# Department of Chemistry
# Analytical Division
# Seminar Announcement

## Dr. Timothy Garrett, Assistant Professor
**Department of Pathology, Immunology, and Laboratory Medicine**
**Director of SECIM Core 1**
**University of Florida**

## Date: Wednesday, January 6, 2016
## Location: Leigh Hall 207
## Time: 4:00pm-5:00pm

## "Global metabolomics: from a chemistry tool to clinical diagnostics"

Metabolomics is a routine clinical diagnostic approach to understanding patient disorders. Clinically available metabolic tests have measured compounds of a single class such as amino acids, organic acids or acylcarnitines as small panels of metabolites or as individual compounds. These tests were made possible by the use of mass spectrometry and a colleague once said that "we are approaching a near zero false discovery rate" when discussing how fundamental mass spectrometry is to clinical diagnostics. Global metabolomic profiling (including lipidomics) is an attempt to measure metabolism in a new way by finding patterns or key sets of metabolites that correlate to a disease or disorder. This is made possible by utilizing high resolution/high mass accuracy mass spectrometry to measure thousands of metabolites from a small drop of blood. However, global metabolomic profiling is limited to research only projects because of the nature by which we measure the metabolome.

Currently, measuring the metabolome requires batching of controls with the set of samples from the experimental group and measuring them as a set. This is typical for any research type project as it helps to reduce error from day-to-day fluctuations of the instrument, column, or lab area, which then aids in finding the metabolites that describe the disorder not the day of analysis. This batch-mode approach limits translation to clinical diagnostics. In a clinical lab, the samples must be run as they come in not when we have a set of samples from a group of like individuals.

At UF, I am working with the Clinical and Translational Science Institute (CTSI) to translate Global Metabolomic profiling to clinical diagnostics. I will discuss the opportunity that Global Profiling can have in clinical diagnostics and the plan for translating this research tool to a robust and reliable clinical assay.

**Refreshments served at 3:50pm**