



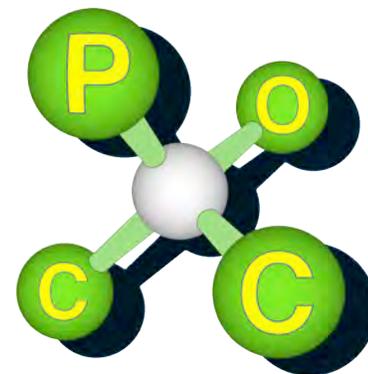
## 2007-2008 POCC Lecture Series

May 8, 2008, 8:00 PM

**Prof. Jeffrey Bode**  
University of Pennsylvania

### ***Organic Redox Reactions for Chemoselective Ligations and Enantioselective Annulations***

Carolyn Hoff Lynch Lecture Hall  
Chemistry Building, University of Pennsylvania



Professor Bode received his B.A. in Philosophy and B.S. in Chemistry from Trinity University, where he worked in the laboratories of Professor Michael P. Doyle. In 1996, he joined the research group of Professor Erick M. Carreira at the California Institute of Technology as an NSF predoctoral fellow. In 1998, he moved with Professor Carreira to the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland. Upon completing his Dok. Nat. Sci. at the ETH in 2001, he was a JSPS postdoctoral fellow with Professor Keisuke Suzuki at the Tokyo Institute of Technology. In 2003, he joined the faculty at the University of California, Santa Barbara. Professor Bode's research group is focused on the development of new reactions for chemoselective ligation, enantioselective catalysis, and new approaches to peptide, protein, and natural product synthesis. Since October 2007, he has been Associate Professor of Chemistry at the University of Pennsylvania. His research and teaching have been recognized by numerous awards, including a 2008 ACS Cope Scholar Award.

**Abstract:** The goal of our research program is to develop new, highly selective chemical reactions for the synthesis of organic and biological molecules. An underlying theme is the identification of reactions that 1) require no stoichiometric reagents; 2) produce no reaction byproducts; and 3) are tolerant to a wide range of unprotected functional groups. To achieve this, we have advanced novel organic redox reactions, in which there is no net change in the oxidation state of the two reactants.

These studies have led to the development of two novel, general processes: 1) the chemoselective amide-forming ligation of alpha-ketoacids and hydroxylamines and 2) the N-heterocyclic carbene catalyzed generation of reactive intermediates including enolates, homoenolates, and activated carboxylates from alpha,beta-unsaturated aldehydes. This latter process make possible highly enantioselective annulation reactions from simple starting materials under mild, convenient reaction conditions. The development, application, and mechanistic studies of these new approaches to organic synthesis will be discussed