

Unraveling Low Dose Toxicity: Case Studies of Systematic Review of Evidence

Committee

David C. Dorman

Chair

David C. Dorman is a professor of toxicology in the Department of Molecular Biosciences of North Carolina State University. 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 toxicity in humans. Dr. Dorman's research interests include neurotoxicology, nasal toxicology, pharmacokinetics, and cognition and olfaction in animals. He has chaired or served on several NRC committees, including the Committee on Design and Evaluation of Safer Chemical Substitutions - A Framework to Inform Government and Industry Decisions, the Committee to Review EPA's Draft IRIS Assessment of Formaldehyde, and the Committee to Review the IRIS Process. He has served on other advisory boards for the US Navy, NASA, and USDA, and is currently a member of the NTP's Board of Scientific Counselors. He is an elected fellow of the Academy of Toxicological Sciences and a fellow of the American Association for the Advancement of Sciences. He received his DVM from Colorado State University. He completed a combined PhD and residency program in toxicology at the University of Illinois, Urbana-Champaign, and is a diplomate of the American Board of Veterinary Toxicology and the American Board of Toxicology.

Weihsueh A. Chiu

Member

Weihsueh Chiu is a professor in the Department of Veterinary Integrative Biosciences in the College of Veterinary Medicine and Biomedical Sciences at Texas A&M University. Before joining the university, he worked at EPA for over 14 years, most recently as chief of the Toxicity Pathways Branch in the Integrated Risk Information System (IRIS) Division of the National Center for Environmental Assessment. His research has focused on human health risk assessment, particularly with respect to toxicokinetics, mechanisms of toxicity, physiologically based pharmacokinetic modeling, dose-response assessment, and characterizing uncertainty and variability. He led the development of EPA's 2011 IRIS assessment of trichloroethylene, which pioneered the use of probabilistic methods for characterizing uncertainty and variability in toxicokinetics and dose-response. He is currently a member of the NRC's Committee on Predictive-Toxicology Approaches for Military Assessments of Acute Exposures. Dr. Chiu received his PhD in physics from Princeton University.

Barbara F. Hales

Member

Barbara F. Hales is a James McGill Professor in the Department of Pharmacology and Therapeutics at McGill University. Her research interests are in the mechanisms of action of drugs as teratogens. She studies developmental toxicity using a combination of in vivo, in vitro, and molecular approaches with the goal of elucidating how the embryo responds to insult after direct or maternal exposure and the consequences to progeny of paternal drug exposure. Dr. Hales is a past president of the Teratology Society, and is currently co-chair of the Chemicals Management Plan Science Committee of the Government of Canada. She received her MSc in pharmacognosy from the Philadelphia College of Pharmacy and Science and her PhD in pharmacology and therapeutics from McGill University.

Russ B. Hauser

Member

Russ B. Hauser is the Frederick Lee Hisaw Professor of Reproductive Physiology and professor of environmental and occupational epidemiology in the Department of Environmental Health at the Harvard T.H. Chan School of Public Health. He also holds an appointment at the Harvard Medical School, where he is professor of obstetrics, gynecology, and reproductive biology. Dr. Hauser's research focuses on the health risks posed by exposure to environmental chemicals that adversely affect human development and reproductive health. He has served on several NRC and IOM committees, including the Committee to Review EPA's State of the Science Paper on Nonmonotonic Dose Response and the Committee on the Health Risks of Phthalates. Dr. Hauser is a member of two U.S. EPA Science Advisory Boards. He served on the U.S. Consumer Product Safety Commission's Chronic Hazard Advisory Panel examining the effects of phthalates on children's health. He received his MD from the Albert Einstein College of Medicine and his MPH and ScD from the Harvard School of Public Health.

Kamin J. Johnson

Member

Kamin J. Johnson is a lead scientist for The Dow Chemical Company's Toxicology and Environmental Research and Consulting function, responsible for the scientific conduct and interpretation of developmental and reproductive toxicology studies. He has served on study sections of the National Institutes of Health (NIH) reviewing reproductive toxicology grants and was a counselor for the Reproductive and Toxicology Specialty Section of the Society of Toxicology. His research interests are in the molecular and cellular biology of fetal and postnatal testis function, as well as mechanisms of testicular toxicants. Dr. Johnson received his PhD in molecular biology, cell biology, and biochemistry from Brown University.

Karen A. Robinson

Member

Karen A. Robinson is an associate professor at the Johns Hopkins University School of Medicine. She also serves as director of the Johns Hopkins University Evidence-based Practice Center and is a member of the core faculty in the Center for Clinical Trials and Evidence Synthesis at the university's Bloomberg School of Public Health. Her research focuses on evidence-based health care and evidence-based research. She conducts systematic reviews that are used to develop clinical practice guideline and to inform other health decisions. Dr. Robinson received her MSc in health sciences from the University of Waterloo, Ontario, and her PhD in epidemiology from the Johns Hopkins University Bloomberg School of Public Health.

Andrew A. Rooney

Member

Andrew A. Rooney is deputy director of the Office of Health Assessment and Translation (OHAT) in the National Toxicology Program (NTP) at the National Institute of Environmental Health Sciences. He has been developing risk assessment methods and guidance throughout his professional career and is a principal author of the 2012 WHO/IPCS Guidance for Immunotoxicity Risk Assessment for Chemicals. Most recently, he has been working on emerging issues in toxicology and environmental health, including methods to address study quality in terms of risk of bias for human, animal, and mechanistic studies and adaptation of systematic review methods for addressing environmental health questions. He led the team that developed the OHAT approach to systematic review. Dr. Rooney has an MS and PhD in zoology from the University of Florida.

Ruthann Rudel

Member

Ruthann Rudel is director of research at the Silent Spring Institute, an independent not-for-profit environmental research organization focused on women's health. She leads the exposure and toxicology research program focusing on endocrine active chemicals and on mechanisms by which chemicals may influence breast cancer. Her work in toxicology includes a review of early life exposure to chemicals that alter mammary gland development and implications for testing protocols and risk assessment. She also has an appointment as a research associate in the Department of Pathology and Laboratory Medicine at Brown University. Ms. Rudel was a member of the National Toxicology Program's Board of Scientific Counselors and of the Society of Toxicology's Regulatory Affairs and Legislative Assistance Committee. She received an MS in environmental management and policy from Tufts University.

Sheela Sathyanarayana

Member

Sheela Sathyanarayana is an associate professor in the Department of Pediatrics and an adjunct associate professor in the Department of Environmental and Occupational Health Sciences at the University of Washington. She is also an attending physician at Harborview Medical Center and Seattle Children's Hospital. Her research interests focus on exposures to endocrine disrupting chemicals, including phthalates and bisphenol A and their effects on reproductive development. Currently, Dr. Sathyanarayana is the center director and clinical director for The Infant Development and Environment Study, which is a multi-center cohort study of phthalate exposures in pregnancy and health outcomes in children. She also chairs the EPA Children's Health Protection Advisory Committee. Dr. Sathyanarayana earned an MD from the University of Southern California and an MPH in epidemiology from the University of Washington.

Susan L. Schantz

Member

Susan L. Schantz is a professor of toxicology in the Department of Comparative Biosciences, College of Veterinary Medicine, at the University of Illinois, Urbana-Champaign. She is also director of a National Institute of Environmental Health Sciences (NIEHS) T32 training program in endocrine, developmental, and reproductive toxicology and director of a Children's Environmental Health Research Center jointly funded by NIEHS and EPA. In addition, she is currently the interim director of the Neuroscience Program. Her research interests involve understanding the neurobehavioral effects of chemical exposures during development and aging. She conducts research in both laboratory-based animal studies and parallel epidemiologic studies. Dr. Schantz has served as a president of the Neurotoxicology Specialty Section of the Society of Toxicology and president of the Neurobehavioral Teratology Society. She was also a member of the NRC Committee to Assess the Health Implications of Perchlorate Ingestion. She received her PhD in environmental toxicology from the University of Wisconsin, Madison.

Katrina Waters

Member

Katrina Waters is deputy director of the Biological Sciences Division at the Pacific Northwest National Laboratory. Her research interests are focused on the integration of genomics, proteomics, metabolomics and high-throughput screening data to enable predictive mechanistic modeling of disease and toxicity pathways. She currently serves on the EPA's Board of Scientific Counselors Subcommittee on Chemical Safety for Sustainability and the Scientific Advisory Board for Food and Drug Administration National Center for Toxicological Research. She recently served on the NRC's Committee on Predictive-Toxicology Approaches for Military Assessments of Acute Exposures. Dr. Waters received her PhD in biochemistry from the University of Wisconsin, Madison, and did a postdoctoral fellowship on endocrine disruptors at the Chemical Industry Institute of Toxicology.