

Research Mass Spectrometry and Proteomics Core

The Research Mass Spectrometry and Proteomics Core (RMSPC) provides access to advanced analytical equipment for quantitation, structural analysis, proteomic analysis, and protein characterization. The core can assist in sample preparation, method development, data acquisition, and data analysis. Located in room 074 of the BBSRB, is an approximately 2,000 sq. ft. purpose-configured laboratory. Analytical services offered by the RMSPC include small molecule analysis, proteomics, lipidomics, and metabolomics. Core instrumentation, housed in separate rooms for most systems, includes a broad range of mass spectrometer systems and equipment for sample processing and preparation. A common area is equipped for bench work, including sample preparation. Data analysis workstations and software are also available. Instrumentation includes the following:

- **Thermo Scientific Orbitrap Exploris 240 mass spectrometer** providing high sensitivity and high mass resolution for quantitative and qualitative analysis. The system is configured for use with a Thermo Scientific Vanquish Horizon UPLC chromatography system and is interfaced with a workstation computer running software for instrument control, data acquisition, and analysis.
- **Thermo Scientific TSQ Altis Plus Triple Quadrupole mass spectrometer** providing high sensitivity and high mass resolution for quantitative and qualitative analysis. The system is configured for use with a Thermo Scientific Vanquish Horizon UPLC chromatography system and is interfaced with a workstation computer running software for instrument control, data acquisition, and analysis.
- **Thermo Q Exactive Hybrid Quadrupole-Orbitrap mass spectrometer** system that provides high sensitivity and high mass resolution for quantitative and qualitative analysis. The system is configured for use with a Thermo/Dionex U3000 UPLC chromatography system and is interfaced with a workstation computer running software for instrument control, data acquisition, and analysis including Thermo Compound Discoverer and Lipid Search Software.
- **Thermo TSQ Vantage Triple Quadrupole mass spectrometer** system is available for use primarily as a training station for users interested in learning method development, acquisition, and data analysis.

Two workstation computers run instrument control software and software packages for data analysis that are available for off-line processing of data. Proprietary and open-source software packages are available for compound identification, metabolomics, and lipidomics. All computer systems have redundant hard drives and are networked for data transfer and backup.

Updated September 2023