



GULF COAST CENTER
**PRECISION
ENVIRONMENTAL
HEALTH**

NIEHS EHSCC MEETING SPEAKERS

2023

Plenary Session C: Multi-Omic Approaches to Precision Environmental Health



Dr. Meller is an expert in bioinformatics, biomedical data science and applications of machine learning techniques in biomedicine. Methods and web servers developed by his group have been used by over 100,000 users from >100 countries. He has over 10,000 citations and h-index of >45 in Google Scholar. Dr. Meller currently holds academic appointments in the Department of Environmental and Public Health Sciences, University of Cincinnati College of Medicine, Department of Computer Science, University of Cincinnati College of Engineering and Applied Sciences, and Division of Biomedical Informatics, Cincinnati Children's Hospital Medical Center.



Carolyn M. Klinge is a Professor of Biochemistry and Molecular Genetics at the University of Louisville School of Medicine. Her current research examines how chemical modifications in RNA (the epitranscriptome) regulate biological pathways in steatotic liver disease (SLD) and endocrine therapy resistance breast cancer. In collaboration with Matthew Cave, changes in the liver epitranscriptome were identified in a mouse SLD model after exposure to polychlorinated biphenyls (PCBs) that is modified by diet. She has expertise in sex-related, endocrine-based disease, teaches grad and MD students, is a faculty rep. on the UofL Athletic Assoc. Board, and is Editor of *Mol. Cell. Endocrinol.*



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Dr. Cristian Coarfa earned his B.Sc in 1998 from POLITEHNICA University, Bucharest and a Ph.D. in 2007 from Rice University, both in Computer Science. He is an Associate Professor and Co-Director for Multi-Omic Data Analysis at the Dan L Duncan Comprehensive Cancer Center at Baylor College of Medicine. His focus is on achieving biological insight via integrative multi-omic data analysis, including metabolomics, transcriptomics, and epigenomics. His work yielded clinically distinct Tuberculosis molecular endotypes, and epigenomics risk factors of liver disease after carcinogen exposure.



Douglas Walker, PhD, is an Associate Professor in the Gangarosa Department of Environmental Health at Emory University, where he leads the Comprehensive Laboratory for Untargeted Exposome Science (CLUES). He is an environmental engineer and analytical chemist with training in metabolomics and developing EWAS (exposome-wide association study) methodologies for environmental health and precision medicine research. Dr. Walker's research focuses on continued development and application of advanced analytical strategies for measuring the occurrence, distribution and magnitude of previously unidentified environmental exposures and assisting in delineating the mechanisms underlying environment-related diseases in humans. The approaches he developed show it is possible to measure over 100,000 chemical signals that include exposure biomarkers, nutrients, dietary chemicals and associated biological response in a high-throughput and cost-effective manner, establishing a foundation for operationalizing the exposome framework for precision medicine. Ongoing research projects are now focused on using high-throughput exposome methods to establish disease-exposome atlases, and development of methods for measuring biomarkers of complex exposures of emerging concern, including microplastics, e-waste and polyfluorinated chemicals.