of the Department of Cell Biology & Neuroscience at the University of California, Riverside. He received his B.S. and M.S. degrees from Brigham Young University in Provo, Utah and his Ph.D. from the University of California, Berkeley. From 1987 to 1989, he was served as an Alexander Hollaender Distinguished Postdoctoral Fellow at Lawrence Livermore National Laboratory. Shortly thereafter, Dr. Eastmond joined the faculty at UC Riverside where he is actively involved in research and teaching in the areas of toxicology and risk assessment. The research in Dr. Eastmond's laboratory focuses on the mechanisms involved in the toxicity and carcinogenesis of environmental chemicals. His research has centered on the metabolism and chromosome-damaging effects of various environmental chemicals including benzene, a widely used industrial chemical and environmental pollutant, and ortho-phenylphenol, a commonly used fungicide and disinfectant. Dr. Eastmond has served as the president of the Environmental Mutagen Society and as a Jefferson Science Fellow in the US State Department. He has also participated on a variety of review panels related to chemical mutagenesis, carcinogenesis and risk assessment including panels for the US Environmental Protection Agency, the US Food and Drug Administration, the International Programme for Chemical Safety, the International Agency for Research on Cancer, the Organisation for Economic Cooperation and Development, Health Canada and the International Working Group for Genotoxicity Testing. He currently serves as the chair of the Board of Scientific Counselors for the National Toxicology Program

and as a member of the Carcinogen Identification Committee for the California Environmental Protection Agency.

**Fritz, Patricia**

**New York State Department of Health**

Ms. Patricia Mason Fritz, is a Research Scientist 3 with the Bureau of ToxicSubstance Assessment in the Center for Environmental Health. Pat holds a B.S. in Biology from Syracuse University, a B.S. in Forest Biology from SUNY College of Environmental Science and Forestry, and a Masters in Engineering (Environmental Engineering) from Rensselaer Polytechnic Institute. She has over 20 years of experience in public health risk assessment, and over 10 years of experience designing and conducting animal studies in neuropharmacology to support drug development. Her current research activities involve exposure assessment and toxicological risk assessment of chemical and biological contaminants in school, residential, community and occupational settings. Her work encompasses criteria and hazardous air pollutants, aerosols, aerobiology, asthma, indoor air quality, nanotechnology, mercury, alternative energy, and ambient water quality. As part of her responsibilities she responds to public inquiries about health effects from chemical and biological pollution. Pat has developed and provided training on health effects of air pollutants, smoke, nanoparticles and mercury; and has participated in multi-agency evaluations of environmental sampling data collected following industrial accidents, natural disasters and following the World Trade Center attacks. She has been a contributing scientist, principal investigator and co-author on research efforts related to pharmaceutical development, air pollution, mercury pollution, and asthma. She has served on technical and program advisory committees for NYSERDA (New York State Energy Research and Development Authority) for projects involved in alternative energy, wind energy, biomass fuels and emissions, a NYS DOT program advisory committee for ozone and air pollution outreach, multi-agency state workgroups and project teams related to worker exposures near toll-booths, environmental health and safety of nanomaterials, and EPA's ritualistic uses of mercury task force. Pat is an active member of the Air Toxics and Public Health, and Air Monitoring Committees of NESCAUM (Northeast States for Coordinated Air Use Management). Her public health efforts have been recognized through NYS Health Commissioner's Excellence and Recognition awards for her work in asthma, peer training, disaster recovery, and disease outbreak response. From 2012-2014 Pat was the PI on a project funded by the American Academy of Allergy, Asthma and Immunology to produce outreach materials for hospitality workers describing asthma-safe work practices. She is currently the PI for a three year, NYSERDA funded project to characterize particulate (ultrafine, fine and coarse) and gaseous emissions from high efficiency biomass-fueled appliances.

**Gardella, Joseph**

**University at Buffalo**

Joseph A. Gardella, Jr. is a SUNY Distinguished Professor and the John and Frances Larkin Professor of Chemistry at the University at Buffalo, SUNY. He is Director of the Interdisciplinary Science and Engineering Partnership (ISEP) with Buffalo Public Schools ([isep.buffalo.edu](http://isep.buffalo.edu)). Joe was raised in Detroit Michigan, and completed a BS in Chemistry and B.A. in Philosophy from Oakland University in Rochester Michigan., a Ph.D. in Analytical Chemistry at the University of Pittsburgh and did postdoctoral research in Physical Chemistry at the University of Utah. His research interests are in quantitative chemical and geographic information analysis and surface chemistry, applied to the study of environmental contamination in soils and air, environmental effects of and at polymer surfaces and tissue engineering with synthetic biomaterials He also is involved in STEM education with the Buffalo Public Schools His work is presently funded by the National Science Foundation and New York State Ed

Department, along with private STEM Funders Network for STEM Ed, NY Sea Grant, Schlumberger Foundation and a pending grant from the US Department of Justice for public environmental work. Dr. Gardella spent 25 years working with WNY communities affected by environmental concerns involving air and soil pollution. Present projects include coauthorship of the Mapping Waste (GIS) project of the Waste and Pollution group of the Environmental Alliance of WNY. He chairs the City of Buffalo Environmental Management Commission and is coChair of the Lake Ontario Ordnance Works Community Action Council (LOOW CAC, [www.loowcac.org](http://www.loowcac.org)). He is a member of the Board of Directors of Parent Network of WNY, an organization founded to support parents of special needs children. He also serves as a member of the Board of Trustees for Cradle Beach.

### Hamburg, Steven

#### Environmental Defense Fund

Dr. Steven Hamburg is chief scientist of the Environmental Defense Fund and is an ecosystem ecologist. Trained at Vassar College (AB, Biology), Yale (MFS ecology and forestry; PhD, biogeochemistry and ecosystem ecology), Stanford Universities (Post-doc ecology) and Harvard (Bullard Fellowship – mid career sabbatical) he has been involved in biogeochemistry/forest ecology research for more than 25 years. He has published more than 80 scientific papers on biogeochemistry, climate change impacts on forests and carbon accounting approaches and methodologies and has served as a lead author for the IPCC. His involvement with the IPCC resulted in his being acknowledged as one of the contributing recipients of the 2007 Nobel Peace Prize. He was twice awarded the US EPA Environmental Merit Award from Region 1 for his climate change related work. He was on the faculty of Brown University for 15 years where he was the founding director of the Global Environment Program at the Watson Institute for International Studies. Prior to being at Brown he was on the faculty of the University of Kansas where he directed the Environmental Studies Program and served as the Environmental Ombudsman. He has supervised the research of more than 20 graduate students and 60 undergraduates. He help found the East Asia Long-term Ecological Research network and served as the Vice Chair of the International Long Term Ecological Research Network. He currently co-chairs the Royal Society’s Solar Radiation Management Governance Initiative and USDA’s National Agricultural Research, Economics, Education and Extension Advisory Board as well as serving on numerous other science panels including at the National Research Council and the Federal Aviation Administration. Serving as a PI or co-PI he has received research funding from NSF, NASA, Luce and Mellon Foundations of over \$8,000,000. He is currently not a PI or co-PI on any research grants.

### Hufford, Walter R.

#### Talisman Energy USA Inc. - REPSOL

Mr. Walter R. Hufford is the Director of U.S. Government & Regulatory Affairs for Talisman Energy USA Inc., a part of the Repsol Group. He holds a B.S. in Earth Sciences - Geology from Middle Tennessee State University, an M.S. in Geology from Texas A&M University, and a Masters in Management – Business Administration from Pennsylvania State University. Mr. Hufford has 32 years of experience in the energy industry, working with environmental issues associated with both legacy and current operations. He provides internal technical and regulatory support in his company’s North America exploration and production operations, and serves on committees with trade organizations at the regional and national level. He has been integral to internal company activities relating to drilling and completions. Mr. Hufford participates on industry and state regulatory committees that address new legislation and rulemaking including oil and gas provisions. Mr. Hufford serves as a corporate advisor regarding hydraulic fracturing, gas migration and stray gas matters. Additionally, Mr. Hufford is a member of the

graduate faculty at Texas A&M University as a Professor of Practice teaching graduate level seminar courses. He sits on the board of directors for STRONGER (State Review of Oil, Natural Gas, Environmental Regulations) and has served as a board member with the Pennsylvania Environmental Council and the Pennsylvania Resource Council. His prior experience includes management of multimillion dollar environmental liabilities including nuclear fabrication and disposal sites; chemical plants; petrochemical facilities; manufacturing locations; and refinery projects with complex environmental and liability issues. He has successfully closed hundreds of environmentally-impacted sites regulated at the federal and state level throughout the United States. He served in a leadership role during the 2010 Macondo Deep Water Horizon gulf response, coordinating and advising as a company liaison with the U.S. Coast Guard, EPA, Departments of Homeland Security & Interior, U.S. Fish and Wildlife Service, as well as multiple state regulatory agencies. He also served as a spokesperson for BP's community outreach effort, conducting town hall meetings for residents and elected officials along the Gulf Coast. Mr. Hufford was selected to present at the EPA 2011 workshops dealing with hydraulic fracturing. Mr. Hufford has received no external research grants from either government agencies, private companies, or foundations during his tenure with Talisman or BP.

**Khanna, Madhu**

**University of Illinois at Urbana-Champaign**

Dr. Madhu Khanna is the ACES Distinguished Professor in Environmental Economics in the Department of Agricultural and Consumer Economics at the University of Illinois at Urbana-Champaign. She received her Ph.D. from the University of California at Berkeley. Her research focuses on environmental policy analysis and incentives for adoption of environmentally friendly technologies. She has examined the effectiveness of alternative market based instruments for inducing the adoption of best management practices in agriculture such as precision farming and improved irrigation methods and the targeting of green payment policies for reducing nitrogen run off and sediment from cropland. She has also examined the motivations and effectiveness of voluntary approaches to environmental protection. Her current work is examining the economics and land use implications of biofuel production. Her research is currently funded by NIFA/USDA and FAA. She was selected as a University of Illinois Scholar in 2004, a Leopold Leadership Fellow of the Woods Institute at Stanford University in 2010 and awarded the Paul A Funk Recognition by the College of ACES, University of Illinois in 2013. She has served on review panels for the USEPA and the USDA, on the Board of Directors of the Association of Environmental and Resource Economists, as editor of the American Journal of Agricultural Economics and is a co-editor of the Journal of the Association of Environmental and Resource Economists.

**Kissel, John**

**University of Washington**

Biosketch – John C. Kissel, Ph.D. Dr. Kissel is currently Professor of Environmental and Occupational Health Sciences at the University of Washington in Seattle, where he has been a member of the faculty since 1990. He held a prior position in the School of Public and Environmental Affairs at Indiana University. Dr. Kissel holds a Ph.D. in Civil/Environmental Engineering from Stanford University, an S.M. in Environmental Engineering from Harvard University, and a B.S. in Civil Engineering from the University of Notre Dame. He is a registered Professional Engineer. Dr. Kissel's research interests generally involve human exposure assessment, with emphasis on exposures related to waste management, agricultural and residential use of pesticides, and consumer products. He is particularly interested in probabilistic prediction of aggregate exposure and reconciliation of model predictions with observed biomarker data. Dr. Kissel and his students have produced multiple papers describing human exposure to

soil that are listed as “key studies” in US EPA’s Exposure Factors Handbook and have conducted both in vitro and in vivo investigations of dermal exposures to chemicals. Dr. Kissel is a former President and Councilor of the International Society of Exposure Science and also served one term as chair of the Exposure Assessment Specialty Group within the Society for Risk Analysis. He was a member of a National Academy of Sciences Committee that evaluated Superfund-related remediation of mining and smelting related contamination in the Coeur d’Alene Basin in Idaho and is currently a member of an Institute of Medicine committee examining post-war exposures to dioxin residues in C-123 aircraft that had been used to spray Agent Orange in Vietnam. Dr. Kissel has served as an ad hoc member of US EPA’s FIFRA Science Advisory Panel on multiple occasions and is currently a member of EPA’s Human Studies Review Board. He was also a reviewer of the WHO environmental health criteria document on Dermal Exposure. His research activities have been funded by US EPA, US DOE, US DOD, NIOSH and the Washington State Departments of Ecology and Health.

**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.

**Martin, Clyde**

**Texas Tech University**

Professor Clyde F. Martin is the Paul Whitfield Horn Professor Emeritus at Texas Tech University. Most recently he was a visiting scholar at Dartmouth College where he leads an effort to understand the transport of asbestos fibers through the human body. He received an MS and PhD in Mathematics at the University of Wyoming. Upon graduating from UW he was a National Research Council Research Associate at Ames Research Center, NASA, where he worked as an aeronautical engineer in automatic control. He then went to Harvard University as a NSF Energy Related Postdoctoral Fellow. While there he reinvested in mathematics and began fundamental work applying modern mathematical tools to engineering problems. He moved to Texas Tech University as a chaired professor. He founded the Center for Applied Systems and the Institute for the Mathematics of the Life Sciences. He was Professor of Epidemiology at the Medical School and Associate Director of The Institute for Environmental and Human Health. He held visiting positions at the Royal Institute of Technology (KTH) in Stockholm and Kyoto University and Tokyo-Denki University in Japan. He has held shorter visiting appointments at many other universities. He was awarded an Honorary Doctorate from KTH, he is a Fellow of the IEEE, a

Fellow of American Statistics Association and an elected member of the International Statistics Institute (equivalent of Fellow). He has been funded by NASA, NSF, DOE, EPA, AFOSR, NSA and other international agencies. In 2013-14 he was a Jefferson Science Fellow at the US Department of State where he worked with Feed the Future, Climate Smart Agriculture and agricultural insurance for small holders in Africa. He has directed more than 120 graduate students to advanced degrees and has published more than 400 papers and books. He is known for his ability to learn a new field.

**McCallum, Malcolm**

**McCallum Consulting**

McCallum previously worked in academia rising to Associate Professor. He currently works independently as a consultant. He holds a BS in agriculture, MS in environmental biology, and PHD in environmental sciences with specializations in conservation ecology and aquatic ecotoxicology. Much of his research is on amphibians and reptiles, however, as an environmental scientist he has recently been working on statistical models and big data projects on sociological aspects of the environment. He has published over 100 publications plus another ~50 reports and documents. He has served as editor of an international journal for over 10 years.

**Mena, Kristina D.**

**University of Texas Health Science Center at Houston**

Dr. Kristina D. Mena is Associate Professor and Program Head of Environmental and Occupational Health Sciences in the Division of Epidemiology, Human Genetics, and Environmental Sciences at the University of Texas – Houston, School of Public Health (UT-Houston SPH). She earned a BA in Biology at Franklin College (Indiana), a MSPH at the University of South Florida, a PhD in environmental microbiology and epidemiology at The University of Arizona, and completed a Post-Doctoral Fellowship in the Food Animal Health and Management Center at Kansas State University. As Program Head, Dr. Mena oversees all environmental faculty at each of the six campuses of UT-Houston SPH, which is part of the largest medical center in the world. A trained water microbiologist, Dr. Mena is located at the El Paso Regional Campus of UT-Houston SPH where she addresses Hispanic health disparities through epidemiological studies and human health risk assessment. Internationally, she is among a relatively small group of researchers with an expertise in microbial and chemical risk assessment, which evaluates both acute and chronic health outcomes associated with water. Her research has been funded by the National Institutes of Health (NIH), the National Aeronautics and Space Administration (NASA), the Paso del Norte Health Foundation, (the former) American Water Works Association Research Foundation (AwwaRF), and other agencies. Dr. Mena translates laboratory and field data to human health impact, and communicates such findings in ways meaningful among diverse audiences, including those facing health disparities. Her research has identified risk factors associated with infectious disease transmission for a range of populations – from those living in rural, socially marginalized communities to the flight crew at the International Space Station. Her studies incorporate clinical and environmental sampling, as well as survey administration in order to comprehensively characterize human health risk so that mitigation strategies can be developed and implemented. Dr. Mena currently serves as co-Director of the Community Engagement and Dissemination Core of the NIH-funded Hispanic Health Disparities Research Center (HHDRC) with the University of Texas at El Paso (UTEP). In addition, she has been named to serve as co-Director of the newly proposed Community Engagement Core for the renewal application of the NIH-funded Research Centers in Minority Institutions (RCMI) Border Biomedical

Research Center.

**Paulson, Jerome**

**George Washington University School of Medicine and Health Sciences**

Jerome A. Paulson, MD, FAAP is the medical director of the Pediatric Environmental Health Specialty Unit-East Program for the American Academy of Pediatrics. He is Professor Emeritus of Pediatrics at the George Washington University School of Medicine & Health Sciences and Professor Emeritus of Environmental & Occupational Health at the Milken Institute School of Public Health at GW. He served for over a decade of as the director of the Mid-Atlantic Center for Children's Environmental Health, the PEHSU that serves Federal Region 3 – DC, VA, WV, MD, DE and PA. Dr. Paulson is the immediate-past chairperson of the executive committee of the Council on Environmental Health for the American Academy of Pediatrics. He has received numerous honors and awards, including: 2014 – Elected a Fellow of the Collegium Ramazzini, an international environmental and occupational health honorary society; 2014 – received the National Healthy Schools Hero Award from the Healthy Schools Network, 2013 – selected for the 11th Annual George J. Ginandes, M.D. Visiting Lectureship in Pediatrics at Mount Sinai School of Medicine, New York, NY; 2011 – Elected to the American Pediatric Society, a national pediatric honorary society. He served on the Children's Health Protection Advisory Committee for the US Environmental Protection Agency from 2007-2013. In October 2004 he was a Dozor Visiting Professor at Ben Gurion University in Beer Sheva, Israel. He lectured there and throughout Israel on children's environmental health. He was a recipient of a Soros Advocacy Fellowship for Physicians from the Open Society Institute and worked with the Children's Environmental Health Network. He has also served as a special assistant to the director of the National Center on Environmental Health of the CDC working on children's environmental health issues. He has served on numerous boards and committees related to children's environmental health, has chaired or been on the steering committee of many meetings about children's environmental health, and has published and edited papers, book chapters and journals on the topic.

**Poirot, Richard L.**

**Independent Consultant**

Mr. Richard Poirot is an independent consultant who recently retired as the Air Quality Planning Chief with the Vermont Department of Environmental Conservation, where he's worked since 1978. During his 37 years in VT state government, Rich's responsibilities included developing and implementing State Implementation Plans to ensure attainment and maintenance of federal and state air quality standards for ozone, particulate matter, and regional haze. He developed interests and expertise in drawing inference on the nature of pollution sources from analysis of ambient air quality and meteorological measurement data. Rich has been an active participant on the Acid Deposition Committee and the Ambient Monitoring and Assessment Committee for the Northeast States for Coordinated Air Use Management (NESCAUM); the U.S. Environmental Protection Agency (EPA) Acid Rain Advisory Committee; the Data Analysis Workgroup for the Ozone Transport Assessment Group (OTAG); the Science and Technical Support Workgroup for the Federal Advisory Committee on Ozone, Particulate Matter and Regional Haze (OPRHA); the Monitoring and Data Analysis Workgroup for the Mid Atlantic/Northeast Visibility Union (MANE-VU), the Steering Committees for the Interagency Monitoring of Protected Visual Environments (IMPROVE); the Subcommittee on Scientific Cooperation for the U.S./Canada Air Quality Agreement; the EPA Clean Air Scientific Advisory Committee (CASAC), the CASAC Ambient Air Monitoring and Methods Subcommittee, the CASAC Panels for Particulate Matter, Ozone, Lead, and Secondary SOx and NOx National Ambient Air Quality Standards Review; the NARSTO External Review Panel; the U.S.

EPA Advisory Council on Clean Air Compliance Analysis and the Council Subcommittee on Ambient Air Modeling; and the Board on Environmental Studies and Toxicology (BEST) for the National Research Council. He is not currently a recipient of research grants from the Environmental Protection Agency, other federal agencies, or the private sector.

**Puls, Robert**

**University of Oklahoma**

Dr. Robert Puls recently retired as Director of the Oklahoma Water Survey and Associate Professor in the College of Atmospheric and Geographic Sciences at the University of Oklahoma. As Director, his research interests included ground water protection from nonpoint sources, water resource protection related to oil and gas operations, and wastewater reuse strategies. He received his Ph.D. in Soil and Water Science from the University of Arizona. He received his Masters in Forest Resources from the University of Washington and his B.S. in Natural Resources from the University of Wisconsin-Madison. Before coming to the University of Oklahoma, he worked for 25 years at the U.S Environmental Protection Agency (EPA) in the Ground Water and Ecosystems Restoration Division in Ada, Oklahoma. He was the Agency's technical lead for the National Hydraulic Fracturing and Drinking Water Study prior to his retirement from the Agency. He has previously held positions with EPA as Senior Soil Scientist, Division Director and Director of Research of the Ground Water and Ecosystems Restoration Division. His research has focused on use of passive systems to restore groundwater from nonpoint source contamination (e.g. nitrate), baseline water monitoring for oil and gas operations, and the transport, fate and remediation of inorganic contaminants in ground-water systems. He received funding over the last two years from the National Science Foundation. He has served on Advisory Boards and Committees with the USGS, USEPA, USDOE, National Research Council, the Nature Conservancy, the Ground Water Protection Council (GWPC), and private industry. Dr. Puls currently serves on the Editorial Board of the Land Contamination and Reclamation Journal and is on the Ground Water Education and Research Foundation of GWPC. Dr. Puls has authored / co-authored more than 150 research articles on the above topics, and served on numerous interagency work groups and ASTM committees.

**Rosen, Barry**

**Florida International University**

Barry P. Rosen, Ph.D., is Distinguished University Professor at Herbert Wertheim College of Medicine, Florida International University since 2009 and was Associate Dean for Research and Graduate Programs. He received his B.S. from Trinity College, Hartford, Connecticut and his M.S. and Ph.D. from the University of Connecticut and was an NIH postdoctoral fellow at Cornell University. He was a Professor at University of Maryland School of Medicine and was Chair and Distinguished Professor of Biochemistry and Molecular Biology at Wayne State University School of Medicine. He has mentored nearly 50 doctoral students and postdoctoral fellows. He has investigated mechanisms metal detoxification in bacteria, yeast, protozoans, mammals and plants. He identified the pathways of arsenic uptake, efflux, biotransformation and regulation in many organisms. He identified most known arsenic detoxification genes and characterized their gene products at the biochemical and structural level. He made the seminal discovery that aquaglyceroporin channels are transporters that nearly every organism uses for arsenic uptake. He published over 320 papers, reviews and books and is holder of an NIH MERIT Award and an R01. He is recipient the Basil O'Connor Award, March of Dimes, Maryland Distinguished Young Scientist Award, Josiah Macy, Jr. Faculty Scholar Award and is an elected fellow of both the American Association for the Advancement of Science (AAAS) and the American Society for Microbiology (ASM). He has several patents and an arsenic-hypermethylating bacterium named

Arsenicibacter rosenii after him. He has been on review panels at NIH, NSF and American Heart Association, and on multiple editorial boards. He was elected as President of National Association of Medical and Graduate Departments of Biochemistry. He was a member of the EPA Scientific Advisory Board Arsenic Review Panel. Most recently he served as an external Reviewer of the FDA proposed limit for inorganic arsenic in infant rice cereal.

### Sheppard, James

#### San Diego Zoo Institute for Conservation Research

Dr. James K. Sheppard is a Senior Researcher at the San Diego Zoo Institute for Conservation Research (SDZICR). He holds a B.S. in Biological Science and M.S. in Environmental and Marine Science from the University of Auckland, and a Ph.D. in Environmental Science from James Cook University. He completed a Postdoc at the SDZICR where he secured funding to establish and direct the Ellen Browning Scripps Spatial Ecology Lab. Dr. Sheppard is an ecologist with a broad background in environmental science, conservation biology, landscape ecology, GIScience, and sustainability. He has extensive expertise and experience researching the ecology of diverse taxa and habitats in the U.S. and internationally, including giant pandas, California condors, golden eagles, and desert tortoises. His research interests lie in the development and application of cutting-edge technologies, such as biotelemetry, unmanned aerial systems (UAS) and spatial modeling techniques to characterize the ecology of threatened species and habitats with a view to enhancing strategies for their conservation management. Dr. Sheppard's research has a strong applied component and has directly informed government and private sector conservation management efforts, including the zoning of habitat protection areas and the mitigation of renewable energy development impacts on ecosystems. Dr. Sheppard co-developed an analytical toolbox with the U.S. Geological Survey and the San Diego Supercomputer Center to characterize wildlife spatial behaviors in multiple dimensions that won the 2015 BMC-Ecology image prize, and he led the development of an autonomous early warning system to prevent avian impact injuries from wind farms. Dr. Sheppard has 31 scientific publications and has secured \$989,000 in research funding. He is an Associate Editor of The Journal of Wildlife Management, Chair of the Spatial Ecology and Telemetry Working Group of The Wildlife Society, and a consulting biologist with AECOM. Dr. Sheppard also served on the Wildlife and Pollinator Panel of the U.S. Department of Agriculture and is a founding member of the San Diego Zoo Global Wildlife Trafficking Taskforce.

### Sullivan, Mazeika

#### The Ohio State University

Dr. Mažeika Sullivan is an Associate Professor in the School of Environment and Natural Resources at The Ohio State University (OSU) and the Director of the Ramsar-designated Shiermeier Olentangy River Wetland Research Park. He received a B.A. in Anthropology from Dartmouth College, and earned his M.S. in Biology and Ph.D. in Natural Resources from the University of Vermont. Subsequently, he was a Postdoctoral Research Fellow at the University of Idaho before joining the OSU faculty in 2008. Dr. Sullivan's research focuses on aquatic and riparian systems, where his work bridges community and ecosystem ecology. He is particularly interested in understanding natural and human drivers of biodiversity, community organization, and ecosystem function, and in using basic science to inform conservation and restoration efforts. Dr. Sullivan served as a member of the SAB "Connectivity of Streams and Wetlands to Downstream Waters" Panel (2013-2014), has reviewed for over 20 ecological and environmental journals, and is an active member of the Society for Freshwater Science, American Fisheries Society, and Ecological Society of America. Dr. Sullivan is a Distinguished University teacher

and recently served as a Fulbright Distinguished Chair of Biodiversity and Sustainable Development (Colombia, 2014-2015). His recent research (2014-2016) has been funded by several sources, including the National Science Foundation, the US Fish & Wildlife Service, the Bureau of Land Management, and the Ohio Division of Natural Resources with projects examining the ecosystem impacts of dam removal, ecological and biogeochemical coupling between land and water, linkages between fluvial geomorphology and aquatic biodiversity, effects of wildfire on streams and riparian zones, population declines of aerial insectivorous riparian birds, and multiple stressors in rivers.

**Thurston, George**

**New York University**

Dr. George Thurston is a Professor with appointments in the Departments of Environmental Medicine and Population Health at the New York University School of Medicine, where he is Director of the Program in Human Exposures and Health Effects. Dr. Thurston received his undergraduate Sc.B. in Engineering from Brown University, and his Sc.D. and MS in Environmental Health Sciences from the Harvard University School of Public Health. His research focuses primarily on ambient exposures to air pollution and their human health effects, including cancer, respiratory, and cardiovascular disease. He also has published extensively on the clean air human health benefits of climate change mitigation. Dr. Thurston is especially interested in the source apportionment of the human health effects of air pollution, and has developed one of the most widely employed methods for conducting particulate matter source apportionment applicable to health effects assessment. He has published key papers on the association of ambient particulate matter and all cause and cardiovascular mortality in the nationwide American Cancer Society and the NIH-AARP Cohorts, as well as on the association of air pollution exposures with increased children's respiratory illness. Professor Thurston is a standing member of the NIH's Cancer, Heart and Sleep Epidemiology-B Study Section.

**Wells, E. Christian**

**University of South Florida**

Dr. E. Christian Wells is Professor of Anthropology and Director of the Center for Brownfields Research and Redevelopment at the University of South Florida (USF), where he has served as the Founding Director of the Office of Sustainability (2009-2012) and as Deputy Director of the Patel School of Global Sustainability (2010-2012). He holds affiliate faculty appointments at USF in the Patel College of Global Sustainability, the Water Institute, the Institute for the Study of Latin America and the Caribbean, and the Florida Institute of Forensic Anthropology and Applied Science. He has served on numerous regional and national advisory committees on applied social and environmental science, including for the American Anthropological Association and the Environmental Protection Commission of Hillsborough County Florida. He currently serves as Advisor to the Florida Brownfields Association Board of Directors. Wells received his B.A. from Oberlin College and his M.A. and Ph.D. in Anthropology from Arizona State University. He is an applied environmental anthropologist whose research takes place at the nexus of environmental justice and environmental health, and addresses key issues related to: sustainable development, brownfields communities, landscape legacies, anthrosol formation, water/wastewater management, science-policy interactions, and quantitative modeling and simulation of social and environmental science data. Over the past 20 years, he has undertaken social science and geoscience research throughout Central America and the Caribbean with over \$4.5 million in funding from the National Science Foundation and other agencies. Currently, he serves as Co-Principal Investigator of a five-year, \$3.9 million NSF-funded research project that examines resource recovery technologies (from wastewater) and their impact on the relationship between tourism and coastal health. His research has

been featured by various media outlets, including The New York Times, New Scientist, and Chemical & Engineering News, among others. He has written or edited seven books and journal issues as well as more than 100 articles, chapters, and reviews. He was recently awarded the Jerome Krivanek Distinguished Teacher Award (the highest teaching honor at USF) and the Black Bear Award by the Sierra Club of Tampa Bay “in recognition of outstanding dedication to sustainability and the environment.”

**Wilcoxon, Peter J.**

**Syracuse University**

Dr. Peter J. Wilcoxon is a Professor in the Department of Public Administration and International Affairs at Syracuse University's Maxwell School, and he is also a Nonresident Senior Fellow at the Brookings Institution. He is the author or coauthor of three books and more than 50 papers and has won teaching awards at Harvard University and Syracuse University. Dr. Wilcoxon's principal area of research is the effect of environmental and energy policies on economic growth, international trade, and the performance of individual industries. His work often involves the design, construction and use of large-scale intertemporal general equilibrium models. He is coauthor of IGEM, a thirty-five-sector econometric general equilibrium model of the US economy that has been used to study a wide range of environmental, energy and tax policies. He is also coauthor of G-Cubed, a nine-region, twelve-sector general equilibrium model of the world economy that has been used to study international trade and environmental policies. In addition, he is a coauthor of a graduate-level textbook on general equilibrium modeling. Many of his recent publications have focused on national and international policies to control climate change. Dr. Wilcoxon received his BA in physics from the University of Colorado and his AM and PhD in economics from Harvard University. His past positions include Associate Professor of Economics, the University of Texas at Austin; Assistant Professor of Economics, the University of Texas at Austin; Visiting Fellow, the Brookings Institution; Visiting Scholar, Harvard University, and Senior Research Fellow, the University of Melbourne in Australia. In addition, he has served on EPA's Environmental Economics Advisory Committee. Dr. Wilcoxon's research has been supported by EPA, the National Science Foundation, the Department of Energy, and private sector organizations.

**Yang, Raymond**

**Colorado State University**

Dr. Raymond S. H. Yang is Professor Emeritus of Toxicology and Cancer Biology, and the former leader of the Quantitative and Computational Toxicology Group, at the College of Veterinary Medicine and Biomedical Sciences, Colorado State University (CSU). Between October 2007 and July 2009, Dr. Yang had also been a Visiting Scientist at the National Center for Environmental Assessment, U.S. EPA, Cincinnati, to work on 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) and chemical mixture toxicology and risk assessment, among other projects. Dr. Yang's research focuses on physiologically based pharmacokinetic/pharmacodynamic (PBPK/PD) modeling, and other biologically-based computer modeling with a special emphasis on the toxicology of chemical mixtures. Dr. Yang has had extensive research and administrative experience in academia, chemical industry, and the federal government. At CSU in the last 20 years, Dr. Yang had served in the capacity as a Department Head, a Center Director, and the Director for a National Institute for Environmental Health Sciences (NIEHS) Quantitative Toxicology Training Program. Since June 2010, Dr. Yang has retired from the CSU but during his tenure at CSU in the past 20 years or so his research funding was principally from the NIEHS, Centers for Disease Control, and Department of Defense for toxicological interactions of chemicals including biologically based computer modeling. Dr. Yang publishes extensively in biomedical journals and is the editor/co-editor of two books; Toxicology of Chemical Mixtures: Cases Studies, Mechanisms, and Novel

Approaches (1994), and Physiologically Based Pharmacokinetics: Science and Applications (2005). Dr. Yang is a Fellow of Academy of Toxicological Sciences and served on many prestigious national and international committees and panels. Presently, Dr. Yang is working part-time as an international consultant; part of this service includes Dr. Yang's continuing teaching of his "PBPK Modeling Workshop for Beginners" at CSU and elsewhere in the US, Europe, and Asia.