

**PHYSICS & ASTRONOMY COLLOQUIUM
UNIVERSITY OF WISCONSIN – STEVENS POINT**

**FRIDAY, November 6, 2015
2:00 PM
ROOM A109 SCI**

Dr. Dan Albert

Department of Chemistry, University of Wisconsin-Stevens Point

**Chemical Reactions that Lead to Soot
Formation and Reactions on Soot Particles**



Dan Albert

ABSTRACT: Soot particles, formed during combustion of fossil fuels, influence human health, environmental processes, and industrial processes. Predicting the growth of soot particles in combustion environments and how those particles interact with other molecules is crucial to understanding the impact soot will have on human health and atmospheric chemistry. Prototypical combustion reactions for the early building blocks of soot have been studied using crossed molecular beam scattering studies of phenyl radicals with other chemical species. The crossed molecular beam studies were carried out using “soft” ionization via resonant-enhanced four-wave mixing of nanosecond lasers in mercury vapor. In addition to the studies probing the early steps of soot formation, experiments probing reactions of gas-phase molecules on soot particles, currently underway at UWSP, will be discussed. The UWSP gas-soot experiments aim to characterize how varying chemical functional groups on the surface of soot particles influence chemical reactions of gas-phase molecules taking place on soot particles.

ABOUT THE SPEAKER: Dan Albert is an Assistant Professor in the Department of Chemistry at the University of Wisconsin-Stevens Point. Before beginning his position at UWSP in the fall of 2013, Dan received his Bachelors from Ohio Wesleyan University in 2007, earned a Masters from the University of Wisconsin-Madison in 2008, and earned a Ph.D. from Cornell University in 2013. Dan’s research prior to coming to UWSP focused on using molecular beam scattering to characterize chemical reactions. Dan’s current research interests involve investigating chemical reactions taking place on aerosol particles and how molecules on the surface of these particles influence their reactivity.

*Faculty, staff and students are cordially invited to attend.
Refreshments will be served beginning at 1:45 pm*