2008-2009 POCC Lecture Series

January 29, 2009, 8:00 PM

Prof. Sarah E. O'Connor

Massachusetts Institute of Technology

"Alkaloid Biosynthesis in Madagascar Periwinkle"

Carolyn Hoff Lynch Lecture Hall
Chemistry Building, University of Pennsylvania

The Philadelphia Organic Chemist's Club

POCClub.org

Sarah E. O'Connor is an associate professor of Chemistry at MIT. Her research efforts focus on understanding how nature enzymatically constructs complex natural products, and how these metabolic pathways can be used to produce novel compounds. She received her BS degree in Chemistry from the University of Chicago and her PhD from Barbara Imperiali working at both Caltech and MIT. She was an Irving S. Sigal post-doctoral fellow with Chris Walsh at Harvard Medical School. She joined the faculty at MIT in 2003. She has been the recipient of several awards, including an Alfred P. Sloan research fellowship and an American Cancer Society Research Scholar Grant.

Abstract: *Catharanthus roseus*, or Madagascar periwinkle, produces an array of structurally complex natural products known as the monoterpene indole alkaloids. Relatively little is known about the biosynthesis of these pharmaceutically valuable compounds. The prospects for metabolic engineering, or "combinatorial biosynthesis" of these compounds in C. roseus will be discussed. Mechanistic studies and protein engineering of monoterpene indole alkaloid biosynthetic enzymes will also be presented.