



## 2008–2009 POCC Lecture Series

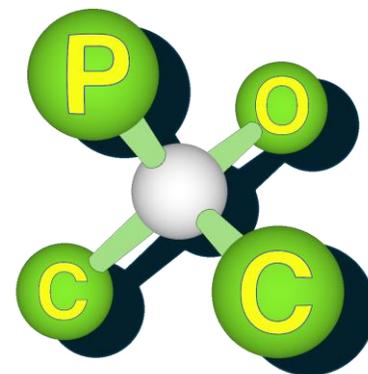
March 26, 2009, 8:00 PM

Prof. M. Christina White  
University of Illinois

*"C—H: A New Functional Group For  
Streamlining Synthesis"*

Carolyn Hoff Lynch Lecture Hall  
Chemistry Building, University of Pennsylvania

The Philadelphia  
Organic Chemist's  
Club



POCClub.org

M. Christina White was born in Athens, Greece and is an Associate Professor of Chemistry at the University of Illinois at Urbana-Champaign. She has received numerous awards including the Camille and Henry Dreyfus New Faculty Award (2002), the NSF CAREER Award (2006), the Eli Lilly Grantee Award (2007), the BMS Unrestricted "Freedom to Discover" Grant (2008), the Pfizer Award for Creativity in Organic Chemistry (2008), Amgen Young Investigator Award (2008), Camille Dreyfus Teacher-Scholar Award (2008), AstraZeneca Excellence in Chemistry Award (2008), Abbott Young Investigator Award (2008), Boehringer Ingelheim Pharmaceuticals New Investigator Award (2008), and the Alfred P. Sloan Research Fellowship (2008-2010). Professor White's research group is focused on the discovery, development, and study of predictable and highly selective C—H functionalization methods and their strategic use in streamlining the process of complex molecule synthesis.

**Abstract:** Although it has been well demonstrated that given ample time and resources, highly complex molecules can be synthesized in the laboratory, too often current methods do not allow chemists to match the efficiency achieved in Nature. The discovery and development of predictably selective C—H oxidation methods for the direct installation of oxygen, nitrogen, and carbon functionalities into allylic and aliphatic C—H bonds of complex molecules and their intermediates will be presented. Unlike Nature which uses elaborate enzyme active sites, we rely on the subtle electronic and steric interactions between C—H bonds and small molecule transition metal complexes to achieve high selectivities. Our current understanding of these interactions gained through preliminary mechanistic studies will be discussed. Novel strategies for streamlining the process of complex molecule synthesis enabled by these methods will be presented.