

Yale Imaging Mass Spectrometry and Omics Symposium
November 22, 2019
Department of Environmental Health Sciences
Yale School of Public Health

Modern mass spectrometry imaging technologies permits high-resolution spatial localization of metabolites, proteins and drugs within intact tissue sections, single cells and many other biological surfaces. It holds significance promise in augmenting the spatial fidelity of classical histology by generating highly robust big data about the metabolic, lipidomic and proteomic content of the samples. A single MSI experiment produces tissue images of hundreds to thousands of molecular species. With the use of machine learning technologies, it is possible to determine the molecules that correlate with tissue pathology, cell type, drug distribution and/or toxicity. MSI technologies have a particular translational relevance to cancer research where molecules and pathways can be characterized in tumor cells and their microenvironment, allowing direct therapeutic effects to be assessed. Please join the Yale School of Public Health for this symposium, that will explore advances and challenges in analytical and computational tissue imaging mass spectrometry.

Richard A. Caprioli, Vanderbilt University, "Imaging Mass Spectrometry: Molecular Microscopy for Next Generation Research in Biology and Medicine"

Presha Rajbhandari, Columbia University "Imaging Mass Spectrometry to Study Drug Distribution and its Effect in Tumors"

Erik N. K. Creesman, MD Anderson Cancer Center, "Mapping Imaging-guided Chemistry: the Potential of Mammalian Reagents"

Vasilis Vasiliou, Yale School of Public Health, "Redox-lipidomics and Imaging Mass Spectrometry for Alcoholic Liver Disease"

Thomas Roddy, Agios Pharmaceuticals, "An Industry Perspective on Metabolomics for Drug Discovery"

Caroline Johnson, Yale School of Public Health, "Metabolomics Analysis of Colorectal Tumors Reveals a Sex-specific Metabotype"

Steve Martin, Waters Inc, "Current Status, Future Directions of Ambient Ionization Mass Spectrometry @ Waters"

Kirill Vesselkov, Imperial College London, "Network-based Machine Learning: Leveraging Molecular Imaging and Omics Data in the Fight against Cancer"

Lana Garmire, University of Michigan, "Pathway-based Approaches to Identify Metabolomics Biomarkers"

Naftali Kaminski, Yale School of Medicine, "Lessons from Single Cell Profiling in Lung Health, Aging and Disease"