

MULTIMODAL IMAGING MASS SPECTROMETRY

Advanced Technologies for Highly Multiplexed Molecular Imaging

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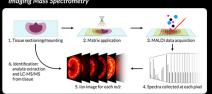
RESEARCH FOCUS: Development of next-generation imaging mass spectrometry technologies to elucidate the molecular basis of health and disease.

- Developing novel MS technologies that maximize sensitivity, specificity, and spatial resolution for imaging applications.
- . Combining imaging MS with a variety of other biomedical imaging technologies to provide a systems biology view of tissue at cellular resolution.

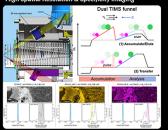
CURRENT & FUTURE RESEARCH PROJECTS: IMS Instrumentation, Spatial Proteomics, Spatial Transcriptomics, MxIF Microscopy, Ion Mobility IMS, Data Integration & Mining, Host-Pathogen Interactions, Gut Microbiome, Osteomyelitis, Human Molecular Tissue Atlases, Diabetes, Kidney Disease

TECHNOLOGY DEVELOPMENT

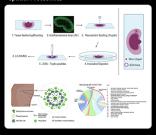
Imaging Mass Spectrometry



High Spatial Resolution & Specificity Imaging



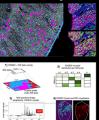
Spatial Proteomics



MxIF & Spatial Transcriptomics

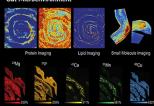


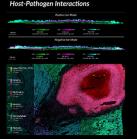
Multimodal Data Integration & Mining



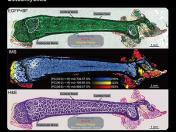
BIOMEDICAL RESEARCH APPLICATIONS

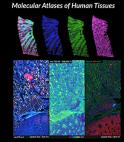
Gut Microenvironment



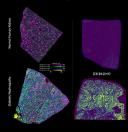


Osteomyelitis





Diabetes & Kidney Disease





Bruker SolariX 9.4T FT-ICR MS Thermo Orbitrap Fusion Tribrid MS Thermo Orbitrap Elite (TG/MALDI-2) Thermo Orbitrap Q-Exactive

Bruker MALDI timsTOF Prototype Bruker MALDI timsTOF Flex (MALDI-2) Bruker Rapiflex MALDI Tissuetyper Bruker Autoflex TOF MS Bruker Ultraflex TOF MS

Bruker Impact II O-TOF Waters Synapt G-2 TWIMS Thermo MALDI LTQ XL SimultTOF 300 Tandem ThermoElement 2 LA-ICP

Nanostring GeoMX DSP (Spatial Transcriptomics) Zeiss Axio Observer Z1 Fluorescence Microscope Zeiss Axio Scan Z1 Fluorescence Slide Scanner Akoya CODEX Highly Multiplexed IF Platform Leica LMD7 Laser Microdissection System

