# Biographical Sketches of Human Health Risk Assessment Independent External Review Panel (IERP)

## Dr. Gary Diamond

Dr. Gary Diamond is a Senior Research Fellow in the Environmental Science Center of Syracuse Research Center (SRC) and has more than 20 years of experience in experimental research and applications of toxicological and epidemiological research to human health risk assessment related to heavy metals. Dr. Diamond has participated and/or led numerous research projects that have focused on developing improved methods for assessing risks and reducing uncertainty of estimates of health risks related to exposures to metals. He currently leads research projects to develop exposure-toxicokinetics models for cadmium, lead, and zinc compounds for use in risk assessment and to develop methods for the consistent integration of bioavailability information into quantitative risk assessment of metals. He has served as SRC Program Manager on numerous contracts and the SRC Principal Investigator on two cooperative agreements to support risk assessment programs of the U.S. Public Health Service Agency of Toxic Substances and Disease Registry (ATSDR), the U.S. Environmental Protection Agency (EPA), the U.S. Department of the Interior, and the U.S. Department of Transportation. Prior to joining SRC, as a member of the faculty of the Departments of Pharmacology and Environmental Medicine at the University of Rochester, he conducted research on the transport of heavy metals in the kidney. He served as a consultant to the Metals Subcommittee of the Environmental Health Committee of the U.S. EPA Science Advisory Board (SAB) for 5 years and also served on the SAB Dermal Risk Assessment Workgroup, as well as the International Life Science Institute Working Group on Bioavailability. He currently holds an adjunct faculty professorship at the State University of New York College of Environmental Science and Forestry (SUNY ESF), where he teaches and participates in collaborative research on exposure and risk modeling of metals.

Dr. Diamond received a B.S. in Zoology from the University of Maryland and his Ph.D. in Pharmacology from the University of Minnesota.

## Dr. Michael L. Dourson

Dr. Dourson is Director of Toxicology Excellence for Risk Assessment (*TERA*), a nonprofit corporation with a mission to protect public health. *TERA* develops partnerships among government, industry and other interested groups to address risk assessments of high visibility, such as soluble nickel, formaldehyde, perchlorate, and chloroform; as well as cooperative ventures such as the Voluntary Children's Chemical Exposure Program (VCCEP) and the International Toxicity Estimates for Risk (*ITER*) database available at the U.S. National Library of Medicine's TOXNET. Prior to founding *TERA*, Dr. Dourson worked 15 years for the U.S. Environmental Protection

Agency (EPA), holding several leadership roles and winning four bronze medals for joint efforts on specific key projects, such as the creation of EPA's Integrated Risk Information System (IRIS). In 2003, Dr. Dourson was awarded the Arnold J. Lehman award for major contributions that improve the scientific basis of risk assessment by the Society of Toxicology (SOT). Dr. Dourson has published more than 100 papers on risk assessment methods, use of animal and human data in the assessment of risk, or assessments for specific chemicals. He has also co-authored well over 100 government risk assessment documents, made numerous invited presentations, and chaired many sessions at scientific meetings and independent peer reviews. Some of these papers and presentations dealt with toxicology and risk assessment of chromium, arsenic, copper, and nickel. Dr. Dourson has organized numerous symposia on a variety of topics, including: risk communication; chromium; information resources for toxicology and environmental health; risk assessment of essential trace elements; risk characterization; EPA's IRIS; uncertainty in risk assessment techniques; statistical and dose response models in risk assessment; workshop on benchmark dose methodology; basics of risk assessment; improvements in quantitative noncancer risk assessment; and neurotoxicity risk assessment. He has been elected to multiple officer positions in the American Board of Toxicology, SOT, and the Society for Risk Analysis. He is also a media resource specialist in risk assessment for the SOT, member of the editorial board of three journals, and vice chair of the NSF International Health Advisory Board.

Dr. Dourson received a B.A. in Biology from Wittenberg University and his Ph.D. in Toxicology from the University of Cincinnati. He is a Diplomate of the American Board of Toxicologists (DABT).

#### Dr. Andrew P. Gilman

Dr. Gilman is President of a small international consulting firm, Sustainable Solutions International and a Research Fellow with the University of Ottawa Population Health Institute. In these positions, he applies his 31 years of experience in Government (health and environmental sciences, policy development, management and evaluation, sustainable development) and his academic and research background in toxicology and epidemiology to develop and implement projects for clients in Canada and abroad. Previously he served in various capacities for the Canadian government, including as the Executive Director of the Office of Sustainable Development and Director of the Bureau of Chemical Hazards, Health Canada. He has been actively involved in chemicals and metals management both domestically and internationally for 25 years. Chemicals-related activities have involved risk assessment and developing regional and global initiatives to control the long-range transport of environmental contaminants that can affect human health and the environment. He also has a focus on metals such as mercury, lead, cadmium, and uranium. Dr. Gilman has been involved in numerous public consultations, the negotiation of several international agreements including the recent Stockholm Convention, and in capacity building projects in Russia, the Philippines, Kenya, China, Mexico, and Thailand. He has been responsible for

developing new programs related to population health in the Arctic, the Great Lakes Basin, and the St Lawrence River Basin and under the Canadian Government's program to embrace Sustainable Development. He received numerous awards for his public service, including the *Public Service of Canada's Award of Distinction* in 2002 and the *Queen's Golden Jubilee Award* for community and public service in 2003. Dr. Gilman has published and presented numerous scientific and policy papers and book chapters, and given guest lectures at Canadian and European universities and international agencies such as the World Bank and the UN Environment Program.

Dr. Gilman received his Honors Bachelor of Science degree in Zoology and his Master of Science degree in Toxicology from the University of Western Ontario. His Ph.D. was completed at the University of Guelph's Ontario Veterinary College, Department of Pathology, in 1975.

## Dr. D. Susan Griffin

Dr. Griffin is a Senior Toxicologist with the Superfund Program at the U.S. Environmental Protection Agency (EPA) in Denver, Colorado. She received her doctorate in Veterinary Toxicology and Pharmacology at the University of California, Davis and is board certified by the American Board of Toxicology. Dr. Griffin has worked for the U.S. Environmental Protection Agency for 19 years and has extensive experience in assessing human health risks from mining and smelting sites in the Western U.S. She has completed several hundred human health baseline risk assessments for hazardous waste sites and endangerment assessments for emergency response actions. At the Regional level, she has been involved in conducting sitespecific bioavailability studies in swine and in vitro bioaccessibility studies to determine the amounts of lead and arsenic, which are bioavailable from soil. At the national level, she chaired the workgroup that developed the Integrated Exposure Biokinetic Uptake Model for Lead for the U.S. Superfund Program as well as the accompanying guidance documents. She was actively involved in writing and developing U.S. Superfund guidance documents, such as the Probabilistic Risk Assessment Guidance for Superfund and developing chemical toxicity values for EPA's Integrated Risk Information System (IRIS) data base. Dr. Griffin has also worked with U.S. Agency for International Development in Romania to instruct environmental agencies and citizen groups in assessing lead exposures and risks from smelters. In 2000, she was asked to consult with the Chilean Ministry of Mines on arsenic exposures and health effects at the Chuquicamata Mine.

Dr. Griffin has a B.S. in Genetics from the University of California, Davis and received her Ph.D. in Veterinary Toxicology and Pharmacology from University of California; Davis. She is a Diplomate of the American Board of Toxicology (DABT).

#### Dr. Heather E. Jamieson

Dr. Jamieson is a professor at Queen's University, Kingston, Ontario with faculty appointments in Geological Sciences and Geological Engineering as well as the School of Environmental Studies. She teaches courses in aqueous geochemistry, mine waste geochemistry and global water issues. She is a Research Director of the GeoEngineering Centre at Queen's-RMC. Dr. Jamieson was awarded the Queen's Chancellor's Research Award (\$50,000) in 2003 designed to provide a junior researcher with demonstrated high research potential the means to achieve significant impact on their discipline. Dr. Jamieson's current and recent research support includes grants from Queen's University, the Canadian and Ontario governments (National Sciences and Engineering Research Council of Canada (NSERC), including the Research Network Metals in the Human Environment, which is a collaboration of academia, government, and industry; Center for Research in Earth and Space Technology -Ontario Centers of Excellence: the Department of Indian Affairs and Northern Development; the International Development Research Center; Natural Resources Canada Synchrotron Research Program; and the Canadian Foundation for Innovation); Golder Associates; and BHP Billiton Diamonds.

Dr. Jamieson's expertise is in the area of environmental geochemistry applied to understanding rock-water interaction and the mechanisms that control metal release and attenuation from mine waste and contaminated soils. Her research program has a particular emphasis on the speciation of metals and metalloids in the solid form and the implication of element speciation for human health risk assessment. Dr. Jamieson and her graduate students have applied advanced microanalytical techniques such as synchrotron-generated X-ray analysis and proton-induced X-ray emission analysis to mine tailings and contaminated soils. Her research group has conducted field studies at operating and abandoned mine sites in Nova Scotia, Northwest Territories, Ontario, California, and Spain. These projects include sites of extreme acid mine drainage, gold mine tailings where pH is neutral but arsenic and antimony are mobile and diamond mine tailings stored in arctic lakes. Other projects include the potential for sequestration of carbon dioxide in kimberlite tailings and testing the use of geosynthetic clay liners to contain mine waste leachate.

Dr. Jamieson holds a B.Sc. in Geology from the University of Toronto and a Ph.D. in Geology from Queen's University.

## Dr. Rosalind A. Schoof

Dr. Schoof is a consultant in toxicology and risk assessment with Integral Consulting, Inc. located in Mercer Island, Washington. She has conducted evaluations of chemical toxicity, health risk assessments for cancer and noncancer end points, and multimedia assessments of exposure to chemicals for diverse mining and mineral processing sites, manufacturing sites, landfills, incinerators, and other sources of exposure. Dr. Schoof's particular research interests include the bioavailability of arsenic and metals present in soils and dietary exposures to arsenic and metals. She has served on numerous peer review panels for U.S. agencies and Canadian ministries, and has been a member of several U.S. National Research Council Committees. Currently she is serving as a member of the British Columbia Contaminated Sites Science Advisory Board and the Expert Advisory Panel for the Canadian Metals in the Human Environment – Research Network.

Dr. Schoof received her B.A. in Molecular Biology fro Wellesley College and her Ph.D. in toxicology from the University of Cincinnati. She is a Diplomate of the American Board of Toxicology.

## Dr. Joyce S. Tsuji

Dr. Tsuji is a Principal in Exponent's Health Sciences practice and is located in the firm's Bellevue, Washington office. She is a board-certified toxicologist with 19 years of experience in toxicology and risk assessment on projects in the United States, Canada, South America, Africa, Australia, and Asia for private clients, EPA, the U.S. Department of Justice, the Australian EPA, and state and local municipalities. Particular areas of interest include exposure assessment and toxicology of a variety of chemicals including those from industrial releases and in consumer products and nanomaterials. Dr. Tsuji has specialized experience with mining and smelting sites and the toxicology, bioavailability, and exposure to metals such as arsenic, lead, cadmium, mercury, manganese, and chromium. She has conducted risk assessments of mining and smelting sites, and has designed and directed exposure studies involving health education, environmental sampling, and biomonitoring of populations potentially exposed to metals in soil, water, and the food chain. Her consulting work has been done for public and private companies, including mining companies and state and federal agencies. Dr. Tsuji has served on expert committees for the National Academy of Sciences/National Research Council, including serving as a peer reviewer for the report on the Coeur d'Alene Basin mining site and risk assessment. She also serves on committees for the U.S. EPA, U.S. Army, and the State of Washington (including the Area Wide Soil Contamination group of experts convened by the State of Washington to evaluate arsenic and lead in soil). Dr. Tsuji has served as an expert witness on several legal cases involving metals and mines and has published a number of papers on risk assessment issues, including arsenic and lead in soils.

Dr. Tsuji received a B.S. in biological sciences from Stanford University with honors and distinction, Phi Beta Kappa, and a Ph.D. focused in physiology and ecology from the Department of Zoology, University of Washington. She is a Diplomate of the American Board of Toxicology.