Speaker Bios

Session 1

Krista Zanetti, Ph.D., M.P.H., R.D.N.

National Institutes of Health, Office of Nutrition Research

Dr. Krista Zanetti is a Program Director in the Office of Nutrition Research (ONR) in the Office of the Director at the National Institutes of Health. Prior to joining ONR, she was a Program Director in the Epidemiology and Genomics Research Program in the Division of Cancer Control and Population Sciences at the National Cancer Institute (NCI) where her primary focus was building infrastructure and capacity to support metabolomic epidemiology studies. Dr. Zanetti earned a Bachelor of Science degree in Clinical Dietetics and Nutrition from the University of Pittsburgh and a PhD in Nutrition from Cornell University. She was subsequently accepted into the NCI's Cancer Prevention Fellowship Program. During the first year of her fellowship, Dr. Zanetti earned a Master of Public Health degree focusing on Epidemiologic and Biostatistical Methods for Public Health and Clinical Research from Johns Hopkins Bloomberg School of Public Health. She then conducted primary research in the Laboratory of Human Carcinogenesis in the NCI's Center for Cancer Research focusing on the biological consequences of health disparities associated with colon and lung cancers and the association of common allele variants with colon cancer risk and prognosis.

Nicole Prince, Ph.D.

Harvard Medical School and Brigham and Women's Hospital

Nicole Prince, Ph.D. is a T32 Postdoctoral Research Fellow at the Channing Division of Network Medicine at Harvard Medical School (HMS) and Brigham and Women's Hospital (BWH). She is an analytical chemist by training, and her current research focuses on applying metabolomic epidemiology to understand the complex landscape of immune development during the first years of life. Her work has applied integrative 'omic and subtyping analytic approaches to identify vulnerable subsets of children susceptible to co-occurrence of asthma, atopic disease, and recurrent infections. Nicole also serves as the co-lead of the Infectious Disease Interest Group (IDIG) of the COnsortium of METabolomics Studies (COMETS) and Vice Chair for the Metabolomics Association of North America (MANA) Early Career Members (ECM) council.

Chiraag Gohel

George Washington University

Chiraag Gohel is a Ph.D. student in the Department of Biostatistics and Bioinformatics at The George Washington University. His current research focuses on the development of statistical and algorithmic software tools for the combination, batch correction, and normalization of multiple LC-MS metabolomics datasets. He is the main developer of massSight, an R package for the alignment and scaling of LC-MS metabolomics data. He is additionally working with NCATS on the development of software for efficiently determining consensus annotations for sets of metabolite profiles. He received his B.A. in Statistics from Carleton College (2020).

Ewy Mathé, Ph.D.

National Institutes of Health, National Center for Advancing Translational Sciences

Dr. Ewy Mathé is the Director of Informatics in the Division of Preclinical Innovation at NCATS. She received a Bachelor's degree in Biochemistry (minor in Sociology) from Mount Saint Mary's

University, MD in 2000 and a PhD in Bioinformatics from George Mason University, VA in 2006. During her post-doctoral training with Dr. Curtis Harris (NCI/NIH), she discovered putative esophageal and lung cancer biomarkers using miRNA microarrays and metabolomics, leading to two patent applications. She then joined Dr. Rafael Casellas' laboratory (NIAMS/NIH), where she aimed to better understand modalities of transcriptional regulation in B lymphocytes, using next-generation sequencing techniques. Since then, she has focused on developing methods and frameworks to guide analysis, integration, and interpretation of high-throughput sequencing and multi-omic data to uncover biological mechanisms and identify valid biomarkers and therapeutic targets for the diagnosis, prognosis, and treatment of various diseases. She is very active in the metabolomics community (Metabolomics of North America, Metabolomics Society, Consortium of Metabolomics Studies) and is a proponent of open-source software development and data.

As Director of Informatics, she leads a diverse team of experts in bioinformatics, cheminformatics, data science, and software development that empower translational scientists to make meaningful data-driven decisions in their research. Her team's mission is to derive actionable insights from translational research data by developing computational resources, methods and tools, including AI/ML. To this end, the group optimizes the use of large scale molecular (high throughput screening, multi-omics, etc.) and knowledge-driven datasets (various sources of information on drugs, including mechanisms of action, regulatory status, etc., drug targets, diseases, biological functions, etc).

Session 2

Su Chu, Ph.D.

Harvard Medical School and Brigham and Women's Hospital

Dr. Su H. Chu is an Instructor in Medicine at Harvard Medical School (HMS) and an associate statistician at the Brigham and Women's Hospital. A biostatistician and molecular epidemiologist by training, her current research focus revolves around characterizing the integrative metabolomic landscape of asthma and ADHD comorbidity observed in childhood and across the lifecourse, with special attention to how social determinants of health and immune dysregulation interact to affect 'omic pathways to health and disease. She has developed novel methods for integrative multiomic gene set analysis, and led one of the first epigenome-wide applications of mediation analysis. Dr. Chu also serves on the Executive Steering Committee of the Consortium of Metabolomics Studies (COMETS; supported by the National Cancer Institute), and chairs its Statistics Interest Group. She serves as a Co-Director for multiple clinical research educational programs and courses at HMS, including the Global Clinical Research Scholars Training Program and in the Masters of Medical Sciences.

Rachel Kelly, Ph.D.

Harvard Medical School and Brigham and Women's Hospital

Rachel Kelly is an Assistant Professor of Medicine and Associate Epidemiologist at the Channing Division of Network Medicine (CDNM), Department of Medicine at Brigham and Women's Hospital and Harvard Medical School. Her principal effort is in metabolomic epidemiology and integrative metabolomics as a means to better understand common complex disorders. Dr Kelly completed her PhD in molecular epidemiology at Imperial College London before moving to Boston to undertake postdoctoral training at the Harvard TH Chan School of Public Health and the CDNM, transitioning to faculty in 2017. Dr Kelly currently serves as Chair of the American Thoracic Society (ATS) Genetics and Genomics Section, and Vice Chair of the International COnsortium of METabolomics Studies (COMETS), she is also a founding member

of Metabolomic Epidemiology task force of the International Metabolomics Society, and lead of the STROBE Metabolomic Epidemiology Initiative. Dr Kelly plays an active role in the teaching of molecular epidemiology and metabolomic epidemiology, developing courses and programs within the Harvard network, nationally and internationally, and is passionate about the dissemination of these disciplines.

Waylon Hastings, Ph.D.

Tulane University

Dr. Waylon J. Hastings is a National Institute on Aging-supported Postdoctoral Research Scientist in the Behavioral and Neurogenetics Laboratory at Tulane University School of Medicine and prospective Assistant Professor in the Department of Nutrition at Texas A&M University (Fall 2024). He earned undergraduate degrees in Biochemistry, Genetics, and Mathematics from Texas A&M University (2013) and a Ph.D. in Biobehavioral Health and Bioethics from Pennsylvania State University (2020). Collaborating with the Telomere Research Network, CALERIE™ Clinical Trial, and COnsortium of METabolomics Studies (COMETS), he works to develop, improve, and validate methods to measure 'biological age' and functional decline in humans. He also researches how stress and metabolism impact the ability of these measures to answer questions about mechanisms of aging. His work has been highlighted by Science Daily and the American Council for Science and Health. Dr. Hastings' mission is to develop efficient methods to measure individual differences in aging. In doing so, he aims to improve the effectiveness of interventions aimed at increasing healthspan.

Demetrius Albanes, M.D.

National Institutes of Health, National Cancer Institute

Dr. Albanes is a Senior Investigator in the Metabolic Epidemiology Branch of the NCI Division of Cancer Epidemiology and Genetics. He received a B.S. in biology from SUNY Stony Brook and his M.D. degree from the Medical College of Wisconsin. Dr. Albanes entered the Epidemic Intelligence Service of the CDC through which he began working in the cancer prevention program of NCI. He serves as principal investigator of the landmark Alpha-Tocopherol Beta-Carotene Cancer Prevention (ATBC) Study vitamin supplementation trial which showed significant effects of beta-carotene on lung cancer and mortality and vitamin E on prostate cancer.

Dr. Albanes conducts a molecular epidemiologic program that is focused on prostate cancer (including especially in higher-risk Black men) and other cancers in relation to micronutrients (particularly vitamins D, E, and A), vitamin supplementation, and metabolite profiles through biochemical, genetic, and mechanistic investigations. His recent prospective metabolomics studies have discovered novel serologic profiles for prostate cancer, glioma, and vitamin supplementation and serum status. For example, he initiated a program to investigate prospective serum metabolites associated with cancer risk and found strong inverse associations between energy and lipid metabolites and aggressive prostate cancer, including the TCA cycle compounds AKG and citrate. Based on his multi-cohort study in COMETS, glioma risk was significantly related to the sphingomyelin pathway. Dr. Albanes also studies serum metabolite responses to vitamin supplementation, showing dysregulation of xenobiotic metabolism (beta-carotene) and androgens (vitamin E), and profiling of vitamin serologic status found novel markers including CMPF, EPA, and DHA for vitamin D. Such findings have provided new biological clues relevant to the role of vitamins in human carcinogenesis. Dr. Albanes also contributes to large international cancer consortia that identify low-penetrance genetic variants associated with cancer risk, and he has applied these GWAS data to Mendelian randomization studies of serum vitamin status and supplementation.