**FQPA Science Review Board (FIFRA SAP Ad hoc) Members Biosketches**
**for the April 19-21, 2016**
**Meeting of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)**
**Scientific Advisory Panel (SAP) on Chlorpyrifos: Analysis of Biomonitoring Data**
**Docket Number: EPA-HQ-OPP-2016-0062**

**Russell Carr, Ph.D.**

Dr. Russell Carr is an Associate Professor in the College of Veterinary Medicine at Mississippi State University. He received his B.S. in Biology and Chemistry from Delta State University and his M.S. in Zoology and Ph.D. in Animal Physiology from Mississippi State University. Dr. Carr has served on multiple US EPA Science Advisory Panels and as a reviewer for Developmental Neurotoxicology Methods for the National Toxicology Program. His research interests are in the area of developmental neurotoxicology with emphasis on agricultural pesticides. Using animal models, his current focus is investigating the effects of developmental insecticide exposure on long term effects on behavior and matching those effects with changes in gene expression and neurochemistry.

**Jeff Fisher, Ph.D.**

Dr. Jeffrey Fisher is a research toxicologist with the U.S. Food and Drug Administration, National Center for Toxicological Research. He was formerly a Professor in the Department of Environmental Health Science, College of Public Health at the University of Georgia (UGA). He joined the University of Georgia in 2000 and served as Department Head of the Department of Environmental Health Sciences from 2000 to 2006 and Director of the Interdisciplinary Toxicology Program at UGA from 2006-2010. He spent 25 years at the Toxicology Laboratory, Wright Patterson AFB, where he was Principal Investigator and Senior Scientist in the Toxics Hazards Division and Technical Advisor for the Operational Toxicology Branch. Dr. Fisher's research interests are in the development and application of pharmacokinetic and biologically based mathematical models to ascertain health risks from environmental, food-borne and occupational chemical exposures. Recently with FDA he has become involved in the use of PBPK models for drugs to determine first in dose for infants, evaluate extended release failures of generic drugs, and the development of methods to extrapolation from in vitro dissolution studies to in vivo pharmacokinetics. Dr. Fisher’s chemical toxicology modeling experience includes working with chlorinated and non-chlorinated solvents, fuels, pesticides, perchlorate and bisphenol A. He has developed PBPK models for use in cancer risk assessment, estimating lactational transfer of solvents, understanding in utero and neonatal dosimetry, quantifying metabolism of solvent mixtures and developing biologically motivated models for the hypothalamic-pituitary-thyroid axis in rodents and humans. Dr. Fisher has 25 years of experience in physiological modeling and has trained several graduate students and postdoctoral fellows on the concepts and application of physiological models. He was a Visiting Scientist at the Chemical Industry Institute of Toxicology in 1996 and at the NIOSH Taft Laboratory in 1999. During this time, he also served as Adjunct Professor in the Department of Pharmacology and Toxicology at Wright State University. Dr. Fisher has published over 160 papers on pharmacokinetics and PBPK modeling in laboratory animals and humans. He has served on several national panels and advisory boards for the DoD, ATSDR, USEPA and non-profit organizations. He was a U.S. delegate for the North Atlantic Treaty Organization. Dr. Fisher

served on the International Life Sciences Institute Steering Committee, which evaluated chloroform and dichloroacetic acid using EPA-proposed Carcinogen Risk Guidelines. He is Past President of the Biological Modeling Specialty Section of the Society of Toxicology, reviewer for several toxicology journals, and was Co-Principal Investigator on a National Institutes of Health (NIH)-supported workshop on Mathematical Modeling at the University of Georgia in the fall of 2003. He was a member of the National Academy of Sciences subcommittee on Acute Exposure Guideline Levels (AEGLs) from 2004-2010 and Science Advisory Board for the US EPA (2007-2010). He is an ad hoc member of the SABs for dioxin and perchlorate. He is a fellow of the Academy of Toxicological Sciences and an associate editor for Toxicological Sciences. Dr. Fisher has a B.S. degree in biology from the University of Nebraska at Kearney, a M.S. degree in biology from Wright State University, and a Ph.D. in Zoology/Toxicology from Miami University.

**William Funk, Ph.D.**

Dr. William Funk is an assistant professor in the Department of Preventive Medicine at Northwestern University. In addition to his primary appointment he also serves as faculty in the Driskill Graduate Program in Life Sciences, and is an associate member of the Robert H. Lurie Comprehensive Cancer Center and a faculty associate in the Institute for Policy Research at Northwestern. He received his Ph.D. from the Department of Environmental Sciences and Engineering at the University of North Carolina at Chapel Hill in 2009, and has more than 13 years of experience developing and applying biomarker methods for investigating links between the environment and human health. The Funk Laboratory, located in the Robert H. Lurie Comprehensive Cancer Center in the Feinberg School of Medicine, is a recently renovated mass spectrometry-based laboratory focused on the application of novel methods for estimating exposures to environmental toxicants using both targeted and untargeted (i.e. omics) biomarker approaches. A primary focus of Dr. Funk's work is the application of protein adducts as exposures biomarkers, with an emphasis on prenatal and pediatric populations. Dr. Funk has also helped to pioneer the application of dried blood spot (DBS) sampling as a minimally-invasive and cost effective alternative to venous blood collection in epidemiological research. In addition to his research, Dr. Funk has served as a technical reviewer for the US Environmental Protection Agency and the CDC's National Birth Defects and Prevention Center, and as an ad hoc reviewer for the US Department of Justice and the NIH-NIEHS Children's Environmental Health & Disease Prevention Research Center Special Review Panel. Dr. Funk was also a member of the National Children's Study Health Measurement Network ad hoc Biospecimens Working Group, and currently serves as a member on the Coronary Artery Risk Development in Young Adults Study (CARDIA) Laboratory Subcommittee. Dr. Funk is the director of the Environmental Health Science course for the Program in Public Health (PPH) at Northwestern, and serves on the PPH's Executive Committee. Current research in the Funk Laboratory includes 1) assessing exposures to toxic metals using DBS sampling methods, 2) quantification of cotinine in DBS samples as a biomarker of exposure to environmental tobacco smoke, 3) and the application of protein adduct profiles as biomarkers associated with preterm birth, birth defects (e.g., congenital heart defects, oral clefts, and hypospadias), multiple myeloma, and ovarian cancer.

**Panos Georgopoulos, Ph.D.**

Dr. Georgopoulos is a Professor of Environmental and Occupational Health at Rutgers Biomedical and Health Sciences. Since 1989 he has served on the faculty of Robert Wood Johnson Medical School and on the Graduate Faculties of Chemical & Biochemical Engineering, Biomedical Engineering, and of Environmental Sciences at Rutgers University. He is a member of the Environmental and Occupational Health Sciences Institute (EOHSI) of Rutgers where he directs the State-funded Ozone Research Center and the Informatics and Computational Toxicology Core for the NIEHS Center for Environmental Exposures and Disease (CEED). Dr. Georgopoulos received his M.S. and Ph.D. Degrees in Chemical Engineering from the California Institute of Technology (Caltech) and his Dipl. Ing. Degree from the National Technical University of Athens. At EOHSI he established and directs the Computational Chemodynamics Laboratory (CCL), a state-of-the-art facility for informatics and modeling of complex environmental and biological systems. He is also Co-Director of the Environmental Bioinformatics and Computational Toxicology Center (ebCTC), a research consortium of Rutgers University, Princeton University, and USFDA's Center for Toxicoinformatics. He served as Director of the USDOE-funded Center of Expertise in Exposure Assessment of the Consortium for Risk Evaluation with Stakeholder Participation (CRESP). Dr. Georgopoulos has participated in both research and teaching in Rutgers graduate programs and has developed innovative course materials in modeling and informatics related to environmental health applications. He has been the primary doctoral thesis advisor to 22 students, with 14 Ph.D. degrees awarded since 1997, and has been mentor to 26 post-doctoral fellows. His research interests involve the development and application of mathematical and computational methods for diagnostic and mechanistic studies of multipathway physicochemical processes taking place in interacting environmental and biological systems. The aim of this research is to improve the understanding and quantification of human exposure and biological mechanism-based dosimetry and risk for environmental toxics; this is being accomplished through the ongoing development of mechanistic multiscale modular computational framework for source-to-dose-to-effect modeling of toxicant dynamics. Outcomes of this research include integrative computational models of toxicokinetic and toxicodynamic processes at the cellular, tissue and whole body levels. Dr. Georgopoulos has lectured as an invited speaker at universities, including the Harvard School of Public Health, Johns Hopkins University, Stanford University, Illinois Institute of Technology, University of Minnesota, and others. He has published more than 125 peer-reviewed articles and chapters in scientific journals, books and proceedings, and has authored or co-authored several State and Federal Government Documents and numerous technical reports. He served on editorial boards of scientific journals and currently serves as member of various national and international scientific and technical committees on environmental issues, including the USEPA Chemical Safety Advisory Committee.

**William L. Hayton, Ph.D.**

Dr. William L. Hayton is an Emeritus Professor of Pharmacy at The Ohio State University, since retirement in 2010. At retirement he was Chair of the Division of Pharmaceutics and he served as the Associate Dean for Graduate Studies and Research. His formal training included the BS in Pharmacy degree (1967, University of Washington, Seattle), and the Ph.D. degree in Pharmaceutics (1971, State University of New York at Buffalo). Dr. Hayton's expertise is pharmacokinetics, particularly construction and validation of mathematical models that describe or explain the kinetics of complex biological systems. Dr. Hayton taught Clinical Pharmacokinetics to Pharm.D. students and pharmacokinetic/pharmacodynamic (PK/PD) modeling to Ph.D. students. Recent research projects were "characterization of the Fc receptor-mediated transport and catabolism of albumin and IgG in wild type and FcR knockout mice", and the "quantitative PK/PD modeling of the female hypothalamus-pituitary-gonad (HPG) axis in the female rainbow trout (*Oncorhynchus mykiss*)". The HPG model is based on and integrates the biology of gonadotropin, estrogen, androgen and maturational hormone signaling systems, and it includes key intermediate steps in the signaling pathways; *viz*., gonadotropin and sex steroid synthesis, hormone receptors and their corresponding mRNA levels. Dr. Hayton's expertise extends to interspecies scaling of pharmacokinetic model parameter values and xenobiotic metabolism. Dr. Hayton was a member of the Washington State University College of Pharmacy faculty for 19 years before coming to Ohio State in 1990 as Chair of the Division of Pharmaceutics. He is author or co-author of more than 100 peer-reviewed scientific publications, many of which report on the PK/PD of xenobiotics. He has served as an ad hoc member of several FIFRA SAP panels during 2005 - 2014. He has been Principal Investigator for peer-reviewed grants from the NIH, NSF, EPA, AFOSR, FDA, and USFWS.

**Stella Koutros, Ph.D.**

Dr. Koutros received her M.P.H. and Ph.D. in epidemiology from Yale University. She completed her doctoral work through the Yale-NCI partnership training program in cancer epidemiology, conducting research in the Occupational and Environmental Epidemiology Branch (OEEB). In 2008, upon completion of her doctorate she became a fellow in OEEB; she was appointed to the position of tenure-track investigator in 2015. Dr. Koutros's research involves the design and conduct of epidemiologic investigations to evaluate occupational exposures as potential risk factors for cancer. She employs state-of-the-art exposure assessment methods and molecular studies within highly exposed populations to identify and clarify the biological mechanisms underlying chemical-induced carcinogenesis. She has a particular interest in the interaction between these exposures and inherited genetic variation, also known as gene-environment interaction, as well as the interplay between somatic variation and alterations at the tumor level and chemical exposures. Dr. Koutros and her collaborators are leading investigations in a large cohort of pesticides applicators, the Agricultural Health Study (AHS), to evaluate whether pesticide exposure influences cancer risk. In particular, work in the AHS has shown an increased risk of aggressive prostate cancer with exposure to specific organophosphate insecticides. Dr. Koutros also employs comprehensive information on genetic susceptibility for prostate cancer to study the interaction between agricultural pesticide use and cancer risk. Dr. Koutros is also currently leading efforts within large case-control studies of bladder cancer to identify important occupational exposures that might influence risk, in particular with exposure to diesel exhaust. Dr. Koutros and her collaborators are also examining potential gene-environment interactions as well as incorporating important somatic variation and bladder tumor

marker data to integrate exposure, germline genetic variation, and somatic changes to gain insights into the mechanisms of bladder carcinogenesis. Also as co-principal investigator of the largest study of acrylonitrile workers in the world, Dr. Koutros is helping to elucidate associations with cancer mortality to provide the most powerful epidemiologic evidence regarding human carcinogenicity to date.

**Isaac Pessah, Ph.D.**

Dr. Isaac Pessah obtained his B.S. in Biological Sciences in 1977 from Cornell University and his Ph.D. in Toxicology from the University of Maryland College Park in 1984. He was a Postdoctoral Fellow at UC Berkeley from 1984 to 1987 during which time he discovered a family of calcium channels termed ryanodine receptors. Since then, his research and academic interests have spanned the broad area of molecular and cellular mechanisms by which $Ca^{2+}$ channels regulate cellular signaling in muscle, neurons, and immune cells. He studies the organization and function the macromolecular complexes regulating ryanodine-sensitive $Ca^{2+}$ channels and how natural toxin derived from marine sponges and scorpions, as well as anthropogenic chemicals of concern to human environmental health (e.g. insecticides, rodenticides, and halogenated POPs) promote developmental neurotoxicity. Members of his laboratory have been studying gene-environment interactions influencing susceptibility that are relevant to autism and related neurodevelopmental disorders using humanized mice possessing mutations known to contribute susceptibility to disease. He received the Pfizer Award for Research Excellence in 1997 and the Neurobehavioral Toxicology Society's Distinguished Lecture Award in 2010. Dr. Pessah is a member of the UC Davis Superfund Research Program, Society of Toxicology and Neurotoxicology Specialty Section, the American Chemical Society and Pesticide Toxicology Specialty Section, the American Society for Pharmacology and Experimental Therapeutics, the Biophysical Society, and International Neurotoxicology Association. He is on the editorial board of several journals. Currently he is Professor of Toxicology and in the Department of Molecular Biosciences, and Associate Dean of Research and Graduate Education at UC Davis School of Veterinary Medicine. He is Deputy Director of the UC Davis Center for Children's Environmental Health and Disease Prevention. The Center, established under his direction in 2000, is a multidisciplinary program aimed at understanding how environmental factors influence developmental neurotoxicity. He has served as major advisor to over 35 PhD students and postdoctoral fellows and serves on the Executive Committee of two NIH predoctoral training programs. He was appointed by Governor Brown to serve on the California Developmental and Reproductive Toxicant Identification (DART) Committee. Recently Administrator Gina McCarthy appointed him to the US EPA Chemical Assessment Advisory Committee.

**William Popendorf, Ph.D.**
Dr. William Popendorf is an emeritus Professor of Industrial Hygiene at Utah State University. He served on the Board of the American Industrial Hygiene Association and as a Director of the American Board of Industrial Hygiene. Dr. Popendorf taught and conducted research for thirty-five years, and published over seventy papers and book chapters (culminating in a text book, see below). The topics of his research have progressed from pesticide hazards to farm workers in 1972-1992 to inorganic dusts in agricultural and natural mineral fibers from 1978-1982, organic dusts from grains and livestock in 1982-1995, various respiratory hazards in automotive industry foundries and metal working fluids in 1987-1994, and broader reviews since 1991 including his textbook *Industrial Hygiene Control of Airborne Chemical Hazards* in 2006. His broad interest has been to develop or/and apply predictive models (many developed in other fields) that describe how physical mechanisms cause (and can be used to control) the exposures of workers to organic vapors, hazardous particulate aerosols, and dermally toxic chemicals, with the expectation that such tools will improve the overall practice and knowledge-base of industrial hygiene.

**Diane Rohlman, Ph.D.**
Dr. Diane Rohlman is an Associate Professor in Occupational and Environmental Health at the University of Iowa. Throughout her career she has engaged in both basic and applied research to identify, characterize, and prevent occupational and environmental illness and injury in high-risk populations. A large part of this research has been with populations living in agricultural communities including, immigrant and migrant farmworkers and their families in the US, adolescent and adult cotton workers in Egypt, school-age children in Thailand, and a birth cohort in the Philippines. Other aspects of her research have focused on the development of health and safety interventions, including the development of interventions for agricultural workers and young workers. Additionally, she has engaged in a wide range of activities to translate and disseminate the products of scientific studies to key stakeholders at local, national and international levels. As Director of the graduate training program in agricultural safety and health in the Heartland Education and Research Center and Co-PI of the Building Capacity project in the Great Plains Center for Agricultural Health, she directs graduate and continuing education programs for future and current occupational safety and health specialists. She also led projects in four other NIOSH funded centers. She is the Director of the Healthier Workforce Center, a NIOSH Total Worker Health® Center of Excellence, and Co-PI of the Education and Translational Project in the Center, translating scientific findings into resources for small businesses. In addition, she leads a project in the Oregon Healthy Workforce Center, another NIOSH Total Worker Health® Center, to develop and evaluate an online Total Worker Health training for young workers. Furthermore, she is a Co-PI of projects in the National Children's Center for Rural and Agricultural Health and the Pacific Northwest Agricultural Safety and Health Center addressing Total Worker Health® topics in agricultural workers. As a member of the leadership teams in all of these centers, she is uniquely positioned to serve as Co-PI of the Outreach Core in the Great Plains Center.

**Sharon K. Sagiv, Ph.D., M.P.H.**
Dr. Sharon Sagiv is an environmental epidemiologist with research interests focused primarily on the impact of early life exposure to environmental toxicants on child development. She received her MPH in Epidemiology from Boston University and her doctorate in Epidemiology from the University of North Carolina at Chapel Hill. She is currently an Assistant Adjunct Professor of Epidemiology at the University of California, Berkeley and an investigator in UC Berkeley's Center for Environmental Research & Children's Health (CERCH). Dr. Sagiv's research centers around how exposure to environmental toxicants affects fetal and early child development with a focus on birth outcomes, childhood obesity and neurodevelopment. Much of her work to date is on prenatal exposure to metals and persistent organic pollutants and their associations with adverse behavioral development in children, particularly behaviors related to attention deficit hyperactivity disorder (ADHD) and she is particularly interested in how environmental toxicants impact quantitative, dimensional traits related to ADHD and autism spectrum disorders. Dr. Sagiv has served as the Principal Investigator on a number of NIH-funded grants, has served as a mentor for master's and doctorate students and postdoctoral fellows, and has taught classes in epidemiologic methods, environmental epidemiology and grant writing.

**Lisa M. Sweeney, Ph.D., DABT, CHMM**
Dr. Lisa M. Sweeney is a Senior Scientist with the Henry M. Jackson Foundation for the Advancement of Military Medicine, currently on detail to the Naval Medical Research Unit—Dayton under an Intergovernmental Personnel Act (IPA) assignment. She has a broad range of experience in the application of toxicology, chemistry, and engineering to problems in the health and environmental sciences. She has over 20 years of experience in risk assessment, pharmacokinetics, and biochemical engineering from a variety of private sector and non-profit backgrounds. She is an author of over 50 peer-reviewed publications, with over 20 publications as first author. Her experience has focused on the development and refinement of physiologically-based pharmacokinetic (PBPK) models and their application to risk assessment and experimental design. Other risk assessment experience includes preparing toxicological reviews and calculating human health risk for children and adults. She currently serves on the Society of Toxicology's Scientific Program Committee as a member and subject matter expert on topics pertaining to risk assessment, biological modeling, biomonitoring, regulation, and policy. She has previously served on U.S. EPA public peer review panels for the Integrated Risk Information System (IRIS) program, evaluated Provisional Peer Reviewed Toxicity Values (PPRTVs), and served as an external reviewer for the Agency for Toxic Substances and Disease Registry.

**Alvin Terry Jr., Ph.D.**

Dr. Alvin V. Terry Jr. is Associate Vice President for Basic Science Research at Augusta University, Augusta Georgia. He is also is a tenured Regents Professor and the Chair of the Department of Pharmacology and Toxicology, Medical College of Georgia, Augusta University. He also holds joint appointments as Professor of Neurology and Graduate Studies at Augusta University, and is a licensed pharmacist in Georgia and South Carolina. A native of South Carolina, Dr. Terry received a B.S. in Pharmacy from the Medical University of South Carolina, Charleston, S.C. in 1982 and a Ph.D. in Pharmacology from the University of South Carolina, Columbia, S.C. in 1991. He received post-doctoral training and served as a junior faculty member at the Medical College of Georgia (MCG) from 1991-1994, then served as a faculty member of the University of Georgia, College of Pharmacy from 1994 until re-joining the Department of Pharmacology and Toxicology at MCG as Professor in December of 2005. To date, Dr. Terry has published 151 peer-reviewed research articles, 8 book chapters, and holds 1 US patent. His research is currently supported by the National Institutes of Health (NIH), the Department of Defense (DOD), and the pharmaceutical industry. Dr. Terry has served on multiple study sections for a variety of governmental agencies including The National Institutes of Health, NASA and The Department of Veterans Affairs, and The Department of Defense. He is a member of the Editorial Advisory Board of the Journal of Pharmacology and Experimental Therapeutics and he has also previously served as a consultant for an Environmental Protection Agency Federal Insecticide, Fungicide and Rodenticide Act Scientific Advisory Panel.

Dr. Terry's research interests focus on the role of central acetylcholine (i.e., cholinergic) pathways in cognition; specifically how these neuronal pathways are involved in the memory dysfunction associated with neuropsychiatric illnesses and exposures to environmental toxins, especially organophosphates. The actions of both pharmaceutical and toxicological agents on the cholinergic neuronal system, axonal transport, as well as the major growth factors (nerve growth factor, brain derived growth factor) that support the cholinergic system are of particular interest. His laboratory also focuses on drug discovery and development strategies for the treatment of disorders of cognition. The laboratory employs a variety of methods to test hypotheses ranging from behavioral testing in animal models (rodents to non-human primates) to molecular, cellular and analytical techniques.