

# Physical Chemistry Seminar

Tuesday,  
September 18, 2012

11:00 am

Room 1315  
Chemistry Building

## Water and light in environmental chemistry on contemporary and ancient Earth



Professor Veronica Vaida  
*Department of Chemistry and Biochemistry*  
*University of Colorado-Boulder*

Host: Professor Etienne Garand

This presentation summarizes studies of water and photon mediated chemistry relevant to planetary atmospheres. Water mediated thermal and photochemical reactions of organic molecules important in aerosol particle formation and chemistry are investigated by experimental and theoretical methods. Organic species undergoing reactions at aqueous surfaces are studied with spectroscopic techniques and used as models for processes occurring in the natural environment. Chemistry unfavorable in bulk aqueous environments can occur at water surfaces as illustrated with formation of peptide bonds on aqueous solutions. Recent results describing the role of aqueous surfaces as would occur at the sea surface and on the vast surface of the global atmospheric aerosol will be presented. Implications of these water and light mediated processes in atmospheric chemistry and climate on the contemporary and prebiotic Earth will be discussed.

Refreshments will be available prior to the seminar at 10:45 a.m. outside room 1315

Graduate Students may meet with the speaker at 1:00 p.m. in Room 8335