**Probing Intra- and Inter- Molecular Interactions *via* Mass Spectrometry, Infra-red Multiple Photon Dissociation and Computational Chemistry**

**Abstract**

Experiments will be described using High Pressure Mass Spectrometry (HPMS), Fourier Transform Ion Cyclotron Resonance Spectrometry (FTICR) and Infrared Multiple Photon

Dissociation (IRMPD) to examine a number of ion-molecule clustering reactions.  These experiments are accompanied by electronic structure calculations which aid in the identification of fine details of molecular structure of the species formed in these experiments. The species examined include amino acids, small peptides and some novel complexes involving molecules with very large dipole moments.