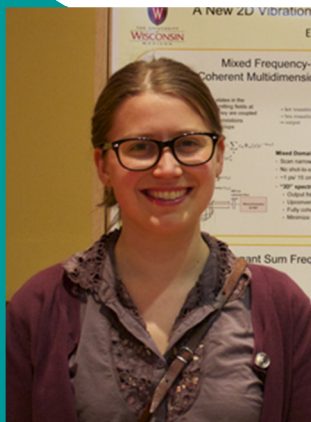


ANALYTICAL SEMINAR

Date: Thursday, April 24, '14

Time: 12:15 pm, 1315 Chemistry



Erin Boyle

UW Madison, Wright research group

A New 2d Vibrational Spectroscopy:

The Resonance-IR Analogue to Resonance Raman

The discovery of the resonance Raman effect was a critical advancement for Raman spectroscopy. By using an excitation source resonant with an electronic state coupled to the vibrations of interest, the Raman intensity of those vibrations could be increased by many orders of magnitude. This allowed resonance Raman to become an important technique in inorganic and bioinorganic spectroscopy, where the metal centers confer unique electronic states to the active site of interest. However, many molecules have enough symmetry for vibrational modes to have very different Raman and infrared activities, leaving some vibrations of interest weak in resonance Raman. The technique presented here allows electronic enhancement for IR-active modes. It is also a 3-color experiment, which allows for greater selectivity in what subset of the sample you probe. I will describe the behavior of this "triple sum frequency" technique for three different cases. Progress in application of the technique to protein-relevant systems will be discussed.

