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ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OPP-2015-0423; FRL-9929-66]

Nominations to the FIFRA Scientific Advisory Panel; Request for Comments

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: This notice provides the names, addresses, professional affiliations, and selected biographical data of persons recently nominated to serve on the Scientific Advisory Panel (SAP) established under section 25(d) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The Panel was created on November 28, 1975, and made a statutory Panel by amendment to FIFRA, dated October 25, 1988. The Agency, at this time, anticipates selecting two new members to serve on the panel as a result of membership terms that will expire in 2015. Public comments on the current nominations are invited, as these comments will be used to assist the Agency in selecting the new chartered Panel members.

DATES: Comments, identified by docket ID number EPA-HQ-OPP-2015-0423, must be received on or before **[INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Submit your comments, identified by docket identification (ID) number EPA-HQ-OPP-2015-0423, by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute.

- *Mail:* OPP Docket, Environmental Protection Agency Docket Center (EPA/DC), (28221T), 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001.

- *Hand Delivery:* To make special arrangements for hand delivery or delivery of boxed information, please follow the instructions at <http://www.epa.gov/dockets/contacts.html>.

FOR FURTHER INFORMATION CONTACT: Steven M. Knott, DFO, Office of Science Coordination and Policy (7201M), Environmental Protection Agency, 1200 Pennsylvania Ave., NW.,

Washington, DC 20460-0001; telephone number: (202)-564-0103; fax number: (202) 564-8382; email address: *knott.steven@epa.gov*.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this Action Apply to Me?

This action is directed to the public in general. This action may, however, be of interest to persons who are or may be required to conduct testing of chemical substances under the Federal Food, Drug, and Cosmetic Act (FFDCA) and FIFRA. Since other entities may also be interested, the Agency has not attempted to describe all the specific entities that may be affected by this action. If you have any questions regarding the applicability of this action to a particular entity, consult the DFO listed under **FOR FURTHER INFORMATION CONTACT**.

B. What Should I Consider as I Prepare My Comments for EPA?

When submitting comments, remember to:

1. Identify the document by docket ID number and other identifying information (subject heading, **Federal Register** date and page number).
2. Follow directions. The Agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
3. Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.
4. Describe any assumptions and provide any technical information and/or data that you used.
5. If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
6. Provide specific examples to illustrate your concerns and suggest alternatives.
7. Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
8. Make sure to submit your comments by the comment period deadline identified.

II. Background

The FIFRA SAP serves as the primary scientific peer review mechanism of EPA's Office of Chemical Safety and Pollution Prevention (OCSPP) and is structured to provide scientific advice, information and recommendations to the EPA Administrator on pesticides and pesticide-related

issues as to the impact of regulatory actions on health and the environment. Established in 1975 under FIFRA, the FIFRA SAP is a Federal advisory committee that operates in accordance with requirements of the Federal Advisory Committee Act (FACA). The FIFRA SAP is composed of a permanent panel consisting of seven members who are appointed by the EPA Administrator from nominees provided by the National Institutes of Health (NIH) and the National Science Foundation (NSF). FIFRA established a Science Review Board consisting of at least 60 scientists who are available to the SAP on an ad hoc basis to assist in reviews conducted by the FIFRA SAP. As a peer review mechanism, the FIFRA SAP provides comments, evaluations and recommendations to improve the effectiveness and quality of analyses made by Agency scientists. Members of the FIFRA SAP are scientists who have sufficient professional qualifications, including training and experience, to provide expert advice and recommendations to the Agency.

In accordance with the statute, the SAP is composed of a permanent panel of seven members, selected and appointed by the Deputy Administrator of EPA, as designated by the Administrator from nominees submitted by both the NSF and the NIH. The Agency, at this time, anticipates selecting two new members to serve on the panel as a result of membership terms that will expire this year. The Agency requested nominations of experts to be selected from the fields of human toxicology, environmental toxicology, pathology, risk assessment and/or environmental biology with demonstrated experience and expertise in all phases of the risk assessment process including: Planning, scoping, and problem formulation; analysis; and interpretation and risk characterization (including the interpretation and communication of uncertainty). Nominees should be well published and current in their field of expertise. The statute further stipulates that we publish the name, address and professional affiliation in the **Federal Register**.

III. Charter

A Charter for the FIFRA Scientific Advisory Panel dated October 17, 2014 was issued in accordance with the requirements of the Federal Advisory Committee Act, Pub. L. 92-463, 86 Stat. 770 (5 U.S.C. App. I).

A. Qualifications of Members

Members are scientists who have sufficient professional qualifications, including training and experience, to provide expert comments on the impact of pesticides on health and the environment. No persons shall be ineligible to serve on the Panel by reason of their membership on any other advisory committee to a Federal department or agency or their employment by a Federal department or agency (except the EPA). The Deputy Administrator appoints individuals to serve on the Panel for staggered terms of 3 years. Panel members are subject to the provisions of 40 CFR part 3, subpart F, Standards of Conduct for Special Government Employees, which include rules regarding conflicts of interest. Each nominee selected by the Deputy

Administrator, before being formally appointed, is required to submit a confidential statement of employment and financial interests, which shall fully disclose, among other financial interests, the nominee's sources of research support, if any.

In accordance with section 25(d)(1) of FIFRA, the Deputy Administrator shall require all nominees to the Panel to furnish information concerning their professional qualifications, educational background, employment history, and scientific publications.

B. Applicability of Existing Regulations

With respect to the requirements of section 25(d) of FIFRA that the Administrator promulgate regulations regarding conflicts of interest, the Charter provides that EPA's existing regulations applicable to Special Government Employees, which include advisory committee members, will apply to the members of the Scientific Advisory Panel. These regulations appear in 40 CFR part 3, subpart F. In addition, the Charter provides for open meetings with opportunities for public participation.

C. Process of Obtaining Nominees

In accordance with the provisions of section 25(d) of FIFRA, EPA, on April 21, 2015, requested that the NIH and the NSF nominate scientists to fill vacancies occurring on the Panel. The Agency requested nominations of experts in the fields of human toxicology, environmental toxicology, pathology, risk assessment, and/or environmental biology with demonstrated experience and expertise in all phases of the risk assessment process including: Planning, scoping, and problem formulation; analysis; and interpretation and risk characterization (including the interpretation and communication of uncertainty). NIH and NSF responded by letter, providing the Agency with a total of 34 nominees. Copies of these letters, with the listed nominees, are available in the public docket referenced in unit I.B.1. of this notice. Of the 34 nominees, 18 are interested and available to actively participate in SAP meetings (see Section IV. Nominees). One nominee is currently serving as member of the FIFRA SAP, and is not listed. In addition to the current nominees interested, at EPA's discretion, nominees who were interested and available during the previous nomination process in the January 24, 2014 **Federal Register** (79 FR 4158) (FRL-9904-66), may also be considered. Of the current 34 nominations, the following 15 individuals are not available:

1. Asa Bradman, Ph.D., University of CA, Berkeley, CA.
2. Mark G. Evans, DVM, PhD, ACVP, Pfizer Global Research and Development Drug Safety Research and Development, San Diego, CA.
3. John Groopman, PhD, Johns Hopkins University, Baltimore, MD.
4. Stephen S. Hecht, Ph.D., University of Minnesota, Minneapolis, MN.
5. Marie Lyn Miranda, PhD, Rice University, Houston, TX.
6. Frederica P. Perera, PhD, MPH, Columbia University, New York, NY.
7. Irva Hertz-Picciotto, PhD, University of California, Davis, CA.
8. Thomas A.E. Platts-Mills, M.D., University of Virginia, Charlottesville, VA.

9. Michael Roe, Ph.D., North Carolina State University, Raleigh, NC.
10. Ana Diez Roux, M.D, Ph.D., MPH, Drexel University, Philadelphia, PA.
11. Jonathan M. Samet, MD, University of Southern California, Los Angeles, CA.
12. David Siegel, MD, National Institute of Health, Rockville, MD.
13. Allan H. Smith, MD, PhD, University of California, Berkeley, CA.
14. Frank Speizer, SCD, MD, Harvard Medical School, Boston, MA.
15. Robert Williams, MD, University of New Mexico Health Sciences Center, Albuquerque, NM.

IV. Nominees

Following are the names, addresses, professional affiliations, and selected biographical data of current nominees being considered for membership on the FIFRA SAP. The Agency anticipates selecting two individuals to fill vacancies occurring in 2015.

1. Nicole L. Achee, PhD

- i. Expertise: Epidemiology control of arthropod-borne diseases including evaluation of vector ecology, habitat management, and adult control strategies, disease risk modeling using GIS and remote sensing technologies, and evaluation of chemical actions against mosquito vectors under both laboratory and field conditions.

- ii. Education: PhD Medical Entomology, Uniformed Services University of the Health Sciences; MSc, Zoology, Texas A&M University; BS, Biology, St. Louis University.

- iii. Professional Experience: Dr. Achee is a Medical Entomologist (Research Associate Professor) within the Department of Biological Sciences and holds a joint Associate Professor appointment in the Eck Institute for Global Health at the University of Notre Dame. She joined the University of Notre Dame faculty in 2013, following a 2-year position as Assistant Professor at the Uniformed Services University of the Health Sciences in Bethesda, MD. She has a combined 15 years of experience in vector behavior research related to the epidemiology and control of arthropod-borne diseases, including evaluation of vector ecology, habitat management and adult control strategies, disease risk modeling using GIS and remote sensing technologies, and evaluation of chemical actions against mosquito vectors under both laboratory and field conditions. She has worked in the international settings of Belize, Mexico, Peru, Suriname, Indonesia, Nepal, South Korea, Thailand, and Tanzania. Dr. Achee was the principal investigator of a research program funded by the Bill & Melinda Gates Foundation focused on the development of spatial repellents in combination push-pull systems to reduce human-vector contact for dengue prevention. She is a Working Group member of the World Health Organization (WHO) Pesticide Evaluation Scheme (WHOPES), the Chair of the American Committee of Medical Entomology (ACME) of the American Society of Tropical Medicine and Hygiene (ASTMH), a representative of the WHO Global Collaboration for the Development of Pesticides for Public Health partnership (GCDPP), Vector Control Working Group member of Roll Back Malaria and served as the lead scientist for the recent publication of the WHO Guidelines

for Efficacy Testing of Spatial Repellents. She is currently the lead Principal Investigator of a multicenter intervention trial dedicated to generating evidence of the protective efficacy of spatial repellents for prevention of malaria and dengue human infections for use towards full WHO recommendations. Her latest efforts have been dedicated to co-Directing the Belize Vector and Ecology Center (BVEC) in Orange Walk Town, Belize to serve as a regional platform of excellence for research and education in arthropod-borne diseases.

2. George B. Corcoran, PhD, ATS

i. Expertise: Pharmacological and toxicological adverse cellular outcomes, and factors that govern drug and chemical injuries including drug metabolism and nutrition.

ii: Education: PhD, Pharmacology, Department of Pharmacology, School of Medicine, George Washington University; MS, Chemistry, Bucknell University; BA, Chemistry, Ithaca College.

iii. Professional Experience: Dr. Corcoran is Professor and Chairman of the Department of Pharmaceutical Sciences, College of Pharmacy & Health Sciences, Wayne State University, and Adjunct Professor of Pediatrics, Wayne State University School of Medicine. Dr. Corcoran earned his BA in Chemistry (Ithaca College '70), MS in Chemistry (Bucknell University '73), and PhD in Pharmacology/Toxicology (George Washington University '80), before completing Postdoctoral Fellow training in Toxicology (Baylor College of Medicine and Methodist Hospital '81). Prior to his appointment at Wayne State, Dr. Corcoran served as Assistant Professor of Pharmaceutics at the State University of New York at Buffalo, followed by Associate Professor and later Professor, and Director of the Toxicology Graduate Program at the University of New Mexico. Dr. Corcoran has published over 200 original research papers, abstracts and other reports, and has received nearly \$6 million in grants and contracts as Principal Investigator, Co-Principal Investigator, and Co-Investigator. He has chaired grant review panels for the NIH, the National Academies, and the Howard Hughes Medical Institute, and has refereed papers for more than 50 national and international scientific journals. He has contributed to the training of over 150 MS and PhD graduates, 3200 pharmacists, and hundreds of undergraduate research students. His research interests are multidisciplinary and translational. They focus on cellular injury and cell death, and factors that govern drug and chemical injuries, including drug metabolism and nutrition. Approaches to translate basic discoveries to improve human health involve retrospective and prospective clinical investigation of human volunteers and patients, integrated in vivo models, cellular and molecular biology, pharmacokinetics, and synthetic chemistry. Specific areas of investigation include cell death by necrosis and apoptosis, the role of DNA damage in acute cell death, drug and chemical injury to the liver, nutrition and particularly obesity as overlooked factors in drug and chemical injury, drug biotransformation including by CYPs, and toxicity of drugs such as acetaminophen (paracetamol). Dr. Corcoran is a Fellow of the Academy of Toxicological Sciences, the top US credentialing organization for toxicologists. He was elected to its Executive Board and appointed to the National Toxicology Program Board of Scientific Counselors in 2012. He has been a Delegate to the International

Congress of Toxicology and member of the International Union of Toxicology Developing Countries Committee. He is a former Member of the Science Advisory Board of the US Environmental Protection Agency, is former Chair of the Executive Board of the Council of Scientific Society Presidents, and is a past member of the Intergovernmental Scientific Advisory Committee on Alternative Toxicological Methods. He has contributed to the scientific direction of the American Society for Pharmacology and Experimental Therapeutics as a member of its Scientific Council, and served on the Research and Graduate Affairs Committee of the American Association of Colleges of Pharmacy. Dr. Corcoran is sought as an expert in toxic tort, product liability and other legal matters. At the University of New Mexico, Dr. Corcoran advised Health Sciences Vice President Jane Henney (FDA Commissioner 1998-2000) as a member of her Health Sciences Leadership Council. He is Past President of the Society of Toxicology, the largest toxicology organization in the world with over 7,000 members from academia, industry, government, medicine, law and other fields practicing in the USA and over 50 foreign countries. He has contributed to Society positions having national and international impact, from the best science for evidence-based safety legislation, to organization ethics and governance. He serves as Associate Editor of Toxicology and Applied Pharmacology [2002-date], Editor of the Journal of Pharmaceutical Sciences and Pharmacology [2014-date] and Editor of the MO Online Journal of Toxicology [2014-date]. He has been an Editorial Board Member of the international journals Pharmacology and Toxicology, Basic and Clinical Pharmacology and Toxicology, Toxicology Letters, and the Journal of Toxicology and Environmental Health. During his service on the National Institutes of Health Alcohol-Toxicology 1 Study Section, he evaluated over 1,000 NIH grant applications.

3. Deborah A. Cory-Slechta, PhD

i. Expertise: Relationship between brain neurotransmitter systems and neurodevelopment associated with alteration by exposures to environmental toxicants.

ii: Education: PhD, Experimental Psychology, University of Minnesota; MA, Experimental Psychology, Western Michigan University; BS, Psychology, Western Michigan University.

iii. Professional Experience: Dr. Deborah Cory-Slechta is a Professor in the Department of Environmental Medicine, Pediatrics and Public Health Sciences at the University of Rochester School of Medicine and Dentistry. Dr. Deborah Cory-Slechta 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. 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 neurotransmitter systems and neurodevelopment, and how such relationships are altered by exposures to environmental toxicants, including the role played by environmental neurotoxicant exposures in developmental disabilities and neurodegenerative diseases. This work has included the effects of developmental exposures to metals, pesticides, and air pollutants as well as combined exposures to metals and stress in experimental animal models as well as in human cohort studies. These research efforts have resulted in over 155 papers and book chapters to date.

4. Victor G. De Gruttola, ScD

i. Expertise: Development of innovative study designs and analytical methods for evaluation of new therapies for HIV-related disease.

ii. Education: ScD, Biostatistics, Harvard School of Public Health; SM, Bioengineering, Harvard University; SM, Epidemiology, Harvard School of Public Health; BS, Physics, Brown University.

iii. Professional Experience: Dr. De Gruttola received his ScD in 1986 from the Biostatistics Department at HSPH—the department for which he served as Chair from 2009-2014. His research focuses on development of statistical methods required for appropriate public health response to the AIDS epidemic both within the US and internationally. The aspects of the epidemic on which he has worked include transmission of, and natural history of infection with, the Human Immunodeficiency Virus (HIV), as well as research on antiretroviral treatments, including the development and consequences of resistance to treatments. The broad goals of his research include developing treatment strategies that provide durable virologic suppression while preserving treatment options after failure, and evaluating the community-level impact of packages of prevention interventions, including antiviral treatment. He served as the Director of the Statistics and Data Analysis Center of the Adult Project of the AIDS Clinical Trials Group from 1996 to 2003--the period in which highly active antiretroviral treatment was developed, and he was instrumental in designing and analyzing studies of the best means of providing such therapy. He also served from 2011-2015, as co-PI (with PI Max Essex) on a community-randomized study of a combination HIV prevention strategy in Botswana.

5. David C. Dorman, DVM, PhD, DABVT, DABT, ATS

i. Expertise: Neurotoxicology, and risk assessment.

ii: Education: PhD, Veterinary Biosciences/Toxicology, University of Illinois; DVM Colorado State University; B.A. Chemistry, University of San Diego.

iii. Professional Experience: Dr. Dorman is a professor of toxicology in the Department of Molecular Biosciences in the College of Veterinary Medicine at North Carolina State University. Dr. Dorman received his undergraduate training in chemistry from the University of San Diego, his DVM from Colorado State University, and he completed a combined PhD and residency program in toxicology at the University of Illinois, Urbana-Champaign. He is a diplomat of the American Board of Veterinary Toxicology and the American Board of Toxicology. Dr. Dorman has chaired or served on numerous NRC committees. His recent NRC chairmanships include the Committee on Predictive-Toxicology Approaches for Military Assessments of Acute Exposures and the Committee on Design and Evaluation of Safer Chemical Substitutions - A Framework to Inform Government and Industry Decisions. He has been recently named as chair of the NRC's Committee on Toxicology and the Committee on Unraveling Low Dose Toxicity: Case Studies of Systematic Review of Evidence. He has served on other advisory boards for the US Navy, NASA, and USDA, and is currently a member of the National Toxicology Program's Board of Scientific Counselors. He is an elected fellow of both the Academy of Toxicological Sciences and the American Association for the Advancement of Sciences. The primary objective of his research is to provide a refined understanding of chemically induced neurotoxicity in laboratory animals that will lead to improved assessment of potential neurotoxicity in humans. Dr. Dorman's other research interests include clinical veterinary toxicology, nasal toxicology, pharmacokinetics, and cognition and olfaction in animals. He has over 145 peer-reviewed research publications including work with pesticides, metals, hydrogen sulfide, and a variety of industrial chemicals.

6. Valery E. Forbes, PhD

i. Expertise: Population ecology and modeling, fate and effects of toxic chemicals in sediments, and ecological risk assessment.

ii. Education: PhD, Coastal Oceanography, State University of New York; MSc Marine Environmental Science, State University of New York; BA Biology; BA Geology, State University of New York.

iii. Professional Experience: Dr. Valery E. Forbes is Dean of the College of Biological Sciences at University of Minnesota. Dr. Forbes was Director of the School of Biological Sciences at the University of Nebraska-Lincoln from 2011-2015. From 1989-2010, she lived and worked in Denmark, most recently as the Founding Chair of the Department of Environmental, Social and Spatial Change and Professor of Aquatic Ecology and Ecotoxicology at Roskilde University. Dr. Forbes received her Bachelor's Degree (Biology & Geology) from the State University of New York at Binghamton in 1983, a MSc (Marine Environmental Science) from SUNY-Stony Brook in 1984, and a PhD (Coastal Oceanography), also from SUNY- Stony Brook in 1988. Specific research topics include population ecology and modeling, fate and effects of toxic chemicals in sediments, and ecological risk assessment. Dr. Forbes has graduated approximately 50 MSc and PhD students over her career and established a Danish Graduate School in Environmental Stress Studies (GESS) based at Roskilde University. While based in Europe, Dr. Forbes served as work package leader on two major EU 7th Framework Projects: CREAM (a Marie Curie Initial Training

Network on Mechanistic Effect Models for Ecological Risk Assessment of Chemicals) and NanoReTox (a multi- institution research project on The Reactivity and Toxicity of Engineered Nanoparticles: Risks to the Environment and Human Health). More recently, she has received funding from the National Institute of Mathematical and Biological Synthesis (NIMBioS) for multi-partite initiatives to develop predictive models for the ecological risk assessment of chemicals. Dr. Forbes has published well over 100 internationally peer-reviewed articles and two books on these topics. She has served on the Danish Natural Sciences Research Council, the European Research Council and as ad hoc reviewer for numerous funding agencies from various countries. She is on the editorial board of several international journals and provides scientific advice to the private and public sectors.

7. John Grieco, PhD

- i. Expertise: Epidemiology, ecology, and transmission dynamics of vector-borne illness.
- ii. Education: PhD, Medical Zoology, Uniformed Services University; MS Medical Entomology, Texas A&M University; BS, Biology, University of Notre Dame.
- iii. Professional Experience: Dr. John Grieco is a Research Associate Professor of Medical Entomology and Associate Director of the Eck Institute of Global Health at the University of Notre Dame in Notre Dame, Indiana. Dr. Grieco's work is multidisciplinary with a focus on the biology, ecology and transmission dynamics of vector-borne illness. He has a long history of working on vector borne disease throughout the tropics and his research centers on malaria, Japanese Encephalitis, Dengue, Chagas, and rickettsial pathogens. Dr. Grieco has an extensive history in the design of novel repellents, irritants and toxicants for disease vectors. He has developed a number of field and laboratory assays for identifying and optimizing behavior modifying compounds for use in the control of mosquito, sandfly, and triatome vectors. Dr. Grieco serves as an external advisor to the Bill and Melinda Gates Foundation, the World Health Organization (WHO), the US Centers for Disease Control and the US Department of Defense in the area of Spatial Repellents and their advancement to recommendation. Dr. Grieco has co-authored the WHO guidelines for the evaluation of spatial repellents and he currently holds two patents for novel repellent compounds.

8. Byron Jones, PhD

- i. Expertise: Toxicogenetics, neurobehavioral, and developmental toxicology.
- ii. Education: BA, Psychology, Eastern Washington University; MA, Psychology, University of Arizona; PhD Physiological and Comparative Psychology, Psychopharmacology, University of Arizona.
- iii. Professional Experience: Dr. Byron Jones is professor of Genetics, Genomics, and Informatics at the University of Tennessee Health Sciences Center, Memphis. Dr. Jones received his PhD. training in the Departments of Psychology and Pharmacology and Toxicology at the University of Arizona. He received postdoctoral training in neuropharmacology at the University of Arizona and in pharmacogenetics at the University of Colorado. In 1991, he was a founding member of the Department of Biobehavioral Health at The Pennsylvania State University and

developed a program in pharmacogenetics and toxicogenetics at that institution. He has trained 10 PhD and 8 MS students and supervised numerous undergraduate honors theses at PSU. In 1998-1999, he was awarded a Poste Orange senior visiting research position at Institut François Magendie, Bordeaux, France to study the genetics of alcohol consumption. In 2000, he was awarded a Harry Dozor visiting professorship at the Ben Gurion University of the Negev, Beersheba, Israel. In 2001 and again in 2004, he was awarded invited professorships at the University of Strasbourg and University of Bordeaux in France. Together with his colleague, Dr. Pierre Mormède and others, he has helped to organize and deliver 15 1-2 week workshops on neural and behavioral genetics in France, the USA, Brazil, Russia, and Sweden. He and Dr. Mormède co-edited two volumes of a book on neuro and behavioral genetics. Dr. Jones has published more than 130 papers in peer-reviewed journals. In 2013, Dr. Jones was invited to help develop research infrastructure to study the effects of mercury and pesticide exposure on neurocognitive development in Ecuador. In 2014, he was awarded two grants from the National Institutes of Health. One is focused on the role of genetics in the impact of chronic stress on neuroendocrine adaptation and alcohol consumption and the other to study the effects of genetics on paraquat neurotoxicity. In that year, he was recruited to help found a new department in Genetics, Genomics, and Informatics in the College of Medicine at UTHSC. He has served on several NIH and NSF review panels. He is on the editorial board of *Frontiers in Genetics and Pharmacology, Biochemistry and Behavior* and is Editor-in-Chief, *Nutritional Neuroscience*. His current research interests include: 1) the toxicogenetics of paraquat and other pesticides; 2) the impact of chronic stress on neurobehavioral adaptation, including alcohol consumption; 3) the role of iron status on accumulation of heavy metals; and 4) iron status and the exposure in pregnant women and in early childhood development.

9. Paul D. Juarez, PhD

i. Expertise: Development of methodologies for creating and analyzing data on the effects of the natural, built, social, and policy environments on health disparities.

ii. Education: PhD, Public Policy and Social Research, Brandeis University, Waltham; MEd Psychology, Western Washington University; BA, Western Washington University.

iii. Professional Experience: Dr. Paul D. Juarez is Professor, Preventive Medicine and founding co-director of the Research Center on Health Disparities, Equity, and the Exposome at the University of Tennessee Health Science Center. He received his PhD in social policy from the Heller School, Brandeis University in 1983. Dr. Juarez currently is serving appointments on the Federal Advisory Committee on Minority Health for the US Department of Health and Human Services (2014-2018) and the Community-Level Health Promotion Study Section, Center for Scientific Review of the NIH (2013-2016). Dr. Juarez previously served as the Vice Chair, Division of Community Health, Family & Community Medicine, Meharry Medical College. While at Meharry, Dr. Juarez was PI for the Meharry Health Disparities Research Center of Excellence and directed its community engagement core. As PI, Dr. Juarez led Center activities in developing a systems approach to health disparities research. In 2011, Dr. Juarez received a grant from the EPA to increase our understanding of the environmental context of health disparities. In pursuit

of this effort, he led efforts to apply an exposome framework that considers the cumulative effects of environmental exposures on human health and development at critical life stages and from conception to death. He has been at the forefront nationally in developing a methodology for creating and analyzing data on the effects of the natural, built, social, and policy environments on health disparities. To achieve this, he has established a transdisciplinary team of investigators to conduct focused studies of the environmental effects on population level health disparities that apply mathematical, spatial-temporal, statistical and computational methods, models and analytics. His recent work has focused on analyzing the effects of the exposome on black white disparities in pre-term births and lung cancer mortality.

10. Rebecca D. Klaper, PhD

i. Expertise: Ecological toxicology, chemical environment fate and effects, examining technologies (including genomics and green chemistry designs) to minimize environmental impacts from chemical contamination.

ii. Education: BS, Honors Biology, University of Illinois; MS, Entomology, University of Georgia; PhD, Ecology, University of Georgia.

iii. Professional Experience: Dr. Rebecca D. Klaper is a Professor at the School of Freshwater Sciences, University of Wisconsin-Milwaukee and the Director of the Great Lakes Genomics Center. Dr. Klaper received her MS in Entomology in 1995 and her PhD in Ecology in 2000 from the Institute of Ecology University of Georgia examining the impacts of chemicals on the population dynamics of insects. Dr. Klaper currently studies the potential impact of emerging contaminants, such as nanoparticles, pharmaceuticals, personal care products and pesticides on aquatic life and how we may design these chemicals to be sustainable and have the least environmental impact. She published some of the first studies on the impacts of nanomaterials on aquatic organisms, describing differences in toxicity among nanomaterials, discussing the possible impacts of surfactants on nanomaterial toxicology. Dr. Klaper is now one of the lead PI's for the Center for Sustainable Nanotechnology, a distributed Center of eight universities to evaluate the mechanisms by which nanomaterials may cause toxicity and investigate the potential for principles to use in the design process of these chemicals. Dr. Klaper received a AAAS-Science and Technology Policy Fellowship where she worked in the National Center for Environmental Assessment at the US Environmental Protection Agency evaluating the potential use of genomic technologies in risk assessment. She currently serves on the Board of Scientific Counselors for the US Environmental Protection Agency's Chemical Safety for Sustainability/Human Health Risk Assessment Subcommittee. She has served as a technical expert to the Alliance for the Great Lakes and the International Joint Commission regarding the potential impacts of pharmaceuticals, personal care products and other emerging contaminants on the Great Lakes. She has also served as an invited scientific expert to both the US National Nanotechnology Initiative and the International Organization for Economic Cooperation and Development panel on nanotechnology where she has testified on the potential impact of nanoparticles on the environment and the utility of current testing strategies. She served on the

National Academy of Sciences Panel to Develop a Research Strategy for Environmental, Health, and Safety Aspects of Engineered Nanomaterials. She is also on the editorial board of the SETAC journal *Environmental Toxicology and Chemistry* as well as the ACS journal *Chemical Research in Toxicology*. Her current research focuses on 1) determining the presence of contaminants in freshwater systems; 2) the impacts of low level chronic exposures of these chemicals to fish and invertebrates in freshwater systems; 3) evaluating the ability of contaminant removal technologies to remove biological impacts of chemicals; 4) methods to quickly assess the potential impacts of a chemical, including genomic technologies; and 5) alternative options for minimizing the impacts of emerging contaminants including chemical redesign and Green Chemistry, altering use and distribution, and evaluating prescription levels for pharmaceuticals. Dr. Klaper's goal is to conduct basic and applied research to inform policy decisions involving freshwater resources.

11. Polly A. Newcomb, PhD

i. Expertise: Evaluating environmental exposures, such as metals, alcohol, tobacco, and medications, and lifestyle or physical factors, such as physical activity, body mass, genetics, and tumor characteristics.

ii. Education: PhD, University of Washington, Seattle, Epidemiology; MPH, Epidemiology, University of Washington; BS, Molecular Biology, The Evergreen State College.

iii. Professional Experience: Dr. Polly Newcomb is Head of the Cancer Prevention Program of the Public Health Sciences Division at the Fred Hutchinson Cancer Research Center (Fred Hutch), a Professor in the Department of Epidemiology at the University of Washington's School of Public Health, and a Senior Scientist at the University of Wisconsin Comprehensive Cancer Center. She received her doctorate in Epidemiology at the University of Washington in 1986 and completed her Post-doctoral Fellowship in the Department of Human Oncology at the University of Wisconsin in 1987. She has more than 25 years of extramurally funded research on cancer genetics, etiology, screening, and survival, demonstrating her broad expertise in the field. Her current research in relation to health and cancer includes environmental exposures such as metals, alcohol, tobacco, and medications; lifestyle factors, such as physical activity and body mass; as well as genetics and tumor characteristics. Her research has been funded by nearly a score of foundation and NIH-grants for these studies of colorectal neoplasia, breast and other cancers, and their precursors. She also participates in several international consortia. Dr. Newcomb has over 360 peer-reviewed publications, has served as a mentor for over 40 pre-doctoral, post-doctoral, and junior investigators and is on the Executive Committees of four University of Washington/Fred Hutch T32/R25 training programs. She is active in training new researchers through a National Cancer Institute "Established Investigator" award focused on colorectal cancer survival. She has served as a member of numerous NIH Study Sections, a consultant to national and international organizations, and is an Editor/Associate Editor for top tier journals such as *American Journal of Epidemiology and Cancer*, *Epidemiology*, and *Biomarkers & Prevention*. She has recently been awarded mentoring awards from the University

of Washington and the Fred Hutchinson Cancer Research Center, and is a Fulbright Scholar (2015). She is also the President of the American Society for Preventive Oncology.

12. Melissa Perry, ScD, MHS

i. Expertise: Epidemiologic research in public health.

ii. Education: BA, Psychology, University of Vermont; MHS, Public Health, The Johns Hopkins University School of Hygiene and Public Health; ScD, Public Health, The Johns Hopkins University School of Hygiene and Public Health.

iii. Professional Experience: Professor Melissa Perry is the elected President of the American College of Epidemiology. Dr. Melissa Perry received Master of Health Science and Doctor of Science degrees from the Johns Hopkins School of Hygiene and Public Health. She has spent more than two decades conducting epidemiologic research and educating over 50 graduate students in public health. Prior to coming to George Washington University in 2010, Dr. Perry spent 13 years on the Harvard School of Public Health's Department of Environmental Health faculty. She is currently Chair on the Board of Scientific Counselors for the National Center for Environmental Health/Agency for Toxic Substances and Disease Registry (NCEH/ATSDR) of the Centers for Disease Control and Prevention (CDC). She is also President of the American College of Epidemiology. She is an associate editor of the Journal Reproductive Toxicology, and she serves as a standing member of the National Institute for Occupational Safety and Health research grant study section. In 2014, Dr. Perry was elected to the prestigious international Collegium Ramazzini in recognition of her contributions to advancing occupational and environmental health and her professional integrity. From 2009-2011, she was a member of the CDC's Scientific Understanding Work Group, National Conversation on Public Health and Chemical Exposures, Centers for Disease Control and Prevention. From 2003-2007, she was a co-investigator with the Tropical Pesticides Research Institute of Arusha, Tanzania, and the University of Cape Town, South Africa. Her laboratory at the Milken Institute School of Public Health focuses on reproductive epidemiology and hormone disruptors, and her group has developed new techniques for high-volume identification of chromosomal abnormalities in sperm cells. Her research group was the first to use semi-automated imaging methods to show how pesticides are associated with sperm abnormalities. In addition to numerous book chapters and published abstracts, she has over 110 peer-reviewed publications in areas including DNA damage linked to pesticides and other chemical exposures, managing hazardous substances in the workplace, and occupational issues related to agricultural, meat-packing, and construction work. Current research on pesticides, biomarkers and hormonal effects in her laboratory focuses on identifying the mutagenic and hormonal effects of herbicide and insecticide exposure in vivo. Her interests focus on pre-disease exposure markers signaled by early mutational damage or hormone disruption, across the spectrum of pesticide exposure levels. She has been the principal investigator on research grants from the National Cancer Institute, the National Institute of Environmental Health Sciences, and the National Institute for Occupational Safety and Health.

13. Patricia V. Pietrantonio, PhD, MS

i. Expertise: Applied insect toxicology, insect endocrinology, and insect biochemistry and physiology.

ii. Education: PhD, Entomology, University of California; MS, Entomology, Insect Toxicology track, University of California; BS Agronomy, Plant Breeding Track, University of Buenos Aires.

iii. Professional Experience: Dr. Patricia Pietrantonio is a tenured Professor and AgriLife Research Fellow in the Department of Entomology at Texas A&M University in College Station, TX. She is an associate member of the interdisciplinary programs in Toxicology and a member of the Faculty of Neuroscience at the same university. She received her BS in Agronomy from the University of Buenos Aires in Argentina, after which she was a permanent technical staff member at INTA (National Institute of Agriculture and Cattle Technology) in Castelar, Buenos Aires (1982-1987). She obtained both her MS (1990) and PhD (1995) in Entomology from the University of California at Riverside (both under Prof. Sarjeet S. Gill), with emphasis in insect toxicology, biochemistry, and physiology. As a PhD student, she received the Henry Comstock Award from the Entomological Society of America (ESA) for outstanding graduate student achievement. Since 1996, she has advanced through the ranks at Texas A&M University, receiving the title of "AgriLife Research Fellow" for Outstanding Research Leadership and Grantsmanship in 2006. She has received funding from the NIH-NIAID (RO1), NIFA-AFRI, EPA Section 6 and the NSF-IOS, as well as from the Texas Department of Agriculture and USDA-Southern Region IPM program. She has served three times as a member on national proposal review panels for USDA-NIFA Insects and Nematodes (organismal and sub-organismal panels) and twice for NSF-IOS panels. She reviews research proposals for European Organizations such as the FWO (Belgium), the ANR (French Natl. Agency), BBSRC from the UK, the DFG (German Research Foundation), and national universities. She has served 19 years at Texas A&M University conducting entomological research ranging from applied insect toxicology to basic aspects insect endocrinology and insect biochemistry and physiology (G protein-coupled receptors: GPCRs) focusing on target validation. In applied toxicology her laboratory elucidated mechanisms of insecticide resistance to pyrethroids, neonicotinoids, and organophosphates in various pests such as mosquitoes, cotton bollworm (*H. zea*), boll weevil, and whiteflies. Some of this work was in collaboration with Extension Entomologists. She has conducted international research on insecticide resistance in Cyprus funded by the Cyprus Research Promotion Foundation. She has served as major professor of 7 PhD students and 4 masters students in her laboratory and served as committee member for 11 graduate students (all completed). She has served as co-major professor or committee member for students enrolled in Universities in Mexico and Europe (UK Leuven, Belgium). Scholarly accomplishments include 49 published peer-reviewed journal articles, 7 book chapters, and 18 papers in conference proceedings, as well as published abstracts of 75 invited presentations (21 international) and 116 volunteered presentations. She teaches yearly Graduate Courses in Insect Toxicology (ENTO619) and Insect Physiology (ENTO615). She has served as Subject Editor for "Environmental Entomology," for

which she received an Outstanding Service Award from the ESA. She is currently an associate editorial member in the Archives of Insect Biochemistry and Physiology and member of the Editorial board of Open Access Insect Physiology (Ed. Guy Smagghe). Other honors include the Paul A. Dahm Memorial Lecture in Insect Toxicology (Iowa State University) and the 2013 College of Agriculture and Life Sciences Dean's Outstanding Achievement Award for Faculty Mentoring. She was appointed to the University (TAMU) ADVANCE-NSF funded project as mentor for minority women. Current research funded by the NSF-IOS focuses on insect neurobiology and neuroendocrinology, and research funded by Cotton Incorporated focuses on Bt toxin and other receptors in the cotton bollworm, *H. zea*. Other projects focus on target validation in ticks. Dr. Pietrantonio is also a member of the tick genome *Ix. scapularis* expert group.

14. Kenneth Ramos, MD, PhD, PharmB

i. Expertise: Genomics and computational biology, molecular medicine, environmental health, and toxicology.

ii. Education: BS, Pharmaceutical Sciences and Chemistry, University of Puerto Rico, PhD, Biochemical Pharmacology, The University of Texas; MD, University of Louisville Health Sciences Center.

iii. Professional Experience: Kenneth Ramos, MD, PhD, PharmB, works across numerous organizational units at the University of Arizona (UA) to develop precision-health strategies and approaches to health outcomes and health-care delivery. He provides senior leadership in the development of personal diagnostics and therapeutics for complex diseases, including cancer, cardiopulmonary disorders, and diabetes. Dr. Ramos also is a professor of medicine at the UA College of Medicine–Tucson in the Department of Medicine, Division of Pulmonary, Sleep, and Critical Care Medicine, where he directs a highly competitive and innovative research program in translational and clinical genetics and genomics. Dr. Ramos' research integrates approaches ranging from molecular genetics to population-based studies to understand the genomic basis of human disease. He is regarded as a leading expert in the study of gene-environment interactions and directs a competitive research program in translational and clinical genomics with a focus on genetic and epigenetic determinants of toxicity and disease, computational biology and molecular signaling. Dr. Ramos has mentored over 100 doctoral, medical, veterinary medicine, undergraduate and high school students, many of whom have gone on to successful careers in academia, medicine, government and industry. He is committed to initiatives that attract and retain minorities in science and medicine. Dr. Ramos served as SOT President from 2008-2009, and is a current member of the Continuing Medical Education Task Force, Hispanic Organization of Toxicologists Specialty Interest Group, and the Molecular and Systems Biology Specialty Section. He has been a member of SOT since 1982.

15. Gary S. Sayler, PhD

i. Expertise: Microbial biodegradation, molecular microbiology, bioluminescence sensing and ecotoxicology.

ii. Education: PhD, Bacteriology and Biochemistry, University of Idaho; BS, Bacteriology, North Dakota State University; AA, Liberal Arts, Bismarck Junior College.

iii. Professional Experience: Dr. Saylor is Distinguished University Professor, and Alvin and Sally Beaman Endowed Professor of Microbiology and Ecology and Evolutionary Biology at The University of Tennessee. Dr. Saylor received his PhD in Bacteriology and Biochemistry, University of Idaho, 1974; BS, Bacteriology, North Dakota State University, 1971; AA, Bismarck Junior College, Liberal Arts, 1969. He was Postdoctoral researcher in Marine Microbiology at the University of Maryland (1974-1975). He is the founding Director, Center for Environmental Biotechnology at the University of Tennessee (1986-present) and was the first Director of the UT-ORNL Joint Institute for Biological Sciences (2006-2014). As Director for the Waste Management Research and Education Institute Tennessee Center of Excellence (1991-2005) he conducted a consolidation and reorganization to create the Institute for a Secure and Sustainable Environment serving as interim director (2005-2006). Specializing in microbial biodegradation, molecular microbiology, bioluminescence sensing and ecotoxicology, he has directed the research of over 100 PhD and MS students and postdocs during his 40 year career, with approximately 400 peer reviewed publications, 16 patents, and over 500 lectures and seminars worldwide. He serves on the Sciences Advisory Board for the US Defense Department, Strategic Environmental Research Defense Program (2011-present); and was a member of the US Department of Energy, Biological and Environmental Research Advisory Committee (2008-2013). He was an Executive member and Chair of the Board of Scientific Counselors for the EPA Office of Research and Development (2002-2010) and served on the EPA's Science Advisory Board drinking water committee (2002-2009), the Water Environment Research Foundation Research Council (1995-2001) and was Peer Review Chair for the EPA Exploratory Biology Program (1990-1993). He has served on National Academy/NRC Committees evaluating the US EPA Laboratory Enterprise (2013-14), DOE NRSB-Environmental Management Roadmap (2007-2008) Stand-Off Explosives Detection (2003) and DOE Site Decontamination and Decommissioning (2002). He is Co-founder China-US Joint Research Center For Ecosystem and Environmental Change, Beijing, (2006-present) and US State Department Eco partnership (2010-present) and has held honorary Professorships at China Agricultural University, Beijing (2012), Northeast Normal University, Changchun (2012), East China University of Science and Technology, Shanghai (2008-2011), Institute for Water Research Distinguished Researcher, Xi'an (2008); and Adjunct Professorship, Gwanju Institute of Science and Technology, Korea (2005-2010). Dr. Saylor is an Associate Editor of Environmental Science and Technology and is an active member in ACS, AAAS, ASM and SETAC. Elected to AAAS Fellowship in 2012. He received the DOW Foundation Support for Public Health Environmental Research and Education (SPHERE) Award (1998-2000); and was elected to the Fellow American Academy for Microbiology (1995-present). He received the Distinguished Alumni Award, University of Idaho and the UT Senior Researcher Award from the College of Arts and Sciences (1995) and received the Procter and

Gamble Prize, American Society for Microbiology (1994). He was designated Chancellor's Research Scholar, UTK (1988), and received the NIH Research Career Development Award (NIEHS), (1980-1985).

16. Joseph Shaw, PhD

i. Expertise: Discovery of molecular toxicological and disease pathways resulting from complex environmental exposures including techniques in new high-throughput molecular techniques and evolutionary theory, statistical analysis, and bioinformatics.

ii. Education: PhD University of Kentucky; BS, Virginia Polytechnic Institute and State University.

iii. Professional Experience: Dr. Joseph R. Shaw is an Associate Professor in the School of Public and Environmental Affairs at Indiana University and holds adjunct appointments in their School of Public Health and Center for Genomics and Bioinformatics. He also holds a partial appointment as a Senior Lecturer of Environmental Genomics in the School of Biosciences at the University of Birmingham, UK. Dr. Shaw earned his doctoral degree in environmental toxicology from the Graduate Center for Toxicology at the University of Kentucky in 2001. He then moved to Dartmouth College where he received an NIEHS post-doctoral fellowship to apply emerging Omics technologies to characterize mechanisms of toxicant actions. He joined the faculty of the School of Public and Environmental Affairs at Indiana University, Bloomington in 2007. Dr. Shaw was named an Outstanding New Environmental Scientist (ONES) by the NIEHS in 2010, and recognized as an exceptional talent in the environmental sciences by the Royal Society, UK in 2013 for his work investigating toxicant exposure, genome structure, and toxic effects on individuals and populations. Contributing to these efforts he is a founding member of the Daphnia and Fundulus Genomics Consortia where he helps lead over 600 scientists around the world working to develop new models for environmental genomics. He also helped establish the Consortium for Environmental Omics and Toxicology that seeks to apply twenty-first century technologies to predictive toxicology. Dr. Shaw has trained over 150 students in environmental genomics through the Mount Desert Island Bio Lab Workshop in environmental genomics that he co-developed in 2011. The workshop is now held annually in the US and UK. Dr. Shaw's research program has received over \$6.4M in research funding from NIH, NSF, and DOD since 2002, producing over 38 publications in the area of environmental genomics and toxicology. He has served on the editorial board and in 2013, was promoted to editor for the journal "Environmental Toxicology and Chemistry." His research group seeks to discover critical, specific, and causative molecular toxicological and disease pathways resulting from complex environmental exposures. His work embraces new high-throughput molecular techniques and couples these with evolutionary theory, statistical analysis, and bioinformatics to integrate toxic-response across levels of biological organization. Current research in his laboratory focuses on (i) associating variation in genome structure with disease and toxicant response within and between populations; (ii) identifying the mechanisms of actions of chemical stress, especially

metals, and (iii) elucidating the genetic and epigenetic underpinnings of mutations and establishing their role in evolved tolerance.

17. Sonya K. Sobrian, PhD

i. Expertise: Behavioral, immunological and neurotoxicological consequences of prenatal and neonatal drug administration and drug and environmental stress.

ii. Education: PhD Physiological Psychology, from Carleton University; BA and MA (Experimental) in Psychology from St. John's University; MA equivalent in Pharmacology from Ottawa University.

iii. Professional Experience: Dr. Sonya K. Sobrian is an Associate Professor of Pharmacology at the Howard University College of Medicine, Director of the Developmental Neurobehavioral Pharmacology Laboratory, and Immediate Past Chair of the University's IACUC. Dr. Sobrian received her doctorate in Physiological Psychology from Carleton University, Ottawa Canada, and served a postdoctoral fellowship at Princeton University in Developmental Neurobiology; she also added pharmacology and immunology to her graduate (MA, Neuropharmacology: Ottawa University) and post graduate (Fulbright Fellow: Immunology Research Center, Belgrade, Yugoslavia) training. During her tenure at the College of Medicine, Dr. Sobrian successfully mentored medical, graduate, and undergraduate students. She has served as President of the Neurobehavioral Teratology Society, is currently on the Editorial Advisory Board of the journal, "Neurotoxicology and Teratology", and is Guest Editor of a special issue of the journal on "Developmental Cannabinoid Exposure: New Perspectives on Mechanisms, Outcomes, and Implications for Public Health." Dr. Sobrian is currently on the Board of Scientific Counselors for the Department of Health & Human Services National Toxicology Program. She also served as a member of the Scientific Advisory Panel for the US EPA Office of Chemical Safety and Pollution Prevention, and previously served on the EPA Toxic Substance Control Act Advisory Committee. As a visiting scientist at the National Center for Toxicological Research, Dr. Sobrian was instrumental in establishing a prenatal model of cocaine toxicity. She served on the ILSI Risk Science Institute's Expert Panel on the evaluation and interpretation of neurodevelopmental endpoints for human risk. Dr. Sobrian served as Director of the Behavioral Neuroscience Program at the National Science Foundation, where she directed and managed funding of research on the neural mechanisms underlying behavior and learning. In addition, she has served as Chair of the Board of Trustees of AAALAC International, as well as Chair of the Board of Directors of the National Capital Area Chapter of the Fulbright Association. During her tenure as an AAAS Congressional Science and Technology Fellow, her scientific expertise was utilized to inform public policy on Fetal Alcohol Syndrome, aging, and NIH research funding. The major focus of Dr. Sobrian's research involves the behavioral, immunological, and neurotoxicological consequences of prenatal and neonatal drug administration and drug and environmental stress-induced alterations in behavioral and immunological development. She has a longstanding interest in sex differences, and her lab was the first to show that prenatal environmental and psychological stress differentially altered

immune parameters in rat male and female offspring, research that she continued as a Fulbright Scholar at the Immunological Research Institute in Belgrade, Yugoslavia. Her current research involves the life-span consequences of prenatal exposure to cocaine and nicotine, alone and in combination, with an emphasis on drug addiction in the aging organism. In developing animal models for neuropsychiatric diseases, Dr. Sobrian is currently exploring the role of prenatal environmental noise stress [PENS] in the etiology of autism and depression. For her work in establishing an environmentally-mediated neurodevelopmental animal model of depression, Dr. Sobrian was designated a L. Vernon Maddox NARSAD investigator.

18. Kristina Thayer, PhD

i. Expertise: Understanding the role of environmental exposures in diabetes and obesity, evaluating the predictive utility of high throughput screening data, and methods of exposure assessment.

ii. Education: BS, Psychology, Pennsylvania State University; PhD, Biological Sciences, University of Missouri.

iii. Professional Experience: Kristina Thayer, PhD is Deputy Director of Analysis at the National Toxicology Program (NTP) and Director of the NTP Office of Health Assessment and Translation (OHAT) at the National Institute for Environmental Health Sciences (NIEHS) located on the campus of the National Institute for Environmental Health Sciences (NIEHS). OHAT conducts evaluations to assess the evidence that environmental chemicals, physical substances, or mixtures (collectively referred to as "substances") may cause adverse health effects and provides opinions on whether these substances may be of concern given what is known about current human exposure levels. As Deputy Director of Analysis, she oversees OHAT and the NTP Office of the Report on Carcinogens. Before becoming director of OHAT, she held positions in the NTP Office of Liaison, Policy, and Review, the NIEHS Office of Risk Assessment Research and the NTP Center for the Evaluation of Risks to Human Reproduction (CERHR). Prior to joining the NTP/NIEHS, she was a senior scientist at the World Wildlife Fund and then at the Environmental Working Group. In addition to overseeing the development of OHAT and ORoC monographs, she has research interests in the areas of understanding the role of environmental exposures in diabetes and obesity, evaluating the predictive utility of high throughput screening data, and methods of exposure assessment. She is considered an expert on the application of systematic review methods to environmental health topics.

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David Dix,

Director, Office of Science Coordination and Policy.

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