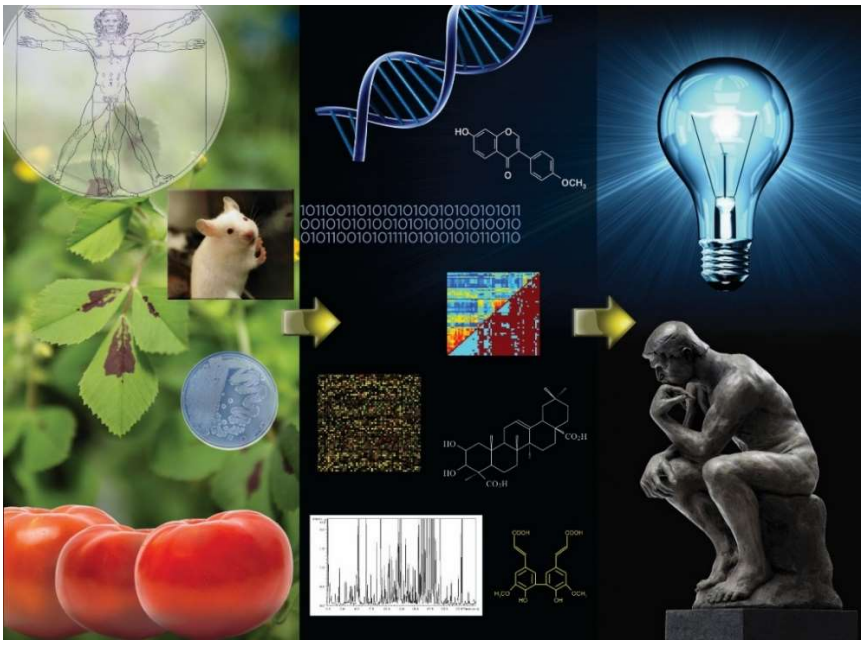
MU Metabolomics Workshop

Aug 12 - 16, 2024



Learn how to measure and process metabolic profiles of your samples using high resolution chromatography coupled to mass spectrometry in this 5-day workshop. This will include hands-on sample preparation, derivatization, data acquisition and data analysis. The workshop will take place Mon – Fri in the Bond Life Sciences Center.

Cost: $500 for University of Missouri participants
$650 for non MU academic institution participants
$1,300 for industrial participants

Fees include costs for 3 samples supplied by the MU Metabolomics Center; users can bring their own additional samples at additional costs.

Hosted by Drs Zhentian Lei, Barbara Sumner and Lloyd W. Sumner

Contact Dr. Barbara Sumner, sumnerb@missouri.edu, to register or for additional details.

Space is limited, so reserve your space now!

Metabolomics Center
University of Missouri

243 Bond Life Sciences Center
1201 Rollins St
Columbia, MO 65211

Metabolomics Workshop

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University of Missouri Metabolomics Center

Introduction: The purpose of the MU Metabolomics Center (MUMC) Workshop is to provide hands-on user training in metabolomics sample preparation (sample extraction, derivatization), data acquisition and instrumental analyses via GCMS and LCMS, and data processing (peak detection, deconvolution, alignment, annotation and quantification).

The MUMC will provide 3 lyophilized, ground and weighed plant tissue samples for hands-on practice and training. However, users can bring their own samples if they would like which can serve as important preliminary data for proposals. If you plan to bring your own samples, please consult with Dr. Zhentian Lei or Lloyd Sumner prior to the workshop. If participant prefers to bring his/her own samples, please lyophilize, grind and weigh them (10 ± 0.06 mg) ahead of time. Frozen, wet tissues can also be performed but need to be larger, i.e. 100 mg.

The analyses costs for three samples are provided in the general workshop fees but users can bring additional samples at additional costs if they would like. Due to restrictions in equipment capacity and time during the workshop, participants are limited to 6 samples total, but larger sample sets can be analyzed following the workshop. Three replicates of each sample are required for proper statistical analysis, so 6 samples would be 3 biological replicates of one sample type and 3 biological replicates of another sample type.

All workshop activities will be held in the Bond Life Sciences Center, 1201 Rollins, Columbia, MO. Lectures will take place in rooms 107 and/or 171. Hands-on experiments will be in room 243. Some of the data analysis sessions may take place in room 272 or in the 2nd floor study area.

Workshop Pre-Meetings will be held on **Thursday, Aug 1** and on **Friday, Aug 2** (place TBD). **It is required for participants to attend one of these two meetings!** The purpose of the workshop pre-meeting is to discuss sample prep needs for the workshop (especially for those who plan to bring their own samples), to load necessary software onto your laptops, and to answer any questions.

Participants need to bring a laptop computer with them to perform data processing and analysis. The MUMC will NOT provide computers. Evaluation of the processed data including statistical analysis and evaluation using MetaboAnalyst (online) will be performed during the workshop. The free software listed below is required for the Advanced Data Processing and Analysis and needs to be installed before those sessions. **Note that Mac computers are not compatible with this software.**

1. AMDIS (Automated Mass spectral Deconvolution and Identification System) is used for GC-MS data processing. http://chemdata.nist.gov/dokuwiki/doku.php?id=chemdata:amdis
2. MET-IDEA (Metabolomics Ion-Based Data Extraction Algorithm is used for GC-MS peak quantitation. https://sumnerlab.missouri.edu/download/
3. MS DIAL for LC-MSMS data processing with identifications. Download the main program and also the file converter. http://prime.psc.riken.jp/Metabolomics_Software/MS-DIAL/