

Workshop Participant Information

Christopher Austin is Director of the NIH Chemical Genomics Center (NCGC) at the U.S. National Institutes of Health (NIH), and Senior Advisor to the Director for Translational Research at the National Human Genome Research Institute. The NCGC is an ultrahigh-throughput screening, informatics, and chemistry center that profiles small molecule libraries for biological activity using its qHTS technology, and develops novel compounds as probes of biology and starting points for the development of new drugs for rare and neglected diseases. A founding partner with the National Toxicology Program (NTP) and EPA in the Tox21 Program, the NCGC also develops new paradigms to increase the efficiency and genome-wide reach of assay, screening, chemistry, and informatics technologies. In his role as Senior Advisor for Translational Research, Dr. Austin was a principal architect of several large initiatives to translate the human genome sequence into biological function and therapeutics, including the NIH Molecular Libraries Initiative, a multifaceted program of small molecule technologies in the public sector, the Knockout Mouse Project, which is producing knockout mice for all mouse genes, and a project to develop an in-depth transcriptome map of the mouse. Before being recruited to NIH in 2002, Dr. Austin directed research programs genomics-based target discovery, pharmacogenomics, and DNA microarray technologies at Merck, with a focus on neuropsychiatric diseases. Dr. Austin received his A.B. in biology summa cum laude from Princeton, and his M.D. from Harvard. He completed clinical training in internal medicine and neurology at the Massachusetts General Hospital, and a fellowship in genetics at Harvard.

Deborah Cory-Slechta received her Ph.D. degree from the University of Minnesota in 1977 and worked as a junior staff fellow at the National Center for Toxicological Research before moving to the University of Rochester in 1979 to begin a post-doctoral fellowship. She was appointed to the faculty in 1982 and in 1998 became Chair of the Department of Environmental Medicine and Director of the NIEHS Environmental Health Sciences Center at the University of Rochester. From July 2000- July 2002, she was appointed and served as Dean for Research and Director of the Aab Institute for Biomedical Sciences, a newly established post at the University and as such, became the first female dean in the history of the Medical School. She served as 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 the University of Rochester Medical School as Professor in Environmental Medicine and Pediatrics. Dr. Cory-Slechta has served on numerous national research review and advisory panels, including committees of the National Institutes of Health, the National Institute of Environmental Health Sciences, and the National Academy of Sciences. She currently serves on the Science Advisory Board of the US EPA. In addition, Dr. Cory-Slechta has served on the editorial boards of several journals including Neurotoxicology, Toxicology, and Toxicological Sciences. 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

neurotransmitter systems and behavior, and how such relationships are altered by exposures to environmental toxicants, particularly the role of environmental neurotoxicants in developmental disabilities and neurodegenerative diseases and has resulted in over 100 papers and book chapters to date.

Linda G. Griffith is the School of Engineering Teaching Innovation Professor of Biological and Mechanical Engineering at MIT. She is Director of the Biotechnology Process Engineering Center. Dr. Griffith's research is in the field of tissue engineering and spans fundamental molecular science to macroscale device design and fabrication, and applications ranging from in vivo tissue regeneration to creation of in vitro models for drug discovery. Her laboratory, in collaboration with J. Upton and C. Vacanti, was the first to combine a degradable scaffold with donor cells to create tissue-engineered cartilage in the shape of a human ear. The 3D Printing Process she co-invented for creation of complex scaffolds has been commercialized by Therics, Inc and is used for manufacture of FDA-approved scaffolds for bone regeneration. She has also been a pioneer in creation of 3D tissue models of liver for drug development. Her work has been featured on television documentary shows including Scientific American Frontiers hosted by Alan Alda. Dr. Griffith received a Bachelor's Degree from Georgia Tech in 1982 and a PhD degree from the University of California at Berkeley in 1988, both in chemical engineering. Following a postdoc with Robert Langer and Joseph Vacanti at MIT and Children's Hospital, she joined the faculty at MIT in Jan. 1991, teaching at MIT and Harvard Medical School. Her awards include the MacArthur Foundation Fellow, Popular Science Brilliant 10, NSF Presidential Young Investigator, Society for Biomaterials Clemson Award for Basic Research, MIT Class of 1960 Teaching Innovation Award, along with named lectures at academic institutions and societies. She cofounded the ASCB-ECI "Engineering Cell Biology" Conference, has served as Co-Chair of the Materials Research Society Annual Spring Meeting, the Keystone Tissue Engineering Meeting, and the joint NSF-NIH Workshop on Bioengineering and Bioinformatics Training and Education, and has served as a member of the Advisory Councils for the National Institute for Dental and Craniofacial Research and the National Institute of Arthritis, Musculoskeletal and Skin Diseases at NIH. She has chaired the Undergraduate Curriculum Committee for Biological Engineering and led development of the new Biological Engineering SB degree program, which was approved in 2005 as MIT's first new undergraduate major in 39 years.

Richard Judson is with the EPA National Center for Computational Toxicology where he is developing databases and computer applications to predict and model toxicological effects of a wide range of chemicals. He is a member of the EPA ToxCast team where he leads the bioinformatics efforts. His team has developed the ACToR (Aggregated Computational Toxicology Resource) database and application which is compiling all publicly available data on environmental chemicals. He has authored more than 70 research publications in areas including computational biology and chemistry, bioinformatics, genomics, human genetics, toxicology and applied mathematics. Prior to joining the EPA, Dr. Judson was founder of GAMA BioConsulting, a bioinformatics consulting company. From 1999-2006, Dr. Judson was Senior Vice President and Chief Scientific Officer with Genaissance Pharmaceuticals. Prior assignments included

CuraGen from 1997-1998 and Sandia National Laboratories from 1990-1996. Dr. Judson has a BA in Chemistry and Chemical Physics from Rice University and an MA and PhD in Chemistry from Princeton University.

Abby A. Li is a Senior Managing Scientist in the Health Science Practice of Exponent Inc., an international scientific consulting firm. Her areas of interest include adult and developmental neurotoxicology, toxicology and quantitative risk assessment. She is currently doing research evaluating the neurotoxic potential of industrial and agricultural chemicals, and the application of quantitative risk assessment approaches to neurochemical, neurobehavioral and general toxicology data. Previously to joining Exponent Inc., Dr. Li was Senior Science Fellow at Monsanto, providing expertise in toxicology/risk assessment to address regulatory science issues in different world areas. She led the neurotoxicology group at Monsanto's Environmental Health Laboratory for more than ten years where she conducted pharmacokinetic, toxicology and neurotoxicology studies for industrial chemicals, agricultural products, and pharmaceuticals. These studies included both guideline and specialized mechanistic studies, as well as human and in vitro studies. She continues to be involved in similar projects at Exponent. Dr. Li recently served for two years on the National Academy of Science's National Research Council Committee on Toxicity Testing and Assessment of Environmental Agents. She was a full member of the EPA's Science Advisory Board's Environmental Health Committee for 6 years, and is currently serving on the EPA's Risk and Technology Review Committee evaluating effects of industrial emissions of hazardous air pollutants on public health and the environment. She has been a member of several International Life Science Institute Committees on developmental neurotoxicology and toxicity testing of pesticides. Dr. Li served on the U.S. expert teams to the Organization for Economic Cooperation and Development (OECD) for the development of international test guidelines for adult and developmental neurotoxicology, and as chair of neurotoxicology expert groups for industry trade organizations addressing regulatory science issues in neurotoxicology. She received her Ph.D. in pharmacology and physiology from the University of Chicago.

Carol Mattingly is an Investigator and Director of the Bioinformatics Department at the Mount Desert Island Biological Laboratory in Salisbury Cove, ME, USA. Dr. Mattingly and colleagues are developing the publicly available Comparative Toxicogenomics Database (CTD; <http://ctd.mdibl.org>), which aims to enhance understanding about the etiologies of environmentally influenced diseases. This unique resource provides curated data describing chemical-gene/protein interactions and chemical- and gene-disease relationships from the published literature. This information is integrated with additional data sets to facilitate development of novel hypotheses about chemical-disease connections. Dr. Mattingly also co-coordinates a laboratory research program that investigates the effects of low-level exposures to arsenic or TCDD on vertebrate development using zebrafish as a model organism. She earned her undergraduate degree in Art History from Oberlin College (Oberlin, OH), a PhD in Molecular Toxicology from Tulane University (New Orleans, LA) and completed postdoctoral training at the Weill Medical College of Cornell University.

Richard Superfine, Professor of Physics and Astronomy at UNC-CH, received his B. S. in physics from Lehigh University before working at AT&T Bell Laboratories for three years. He studied nonlinear optics for Ph. D. thesis at University of California at Berkeley, followed by a postdoctoral fellowship at Lawrence Berkeley National Laboratories. His research includes the study of nanotechnology, biological forces, biofluids and the systems biology of lung defense. In the area of instrumentation development, his research includes the development and application of advanced microscopy manipulation techniques and systems to biomedicine and nanotechnology. He is the principal investigator of the UNC NIH resource for Computer Integrated Systems for Manipulation and Microscopy (CISMM.org) which develops tools for biomedical sciences. One microscopy system, the nanoManipulator, has been commercialized and has won an R&D 100 award (2001). He has served on numerous review panels for the NIH, DOD, DOE and National Science Foundation. He has received the Macres Award from the Microbeam Analytical Society, the Hettelman Prize for excellence in scholarship from UNC-CH, and for distinguished undergraduate teaching at UNC-CH, the Johnson Award and the Bowman and Gordon Gray Professorship.

Robert Tanguay is an Associate Professor in the Department of Environmental and Molecular Toxicology, the Director of the Sinnhuber Aquatic Research Laboratory, Director of the NIEHS Toxicology Training Grant, and the Director of a NCRV Veterinary Training Grant in Aquatic Models for Biomedical Research. He received his PhD in Biochemistry from the University of California-Riverside (1995) and postdoctoral training in developmental toxicology from the University of Wisconsin-Madison (1996-1999). Over the past several years he has exploited the molecular and genetic advantages of zebrafish to define the molecular mechanism by which chemicals, drugs and nanoparticles interact with and adversely affect vertebrate development and function. His group has demonstrated that zebrafish provide an ideal discovery platform for rapid throughput in vivo assessments and for identifying the gene products that underlie the phenotypic responses to environmental insults.

Alexander Tropsha is K.H. Lee Distinguished Professor and Chair of the Division of Medicinal Chemistry and Natural Products in the Eshelman School of Pharmacy, UNC-Chapel Hill. He received PhD in Chemical Enzymology in 1986 from Moscow State University, Russia. He immigrated to the United States in 1989 and he has been affiliated with UNC since then. His research interests are in the areas of Computer-Assisted Drug Design, Computational Toxicology, Cheminformatics, and Structural Bioinformatics. He has authored or co-authored more than 120 peer-reviewed research papers and reviews and co-edited two monographs in the areas of computational drug discovery and cheminformatics. His research is supported by multiple grants from the NIH, NSF, EPA, and private companies. He is a member of several editorial boards of scientific journals, permanent member of the BDMA Study Section at the NIH and an elected member of the Board and vice-chair of the international Cheminformatics and QSAR Society.

Bennett Van Houten started at the University of Pittsburgh, September 1, 2008 as the Richard Cyert Professor of Molecular Oncology, Hillman Cancer Center with a faculty

appointment in the Department of Pharmacology and Chemical Biology. Dr. Van Houten is the leader of the Molecular and Cellular Cancer Biology Program at the Hillman Cancer Center where he will continue to build in the area of genome instability and cancer. He is also a member of the Molecular Biophysics & Structural Biology teaching faculty. Bennett Van Houten received his Bachelor's degree from Clarion University and his Ph.D. from the University of Tennessee at the Oak Ridge Graduate School of Biomedical Sciences, in Oak Ridge, Tennessee in 1984. Prior to moving to the University of Pittsburgh, Dr. Van Houten was the Chief of the Program Analysis Branch in the Division of Extramural Research and Training and Senior Investigator in the Laboratory of Molecular Genetics in the Division of Intramural Research at National Institute of Environmental Health Sciences, NIH from 1999-2008. While at the NIEHS, Dr. Van Houten was recognized with five NIH Merit Awards, and a NIH Director's Award, and for his service to science was recently awarded a Medal of Science by the Slovak Academy of Sciences. Dr. Van Houten's research laboratory is doing cutting-edge research in two areas, namely the structure and function of DNA repair enzymes, and the role of mitochondria in cancer and neurodegenerative disease. He holds three patents, and has authored over 125 scientific articles, co-edited a book on DNA damage recognition, and has also published 17 book chapters and reviews. Dr. Van Houten currently serves on the Editorial boards of the Journal of Biological Chemistry, Mutation Research, and DNA Repair. He has been the chair of the Gordon Research Conferences on Genetic Toxicology in 2005, and co-chair and the Oxidative Stress and Disease in 2007.

H. Steven Wiley joined Pacific Northwest National Laboratory, Richland, WA, to lead its systems biology program, which exploits the laboratory's unique capabilities in cell imaging, computational biology and high-throughput proteomics. Currently, he is also Lead Biologist at the Environmental Molecular Sciences Laboratory, a U.S. Department of Energy national scientific user facility located at PNNL. His research interests are focused on understanding mechanisms of cell communication using the epidermal growth factor receptor system as a model. This work also involves mapping cellular signal transduction networks and how these networks integrate information from multiple inputs. Dr. Wiley pioneered methods for the quantitative analysis of receptor dynamics in mammalian cells and published some of the first computer models of receptor regulation. He has been a major contributor to the field of receptor research, particularly with regard to the control of receptor distribution within cells. Dr. Wiley's work is notable for combining the techniques of molecular and cellular biology with both biochemical and optical assays. The results are then used to build computer models of the underlying cellular processes. He is the author or co-author of more than 100 scientific journal articles, review articles and book chapters.

Russell D. Wolfinger is Director of Scientific Discovery and Genomics at SAS Institute, Inc. Russ earned a Ph.D. in statistics from North Carolina State in 1989 and has been at SAS ever since. His first ten years were devoted to developing statistical procedures in the areas of linear and nonlinear mixed models, multiple testing, and density estimation. In 2000 he started the Scientific Discovery department at SAS, and since then has been leading a team in research and development of software solutions in the areas of genetics, transcriptomics, and proteomics/metabolomics. He is co-author on over 100 publications,

a fellow of the American Statistical Association, and an adjunct faculty member at NC State University and University of North Carolina at Chapel Hill.