## Glenn T. Seaborg Center Seminar

# *Chemistry of Ions in Mass Selected Aqueous Nanodrops*


## *Evan R. Williams*

**Department of Chemistry, University of California, Berkeley, CA**


**Wednesday, April 25, 20112**
**4:00 - 5:00 pm**
**Building 70A, Room 3377**


Mass spectrometry is often the method of choice for solving difficult problems in chemical analysis owing to its high sensitivity, specificity, and applicability to complex mixtures. Although predominantly used for molecular identification and characterization via fragmentation methods that characterize bond connectivity, new and emerging methods in mass spectrometry make it possible to characterize noncovalent interactions, ranging from specific protein or other macromolecular complexes, too much weaker nonspecific solvent-solvent interactions in clusters. These methods, including ion mobility, spectroscopy and nanocalorimetry, will be briefly reviewed and studies of ions contained in aqueous nanodrops will be presented. These studies provide new information about how ions affect the hydrogen-bonding network of water molecules, even for those water molecules that are remote from the ion, and how water interacts with, and affects, the structures of ions themselves. Effects of water on both the electrochemical and photo-physical properties of ions will be shown. From these studies on gaseous nanodrops, fundamental information about the solution-phase properties of ions, such as their inner shell coordination numbers and absolute electrochemical half-cell reduction potentials can be obtained.



Host: John K Gibson (510) 486-7891 JKGibson@lbl.gov Admin. Asst: Catherine Mendez (510) 486-5587
Ernest Orlando Lawrence Berkeley National Laboratory, One Cyclotron Road, Berkeley, California 94720