Speaker and Panelist Biographical Information

Stanley Barone was trained as a neuroscientist and came to EPA in 1990 as a developmental neurotoxicologist in the neurotoxicology division of what was to become National Health and Environmental Effects Research Laboratory (NHEERL) in the Office of Research and Development (ORD) in Research Triangle Park, NC. Subsequently, Dr Barone moved to Washington DC and joined the National Center for Environmental Assessment (NCEA) in 2004 after 14 years in NHEERL. Since 2006, Dr. Barone has been a Senior Scientist and Assistant Center Director for Human Health Risk Assessment at NCEA in ORD. Dr. Barone led an effort to develop and implement a framework for Assessing Health Risks of Environmental Exposures to Children which was published by EPA in 2006. Currently, he is working on cross-cutting human health risk assessment issues including ongoing IRIS assessments of tetrachloroethylene, trichloroethylene, methanol, formaldehyde and ethylene dichloride. Dr Barone's experience in cell biology and development of in vitro methods to address hazard of chemicals is currently being put to use in program planning to develop new approaches for assuring the safety of chemicals. Dr. Barone currently serves on the EPA Human Health Oversight Committee of the Risk Assessment Forum and is the EPA Project Officer on the World Health Organization cooperative agreements dealing with the International Programme on Chemical Safety (IPCS) and Protection of Human Health (PHE). He has published over 60 peer reviewed papers and 6 book chapters. Dr. Barone has served on peer review panels for numerous government and nongovernmental funding organizations (e.g., VA, NIH, FDA, DOD and Texas A&M University pilot grants program, Cure Autism Now (CAN) Investigator Initiated Research proposals for Jeffress Research Grant Memorial Trust). He has served on numerous government advisory panels (e.g., National Toxicology Program's Center for the Evaluation of Risks to Human Reproduction and Member of Interagency Workgroup on Development and Behavior to National Children's Study).

Ricardo Dolmetsch has been a faculty member in the Department of Neurobiology at Stanford University since 2003. He received his undergraduate degree from Brown University, his Ph.D. from Stanford University and he was a postdoctoral fellow at Harvard Medical School. He is the author of number of more than thirty publications and has received numerous awards including a McKnight Scholar, a Searle Scholar, an NIH Director's Pioneer Award and a Society for Neuroscience Young Investigator Award. His research is focused on understand the underlying biological basis of autism spectrum disorders using human stem cells and mouse models and on developing new approaches for treating these disorders.

Thomas A. Gasiewicz is Professor and Chairman of the Department of Environmental Medicine and Director of the Environmental Health Sciences Center at the University of Rochester School of Medicine in New York. Dr. Gasiewicz studies molecular mechanisms whereby the halogenated heterocyclic aromatics such as 2,3,7,8-tetrachlorodibenzo- p-dioxin (TCDD; dioxin) produce toxicity in mammals. His most recent work is examining the function of the aryl hydrocarbon receptor, that mediates the toxicity of TCDD, in hematopoietic stem cells. He has brought worldwide attention to the fact that dioxins are the most potent and long-lasting of the persistent organic pollutants, which is of great interest in public health, toxicology, chemistry, medicine, law, and to

regulatory agencies worldwide. From 2000 - 2005, he served on the NRC's Committees to Review the Health Effects of Vietnam Veterans of Exposure to Herbicides. Dr. Gasiewicz earned his Ph.D. in Toxicology at the University of Rochester.

Deborah K. Hansen received a B.S. degree in Zoology from Eastern Illinois University, a M.S. degree in Genetics from Iowa State University and a Ph.D. in Medical Genetics from Indiana University. She took postdoctoral positions at Yale University with Dr. Margaret Hitchcock and at the University of Texas Health Science Center at Houston with Dr. Ruth Billings. From 1985 to the present time, she has worked as a Research Biologist at the Food and Drug Administration's National Center for Toxicological Research where she is in the Division of Personalized Nutrition and Medicine. She also holds a position as Adjunct Associate Professor in the Department of Pharmacology and Interdisciplinary Toxicology at the University of Arkansas for Medical Sciences in Little Rock. She is a member of the Society of Toxicology, the Teratology Society and the South Central Chapter of the Society of Toxicology and has served as an officer and/or committee member for all three organizations. Her main research interest is developmental toxicology and in using in vivo and in vitro approaches to determine the mechanisms of developmental toxicants. She has utilized a variety of experimental techniques, including whole animal studies, whole embryo culture techniques, molecular techniques such as RT-PCR, real-time PCR, and micro-array experiments. Her research focus has recently led her to the use of embryonic stem cells both as a tool to screen compounds for developmental toxicity potential as well as to uncover the mechanisms whereby various compounds and/or nutritional deficiencies can result in birth defects.

David Jacobson-Kram received his Ph.D. in embryology from the University of Connecticut; he then went on to serve as a staff fellow at the National Institute on Aging. After leaving N.I.H., Dr. Jacobson-Kram joined the faculty of George Washington University School of Medicine and then later, Johns Hopkins University Oncology Center. During this same period he served, on a part-time basis, as a geneticist in the Office of Toxic Substances at the Environmental Protection Agency and as Acting Branch Chief in EPA's Office of Research and Development. Dr. Jacobson-Kram served as the VP of the Toxicology and Laboratory Animal Health Division at BioReliance Corporation, a contract testing laboratory from 1988 until 2003. Currently, he serves as the Associate Director of Pharmacology and Toxicology in FDA's Office of New Drugs. Over the past twenty years he has served as principal and co-principal investigator on several N.I.H. grants and government contracts and published widely in the areas of genetic and molecular toxicology. Dr. Jacobson-Kram has served as council member, treasurer and chairman of the Genetic Toxicology Association, executive council member to the Environmental Mutagen Society, Editor of Cell Biology and Toxicology, and as a member of N.I.H. special study sections. In 1996 he became a Diplomate of the American Board of Toxicology (DABT).

Tom Knudsen is a Developmental Systems Biologist at the US Environmental Protection Agency's National Center for Computational Toxicology. He received his Ph.D. in Anatomy from Thomas Jefferson University and postdoctoral training at the Children's Hospital Research Foundation in Cincinnati and Emory University. Before joining EPA he was Professor at University of Louisville. Dr. Knudsen's research is focused on predictive models of developmental toxicity, using HTS data, multicellular models and computational systems biology. In addition to his research at EPA, Dr.

Knudsen is Adjunct Professor at the University of Louisville, Editor in Chief of Reproductive Toxicology and Past-President of the Teratology Society.

Jane Lebkowski joined Geron Corporation in 1998 and is currently Senior Vice President and Chief Scientific Officer of the Regenerative Medicine Division. Dr. Lebkowski heads Geron's human embryonic stem cell program, and is responsible for all research, preclinical development, product development, manufacturing, and clinical development activities. Prior to Geron, Dr. Lebkowski was Vice President of Research and Development at Applied Immune Sciences. Following the acquisition of Applied Immune Sciences by Rhone Poulenc Rorer (RPR, currently Sanofi-Aventis), Dr. Lebkowski remained at RPR as Vice President of Discovery Research. During Dr. Lebkowski's tenure at RPR, she coordinated preclinical investigations of gene therapy approaches for treatment of cancer, cardiovascular disease and nervous system disorders, and directed vector formulations and delivery development. Dr. Lebkowski received her Ph.D. in Biochemistry from Princeton University in 1982, and completed a postdoctoral fellowship at the Department of Genetics, Stanford University in 1986. Dr Lebkowski has published over 70 peer reviewed papers and has 12 issued U.S. patents. Dr. Lebkowski serves as the co-chair of the Industrial Committee of the International Society for Stem Cell Research and serves on the editorial boards of several scientific publications.

M. William Lensch is an Instructor in Pediatrics at the Harvard Medical School, Affiliated Faculty and Faculty Advisor for Education of the Harvard Stem Cell Institute, and Senior Scientist in the laboratory of George Q. Daley, M.D., Ph.D. at Children's Hospital Boston and the Howard Hughes Medical Institute. His degree was obtained from Oregon Health Sciences University in the Department of Molecular and Medical Genetics where he studied congenital and acquired bone marrow failure. Lensch's current research revolves around the use of human stem cells as platforms for understanding genetics, development, and disease, primarily of the blood-forming system. Lensch is also a past gubernatorial appointee to the Stem Cell Research Advisory Committee for the State of Connecticut, the Ad Hoc Committee to Establish a Public Umbilical Cord Blood Bank for Connecticut, and is a founding member of the Interstate Alliance for Stem Cell Research – a voluntary multi-state consortium dedicated to fostering effective interstate collaboration and responsible use of public funds. Lensch currently sits on the Public Education Committee of the International Society for Stem Cell Research and has lectured internationally in scientific, medical, government, religious, and general public forums on the science, conduct, and policy of stem cell research in venues ranging from the New York Times to The Salt Lake City Tribune (Utah), Forbes Magazine to Sports Illustrated, and the Pontifical University Regina Apostolorum (Rome) to the Temple Ohabei Shalom (Massachusetts).

William McFarland received his Ph.D. (Experimental Pathology) and M.D. from the University of North Carolina at Chapel Hill. He received his residency and fellowship training at University of Texas Southwestern in Dallas where he stayed on as faculty in the Pathology Department as a researcher and attending physician in the Cellular and Humoral Pathology Laboratories. He has been at the Food and Drug Administration's Center for Biologics Evaluation and Research since 2000, first as a reviewer and currently serves as the Associate Director of Policy for the Office of Cellular, Tissue and Gene Therapies.

Roger A. Pedersen received degrees in biology from Stanford (A.B, 1965) and Yale (PhD, 1970) and did postdoctoral work at Johns Hopkins. In 1971, he joined the University of California, San Francisco, where he studied developmental potency and fate in mammalian embryos. He moved in 2001 to the University of Cambridge, where he continues his research on human embryonic stem cells as Professor of Regenerative Medicine. In September 2008, Professor Pedersen became the first Director of The Anne McLaren Laboratory for Regenerative Medicine, the translational phase of the Cambridge Stem Cell Initiative, and in January 2009 the Director of the MRC Centre for Stem Cell Biology and Regenerative Medicine, which supports the Cambridge Stem Cell Initiative (www.stemcells.cam.ac.uk).

William (Bill) Pennie is the executive director of Compound Safety Prediction at Pfizer Global Research and Development, Groton, Connecticut. Following postdoctoral fellowships at the National Institutes of Health, Bill started his industrial career at the Central Toxicology Laboratories (CTL) of Zeneca in Macclesfield England, working primarily on estrogen receptor selectivity, receptor-mediated transcription, microarray technologies, mechanistic toxicology and novel predictive toxicology approaches to help in compound selection. Since joining Pfizer in 2002, Bill has had roles including leading the Molecular and Investigative Toxicology group and was the Research Site Lead for Drug Safety Research and Development in Groton, Connecticut. In 2009 he built a new function in Pfizer global Research, the Compound Safety Prediction group, which aims to further develop mechanistic understanding of toxicity, build predictive models for toxicity mechanisms and integrate them into early design cycles of medicinal chemistry. He chaired the International Life Sciences Institute Health and Environmental Sciences Institute (ILSI HESI) Committee on the Application of Genomics to Mechanism-Based Risk Assessment from 2002 to 2004 and was a member of the NAS committee on Toxicology in the 21st Century. Bill received his PhD from the Beatson Institute for Cancer Research (Glasgow University).

Leslie Reinlib is a Health Scientist Administrator with the National Institute of Environmental Health Sciences, a component of the US National Institutes of Health. Among his major endeavors is the Directorship for the Breast Cancer and the Environment Research Centers, a nationwide study sponsored by NIEHS and NCI into the impact of exposures at specific life points such as puberty and pregnancy on the predisposition for breast cancer. He also develops and administrates programs in molecular and experimental carcinogenesis, environmental toxicology, and is the Director for the chain of Environmental Health Sciences Core Centers that support broad research on exposures, health, and disease at major US universities. Dr. Reinlib received a BS and MS in Biology from the University at Albany (Albany, NY) and a Doctorate in Natural Sciences and Biochemistry from the Swiss Federal Institute of Technology in Zurich, Switzerland, one of the world's premier biomedical research centers. He was on the faculty of Tufts University – New England Medical Center and later the Johns Hopkins University School of Medicine before joining the NIH intramural program in 1990.In 1992, he moved to program development at the National Heart, Lung, and Blood Institute where he mainly focused on basic science understanding of arrhythmia and heart failure. He joined NIEHS in 2003 in order to pursue insights on the environmental origins of breast cancer. Throughout his career, Dr. Reinlib has worked with laboratory and clinical investigators to focus on the cellular mechanisms of disease pathogenesis. He has published reports on cell therapies, environmental origins of

lupus, mechanisms of heart failure, and second messenger regulation in a variety of health disorders.

R. Michael Roberts is a Curators' Professor at the University of Missouri, with appointments in Animal Sciences, Biochemistry and Veterinary Pathobiology. He is currently an investigator in the University of Missouri, Christopher S Bond Life Sciences Center. He gained his B.A. and D.Phil. in Plant Sciences from Oxford University, England, but since the mid 1970s has worked primarily as a reproductive biologist. Roberts' is best known for his work on uterine secretions, and particularly the iron-binding acid phosphatase, uteroferrin, in the pig, and on how the early embryo signals its presence to the mother in ruminant species through the production of small proteins called interferons. More recently, Roberts has been studying the role of other unique trophoblast proteins in pregnancy and has (with colleague Jon Green) developed a pregnancy test for cattle that is in the process of being commercialized. He is currently studying specification of trophoblast as it emerges from pluripotent stem cells, creating trophoblast stem cells by reprogramming differentiated somatic cells. Another project pertains to the role of maternal diet in regulating the sex of her offspring. His work is supported primarily through Federal Agencies such as the National Institutes of Health (NIH) and the United States Department of Agriculture (USDA), and also through Missouri State funds in support of agriculture. Dr. Roberts has published over 270 papers in refereed scientific journals and over 70 reviews and chapters in books. He was elected to the National Academy of Sciences in 1996, and has received several international awards, including the Milstein Prize for Research on Interferons and the Wolf Prize for Agriculture (2003). Dr. Roberts also received the Carl G. Hartman Award (2006) from the Society for the Study of Reproduction. Roberts was Chief Scientist with the USDA's Competitive Grants Program (the National Research Initiative) from 1998-2000. He also served on the National Research Council's Committee that published recommendations to the Federal Drug Agency on concerns regarding the use of genetically modified animals for food (Animal Biotechnology: Science Based Concerns, National Academy of Sciences, Washington, D.C.) and chaired the NRC committee that investigated Animal Care & Management at the National Zoo.

Jose Russo is Professor and Senior Member of the FCCC. He is Director of the Breast Cancer Research Laboratory and Director of the NCI-NIEHS Breast Cancer and The Environment Research Center at the Fox Chase Cancer Center. Dr, Russo is also an Adjunct Professor of Pathology and Cell Biology at Jefferson Medical School and Adjunct Professor in Biochemistry at Temple Medical School in Philadelphia, Pennsylvania. Dr Jose Russo has authored more than 350 publications; eight books and is member of several editorial boards of scientific journals. He has received numerous research awards from the National Cancer Institute of the National Institute of Health (NIH) of the United States, from the American Cancer Society and the Department of Defense for his original research in breast cancer. For the last 25 years he has been an active member of the NIH peer review system and has served as a special reviewer for the American Cancer Society, National Science Foundation, Department of Defense and Veteran Affairs. Dr. Russo has trained 53 Ph.D. and M.D. investigators in cancer research. The interest of Dr. Russo have a broad base, but with a focused goal; 1) to understand the mechanisms that control the susceptibility of the breast epithelium to undergo neoplastic transformation; 2) to identify the role of the normal breast stem cells and their response to environmental carcinogens; 3) to identify markers of cancer susceptibility, and 4) to develop strategies for breast cancer prevention.

Tim Shafer received a B.S. in Biology and Chemistry for Hope College in 1986, and a Ph.D. in Pharmacology and Toxicology at Michigan State University in 1991, where he studied the actions of methymercury on calcium channel function. Tim joined the Neurotoxicology Division of the U.S. Environmental Protection Agency's National Health and Environmental Effects Research Laboratory as a post-doc in 1991, and was hired as a Principle Investigator in that organization in 1994. In 2009, he became part of the newly created Integrated Systems Toxicology Division. Tim's research program has utilized a variety of electrophysiological and biochemical approaches to increase the understanding of mechanisms underlying the neurotoxicity of diverse environmental chemicals including metals, pesticides, solvents and PCBs. Currently, research in his lab is focused on developing in vitro assays using neuroprogenitor cells that can be utilized to identify potential hazards of large numbers of chemicals and prioritize them for additional testing. A particular focus is on assays that may be useful to identify chemicals that may have the potential to cause developmental neurotoxicity.

James E. Trosko received a Ph.D. in radiation genetics. He did a postdoctoral fellowship at Oak Ridge National Laboratory (1963-66) in DNA damage/repair and in vitro mutagenesis. Dr. Trosko went to Michigan State University (1966) to work on the xeroderma pigmentosum, Cockynes and Blooms syndromes and to work on anti-cancer drug, cisplatin. Later, after receiving a NCI-Career Development award, he went to work at the McArdle Laboratory for Cancer Research-University of Wisconsin on chemical carcinogenesis, where he discovered that the tumor promoter, TPA, was not genotoxic but inhibited gap junctional intercellular communication (GJIC). After returning to MSU, Dr. Trosko's lab developed 4 new in vitro assays to detect non-genotoxic chemicals that had teratogenic, tumor promoting, immuno-modulatory, neuro-, cardiovascular -and reproductive- toxic effects. Dr. Trosko coined the term, "epigenetic toxicology", after showing that most of the toxic chemicals in the environment were (a) not genotoxic and (b) could inhibit GJIC, reversibly at non-cytotoxic concentrations. Also, his lab discovered that oncogenes could stably inhibit GJIC, while tumor suppressor genes, as well as multiple cancer chemo-preventive agents, and even some chemotherapeutic agents (SAHA), could either prevent the inhibition of GJIC by tumor promoters or increase GJIC in tumor cells, deficient in GJIC. All this was done based on assuming the "stem cell theory of cancer". That led his lab to search for the few stem cells that must exist in normal tissues of cancer-generating organs. Together with Dr. Chia- Cheng Chang, his lab discovered, in 1986, a human adult stem cell from the kidney. It was based on assuming stem cells had no functional gap junctions. Later, the lab discovered human breast epithelial stem cells, and other adult stem cells. In 1990-92, Dr. Trosko was Chief of Research at the Radiation Effects Research Foundation in Hiroshima, Japan. After returning to MSU, he spent a sabbatical studying human pancreatic stem cells and the Mediterranean diet at ARNAS-Civic Cancer Institute, Palermo, Sicily and 6 months at Seoul National University in the Human Adult Stem Cell Laboratory , where he is continuing his studies on characterizing adult human stem cells for their potential uses in drug discovery & toxicity assessment.

Zena Werb received her B.Sc. in Biochemistry from the University of Toronto, and her Ph.D. in Cell Biology from Rockefeller University. After postdoctoral studies at the Strangeways Research Laboratory in Cambridge England, she was recruited to the faculty of the University of California, San Francisco, where she is currently Professor and Vice-Chair of Anatomy. Dr. Werb is a member of the UCSF Diller Family Comprehensive Cancer Center and the The Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research at the University of California, San Francisco. She is recognized internationally for her fundamental discoveries about the molecular and cellular bases of extracellular matrix proteolysis and their roles in the normal functioning and pathogenesis of tissues. Her studies have led to new paradigms about the role of the cellular microenvironment and intercellular communication in breast development and cancer. Her honors include a Guggenheim Fellowship, the FASEB Excellence in Science Award, the Charlotte Friend Award of the American Association for Cancer Research and the E.B. Wilson Medal from the American Society of Cell Biology. Dr. Werb is an elected member of the National Academy of Sciences and of the Institute of Medicine, and a fellow of the American Academy of Arts and Sciences. She has the honorary degree of Doctor in Medicine from the University of Copenhagen. She has been an elected officer of the American Society for Cell Biology and the American Association for Cancer Research. She has published more than 400 papers. She serves or has served on the editorial boards of Science, Cell, Cancer Cell, Developmental Cell and Genes and Development.

Max S. Wicha, M.D., is founding director of the University of Michigan Comprehensive Cancer Center. He is responsible for coordinating all cancer activities related to research and patient care. Dr. Wicha also serves as the distinguished professor of oncology, professor of internal medicine and is nationally known for his research in the field of breast oncology, particularly the study of how breast cancer cells grow and metastasize. His lab was part of the team that first discovered stem cells in breast cancer, the first described in any human solid tumor. Since then, Dr. Wicha has become one of the leading experts on cancer stem cells, with his continued work on breast cancer stem cells. He has also led efforts within the UMCCC to expand these findings into other tumor types. U-M researchers were first to discover stem cells in pancreatic and head and neck cancers and are focusing on cancer stem cells in virtually every cancer type, including colon, lung and thyroid tumors. Dr. Wicha is also active as a clinician, specializing in the treatment of breast cancer patients. He has served as chairman of the board of the Association of American Cancer Institutes and as past chairman for the National Cancer Institute's Cancer Center Support Review Committee. Dr. Wicha joined the University of Michigan Medical Center in 1980. From 1984 to 1993, he served as chief in the Division of Hematology/Oncology in the Department of Internal Medicine. Dr. Wicha received his medical degree from Stanford University and trained in internal medicine at the University of Chicago. He then went on to the National Cancer Institute, where he trained in clinical oncology and cancer biology.

Tracey Woodruff is an Associate Professor in the Department of Obstetrics, Gynecology, and Reproductive Sciences and Pediatrics at the University of California, San Francisco and the Director of the Program on Reproductive Health and the Environment. She has done extensive research and policy development on environmental health issues, with a particular emphasis on early-life development. Her research areas include perinatal health effects from air pollution, developing the first national characterization of air toxics across the US, children's health risks, and environmental health indicators. She has authored numerous scientific publications. She recently departed from the US EPA, where she was a senior scientist and policy advisor in the Office of Policy, Economics, and Innovation. While at US EPA she was the principle author of two EPA reports on children's environmental health indicators. She also has worked on critical science policy issues at EPA, including participation in risk assessment review and development, and general policy development. She is a coauthor of the 2005 USEPA guidance addressing childhood susceptibility to carcinogens for use in risk assessment. She is an Associate Editor of Environmental Health Perspectives. She received her Ph.D. and M.P.H. in the environmental health sciences from the University of California, Berkeley. She completed a Pew Postdoctoral Fellowship at the University of California, San Francisco, Institute for Health Policy Studies.