

**TWO-DAY COURSE, Saturday and Sunday  
Native Mass Spectrometry**

**Instructors**



Vicki Wysocki  
Ohio State University



Michael Marty  
University of Arizona



Brandon Ruotolo  
University of Michigan



David Russell  
Texas A&M University



Arthur Laganowski  
Texas A&M University

**Introduction:** Native mass spectrometry is a growing area in the mass spectrometry community. Native MS is making significant contributions to structural biology and because of its ease of application and broad applicability, often leads and guides an integrated approach that eventually uses other structural biology tools. This course is designed to introduce the broad field to new practitioners of native MS.

**Topics to be covered include**

- sample preparation for native MS
- instrumentation used for native MS - how does it differ from other MS
- spray conditions to keep soluble complexes native
- spray conditions for membrane protein complexes (micelles, liposomes, nanodiscs)
- activation methods for native MS (CID, CIU, SID, UVPD, ETD/ECD/EID)
- complementary methods (HDX, covalent labeling, crosslinking, top-down MS)
- ion mobility for native MS
- online separations approaches coupled to native MS (IEX, SEC, CE)
- software tools for native MS (Unidec, Impact, Pulsar, EMnIM, DynamXL, XLinkX, iFAMS)
- case studies for protein:protein, protein ligand, RNA: protein, DNA:protein, and membrane protein complexes

**Prerequisites:** Basic knowledge of mass spectrometry, including familiarity with ESI and mass analyzers