2011-2012 POCC Lecture Series

May 24, 2012, 8:00 PM

≈ POCC Student Choice Lecture ≈

Prof. Sarah E. Reisman

California Institute of Technology

New Methods and Strategies for the Total Synthesis of Polycyclic Natural Products

Carolyn Hoff Lynch Lecture Hall
Chemistry Building, University of Pennsylvania

The Philadelphia Organic Chemists' Club

POCClub.org

Sarah E. Reisman was born and raised in Bar Harbor, Maine. She was an undergraduate student at Connecticut College in New London, CT, where she developed a passion for organic synthesis working in the laboratory of Prof. Timo Ovaska, and graduated with honors in 2001. In the fall of that year, Sarah enrolled in graduate studies at Yale University and joined the research group of Prof. John Wood. She earned her Ph.D. in chemistry in 2006; her thesis detailed the total synthesis of the natural product welwitindolinone A isonitrile. For her postdoctoral work, Sarah pursued studies in the field of asymmetric catalysis as an NIH fellow, working with Prof. Eric Jacobsen at Harvard University. In 2008, Sarah joined the faculty at the California Institute of Technology as an assistant professor of Chemistry.

Abstract: The overarching goal of the Reisman laboratory is to discover, develop, and study new chemical reactions within the context of natural product total synthesis. Over the past century, natural products have played an important role in the discovery and development of new drugs and biological probes. The chemical synthesis of natural products enables the study of their biological properties, and can provide access to unnatural, synthetic derivatives that may have improved therapeutic properties. As importantly, these synthetic undertakings serve to drive innovation in, and deepen our fundamental understanding of, organic and organometallic chemistry. Our laboratory has ongoing research programs targeting the chemical syntheses of members of the aza-propellane and pyrroloindoline alkaloids, the epidithiodiketopiperazines, and the seco-ent-kauranoids. The densely packed arrays of heteroatoms and stereogenic centers comprising these polycyclic targets challenge the limits of current synthetic methodology. This seminar will describe our latest progress in both our methodological and target-directed synthesis endeavors.