

SEX AS A BIOLOGICAL VARIABLE

October 26-27, 2017

Workshop



SPEAKER BIOGRAPHIES

Nicole E. Basta, PhD is an Epidemiologist who combines expertise in epidemiology, biostatistics, immunology, population biology, ecology, and public health to design and evaluate preventive measures to reduce the burden of infectious diseases. Her research aims to quantify the impact of vaccines and vaccination programs, develop targeted vaccination strategies, increase vaccine acceptance, and improve vaccine uptake.

Kyle J. Burghardt, PharmD is an Assistant Professor of Pharmacy Practice at the Eugene Applebaum College of Pharmacy and Health Sciences at Wayne State University. After completing his PharmD at the University of Michigan he completed a 3-year postdoctoral fellowship in pharmacogenomics and psychiatry with Dr. Vicki Ellingrod. He currently directs a pharmacogenomics lab at Wayne State University and studies the skeletal muscle and adipose molecular mechanisms of antipsychotic-induced insulin resistance. He teaches several courses in the pharmacy curriculum including psychiatry therapeutics, applied kinetics, and pharmacogenomics.

Jayne Danska, PhD is a Senior Scientist in the Genetics and Genome Biology Program of The Hospital for Sick Children, and a Professor in the Departments of Immunology and Medical Biophysics at the University of Toronto Faculty of Medicine. Dr. Danska's research interest is on the genetic and immunological basis of type 1 diabetes and on molecular mechanisms of acute lymphoblastic leukemia in animal models and in humans. She is currently the lead investigator on a Genome Canada project in type 1 diabetes and co-investigator on two collaborative projects on lymphoblastic leukemia. Dr. Danska has chaired and served on grant panels including the National Cancer Institute of Canada, the Canadian Institutes of Health Research, the Canadian Diabetes Association, and the National Institutes of Health (USA). Dr. Danska is a recipient of the NCIC Scientist Award and the Premier's Research Excellence Award.

Scott Hultgren, PhD is the Helen Lehbrink Stoeber Professor of Molecular Microbiology and Director of the Center for Women's Infectious Disease Research at Washington University in St. Louis, and a member of the National Academy of Sciences. He earned his PhD at Northwestern University and did postdoctoral training at Umeå University in Sweden.

David A. Hunstad, MD is Associate Professor and Chief of the Division of Pediatric Infectious Diseases at Washington University in St. Louis. Dr. Hunstad is an NIH-funded pediatric physician-scientist studying pathogenesis of Gram-negative bacterial infections and has contributed to the development of new mouse models for the study of sex differences in pathogenesis and host response to urinary tract infections.

Emeran A. Mayer, MD is a Professor of Medicine and directs the ORWH Specialized Center for Neurovisceral Sciences & Women's Health at the University of California, Los Angeles. He is a pioneer and a leading researcher in the role of mind-brain-gut interactions in health and chronic disease, with a particular interest in sex-related differences.

Margaret M. McCarthy, PhD received a PhD from the Institute of Animal Behavior at Rutgers University, did postdoctoral training at Rockefeller University, and was a National Research Council Fellow at NIAA before joining the faculty of the University of Maryland School of Medicine in 1993. She was a professor in the Department of Physiology before becoming the Chair of the Department of Pharmacology in 2011. She has received numerous awards and recognition for her mentoring of graduate students. Dr. McCarthy has a longstanding interest in the cellular mechanisms that establish sex differences in the brain. She uses a combined behavioral and mechanistic approach in the laboratory rat to understand both normal brain development and how these processes might go selectively awry in males versus females. She is currently President of the Organization for the Study of Sex Differences, Associate Editor of *Hormones and Behavior*, and serves on the Advisory Board of eNeuro. She also serves on the Board of Scientific Councilors of the National Institute of Mental Health and was named one of Maryland's Top 100 Women in 2009.

Virginia M. Miller, PhD is Professor of Surgery and Physiology and Director of the Women's Health Research Center at the Mayo Clinic. She was President of the Organization for the Study of Sex Differences, has received numerous awards, and actively advocates for the inclusion of sex and gender variables in basic and clinical research and medical curricula.

Anne Z. Murphy, PhD is an Associate Professor in the Neuroscience Institute at Georgia State University. Her NIH-funded research focuses on the impact of sex and age on pain and opiate responsiveness as well as the long-term consequences of early life experience on adult pain, stress, and immune response.

Brian Nieman, PhD is currently a Senior Scientist at the Mouse Imaging Centre of The Hospital for Sick Children and a Level 2 Investigator with the Ontario Institute for Cancer Research. He obtained his PhD at the University of Toronto and completed postdoctoral work at the New York University School of Medicine.

Anna Penn, MD, PhD is an Associate Professor, clinical neonatologist, and neuroscientist at Children's National Medical Center in Washington, DC. She directs the Board of Visitors Perinatal Neuroprotection Program and runs a research program focused on preterm brain injury in relation to placental function.

Michèle Ramsay, PhD is the Director of the Sydney Brenner Institute for Molecular Bioscience (SBIMB) and Professor in the Division of Human Genetics, University of the Witwatersrand, Johannesburg, South Africa. Research interests include African population diversity and its role in disease susceptibility. Dr. Ramsay also serves as the Principal Investigator of H3Africa Collaborative Center (AWI-Gen), President of the African Society of Human Genetics, supervisor, and mentor.

Barbara Stranger, PhD develops effective analytic approaches for large-scale analysis of human genomics data, particularly transcriptome and genetic variation data, in the context of health and disease. She applies systems biology methodologies to integrate data of different types to inform biology of complex traits.

Eugenia Trushina, PhD is Associate Professor in the Department of Neurology at the Mayo Clinic. Her interests include the role that mitochondria and cellular metabolism play in neurodegenerative processes related to Huntington's, Alzheimer's, and Parkinson's diseases, chemotherapy-induced peripheral neuropathy, multiple sclerosis, and neurodegeneration caused by environmental toxicants.

Lauren A. Weiss, PhD is a human geneticist with a strong interest in complex genetic mechanisms of autism spectrum disorders. She has a BS in human genetics from the University of Michigan, where she first developed her interest in autism genetics studying sodium channel subunit genes with Dr. Miriam Meisler. She earned a PhD in human genetics from The University of Chicago, where she first became interested in the role of gene-sex interaction in quantitative trait genetics with Drs. Carole Ober and Edwin H. Cook, Jr. She did a postdoctoral fellowship in psychiatric genetics jointly at the Massachusetts Institute of Technology and Harvard University with Drs. Pamela Sklar and Mark Daly, before joining the faculty at the University of California, San Francisco in 2008. Her laboratory in the Department of Psychiatry, the Institute for Human Genetics, and the Weill Institute for the Neurosciences utilizes analytical approaches and human iPSC models to understand the role of gene-sex interaction, gene-environment interaction, gene-gene interaction, and gene-phenotype relationships in autism and related traits.

MODERATOR BIOGRAPHIES

Rajeev K. Agarwal, PhD is a Senior Research Program Officer in the Office of Research on Women's Health (ORWH) at the NIH. He manages two flagship programs: Specialized Centers of Research (SCOR), a P50 program related to research on sex differences; and an Administrative Supplement program for research on sex/gender influences. He is also a Project Scientist in Environmental influences in the Child Health Outcomes (ECHO) program and represents ORWH in two Common Fund Programs: Human Health and Heredity in Africa (H3Africa); and Knockout Mouse Phenotyping (KOMP). Before joining ORWH, he was a Program Director in the Division of Cancer Treatment and Diagnosis (DCTD) at the National Cancer Institute, overseeing a P50 cancer research portfolio known as the Specialized Programs of Research Excellence (SPOREs). Dr. Agarwal has knowledge and expertise in immunology, molecular biology, autoimmune diseases, infectious diseases, biomarkers, and cancer research. He also has extensive experience as a grant administrator on complex

multicomponent research projects related to inter/multidisciplinary basic, clinical, and translational research.

Paul Barrett, PhD joined the Common Fund in the Office of Strategic Coordination (OSC) in 2016 as a Health Specialist. After receiving a BS in chemistry from SUNY Binghamton, Dr. Barrett worked as a laboratory technician at SUNY Stony Brook in a clinical research laboratory looking for novel, non-invasive biomarkers in bladder, prostate, and kidney cancers from human patients. Dr. Barrett continued his research career at Vanderbilt University, where he obtained a PhD in biochemistry. His work utilized nuclear magnetic resonance spectroscopy and other biochemical and biophysical assays to study the structure and function of membrane proteins and lipids in Alzheimer's disease. He then served as a Post-Doctoral Associate at the University of Pittsburgh, where he investigated how protein/protein interactions disrupt mitochondrial function and contribute to neuronal death in Parkinson's disease using in vitro and in vivo model systems. Dr. Barrett now works as a policy, planning, communication, and evaluation specialist for several NIH Common Fund programs.

Colin Fletcher, PhD supervises the Knockout Mouse Project (KOMP). KOMP aims to produce and phenotype a comprehensive collection of mouse KO strains, including cataloging sexual dimorphism. Dr. Fletcher received an AB from Dartmouth University and a PhD from the Rockefeller Institute. He has been working in the field of mouse genetics since 1989.

Judy Hewitt, PhD is Chief of the Research Resources Section in the Office of Biodefense, Research Resources, and Translational Research at the National Institute of Allergy and Infectious Diseases. Her group provides reagents, animal models, and screening for infectious diseases. In 2014-15, she served as point person for NIH's extramural policy to enhance reproducibility through rigor and transparency.

Jennifer L. Troyer, PhD is the Program Director at the National Human Genome Research Institute. As part of a team, she administers Human Health and Heredity in Africa (H3Africa), a Common Fund (trans-NIH) initiative that facilitates application of contemporary research approaches to the study of genomics and environmental determinants of common diseases with the goal of improving the health of African populations. Her research has ranged from cats to lions to humans, but is primarily focused on genetic variations in the virus and host that alter the outcome of infection. She has experience in leading genome-wide association studies and has participated in international consortium efforts to identify host restriction factors for HIV/AIDS.