ONE-DAY COURSE, Sunday only
19 Advanced Metabolomics: Bioinformatics, Activity, and Pathways

Instructors

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The field of metabolism has had resurgence due to major technological advances in mass spectrometry, which has enabled new insights into the involvement of metabolites in biological processes and enzymatic pathways. It is one of the fastest growing areas of science today and its primary analysis tool is mass spectrometry. The *Advanced Metabolomics* course will complement the other ASMS *Metabolomics* short course going into greater depth on key informatic topics that are critical to scientists trying to establish themselves in the field. Topics include metabolomics activity screening, assessing statistically relevance, pathway analysis, and systems biology guided by metabolomics.

COURSE OUTLINE

- Metabolomics Activity Screening
- Metabolite Databases, In Silico Data, and Scoring Algorithms
- Data Pre-Processing
- Statistical Analysis: from PCA to Cloud Plots
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- Hands On - Data Processing and Statistical Relevance
- Network Analysis: From metabolites to pathways
- Pathway-based multi-scale data integration
- Making sense of temporal data
- Metabolite-Induced Protein Expression
- Informatic options for global isotope metabolomics
- Systems biology