



## **Prof. Sarah Trimpin Wayne State Univ.**

### **“Fundamentals and Applications of Matrix-assisted Inlet Ionization Mass Spectrometry”**

The organizing theme for our research is the exploration of approaches to chemical analyses that avoid the use of solvents to the greatest extent possible. This new area of research, which we term *total solvent-free analysis*, has yielded novel methods in sample preparation, ionization, separation, and mass spectrometry (MS) analysis. While solvent-based approaches are ideal for many types of chemical analysis, there is a host of reasons for developing methods that avoid solvents. The justification for exploring solvent-free approaches to chemical analysis relate to several factors that include: 1) the need to perform chemical analysis on molecules that are difficult or impossible to solubilize, known collectively as the "insolubleome"; 2) the need to avoid chemical reactions that can spontaneously change the structures of certain types of molecules when they are in solution; 3) the need to address problems associated with extreme loss of certain analytes in solution during sample preparation; and, 4) diffusion of analytes within a complex matrix such as tissue sections for MS imaging, where spatial distribution of analytes is a major variable in the analysis.

# **ANALYTICAL SEMINAR**

**Thursday, March 31<sup>st</sup> at 12:15 p.m.  
in Seminar Hall (1315 Chemistry)**