### Emory Integrated Metabolomics and Lipidomics Core - FACILITIES & OTHER RESOURCES

**FACILITIES & OTHER RESOURCES**

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Fields Relevant for the Emory Integrated Metabolomics and Lipidomics Core (EIMLC)

The **Emory Integrated Metabolomics and Lipidomics Core (EIMLC)**, one of the **Emory Integrated Core Facilities (EICF)** performs quantitative metabolomics and lipidomics analyses on samples from a wide variety of biological matrices (e.g. blood, serum, plasma, solid tissues, cell extracts, etc.) to support both clinical and basic research efforts on campus and in the broader research community. These analyses provide insights into lipids and lipid precursors whose abundance can be monitored as biomarkers to predict and follow progression of a wide range of diseases, such as metabolic disorders (e.g. obesity, type II diabetes, and NAFLD), neurodegenerative diseases (e.g. Alzheimer’s Disease and Parkinson’s Disease), and cancer (e.g. prostate and breast cancer). In addition to lipidomics assays, EILMC capabilities also include targeted and untargeted metabolomics as well as quantitative, plate-based metabolomics, Biocrates Quant500.

The EIMLC is located in Rms. 4075, 4071, G240 and G241 in O. Wayne Rollins Research Center and has 1125 square feet of dedicated wet-lab space. The EIMLC also has a 240 sq ft dedicated office adjacent to the laboratory space on the 4th floor of the O. Wayne Rollins Research Center, which provides space for computational services and customer consultations.

The EIMLC lab houses a Sciex QTrap5500 enhanced high performance hybrid triple quadrupole/linear ion trap LC/MS/MS mass spectrometer with mass range of *m/z* 5 to 1250 in triple quadrupole mode, and 5-1000 in LIT mode. For high resolution mass spectrometry, the EIMLC utilizes a Thermo ID-X tribrid mass spectrometer that boasts resolution up to 500,000 FWHM and scan speeds up to 30Hz.  Both mass spectrometers feature linear ion traps, permitting MSn studies that aid in the unambiguous characterization of low abundance species. Each mass spectrometer is paired with a complimenting HPLC/UHPLC - the ExionLC AC HPLC/UHPLC system and Vanquish UHPLC, respectively. Data analysis is done using a 44 core Xenon workstation with 196 GB of RAM for processing large datasets. Computer workstations with lipid processing software, such as LipidView (Sciex), MultiQuant (Sciex), LipidSearch (Thermo), and Compound Discover (Thermo), are also available. Minor equipment includes -80 °C freezers, nitrogen evaporators, Biotge Extrahera; a robotic SPE instrument for fully automated specialized lipid extractions, a table top centrifuge, a fume hood, rockers, analytical balances, and multisample vortexers. The EIMLC has computers networked locally with internet-accessible ethernet lines and to a dedicated 24 Tb backup drive (Synology DiskStation). The EILC office is outfitted with three Dell OptiPlex 9020 computers with dual 24” monitors for data processing and 1TB external storage for local backup.