



2011-2012 POCC Lecture Series

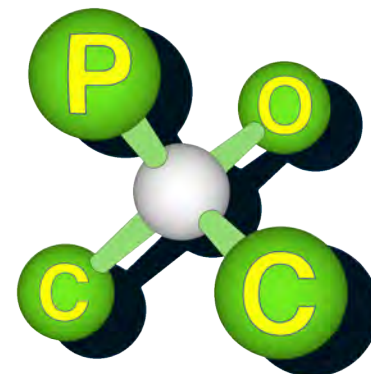
March 22, 2012, 8:00 PM

Prof. Brian M. Stoltz
California Institute of Technology

*Complex Natural Products as a Driving Force for
Discovery in Organic Chemistry*

Carolyn Hoff Lynch Lecture Hall
Chemistry Building, University of Pennsylvania

The Philadelphia
Organic Chemist's
Club



POCCclub.org

Brian M. Stoltz was born in Philadelphia, PA in 1970 and obtained his B.S. degree from the Indiana University of Pennsylvania in Indiana, PA. After graduate work at Yale University in the labs of John L. Wood and an NIH postdoctoral fellowship at Harvard in the Corey labs he took a position at the California Institute of Technology. A member of the Caltech faculty since 2000, he is currently the Ethel Wilson Bowles and Robert Bowles Professor of Chemistry and a KAUST GRP Investigator. His research interests lie in the development of new methodology for general applications in synthetic chemistry.

Abstract: Our laboratory is deeply interested in the discovery and development of new reaction methodology en route to the chemical synthesis of complex bioactive molecules. Over the course of the past ten years, research in our group at the California Institute of Technology has been initiated in the general area of synthetic chemistry, with a focus on the development of new strategies for the preparation of complex molecules, including natural products that possess interesting structural, biological, and physical properties. Concurrent to this program of target driven synthesis is a strong effort directed toward the development of new techniques and reaction methods, which will be useful for a range of applications. Typically, the complex target structure is used as an inspiration for the discovery of new reactions and technologies that may eventually be regarded as general synthetic methodology. Consequently, this approach provides access to a) novel, medically relevant structures, b) a general method for their synthesis, and c) new synthetic methods that will be beneficial for a host of applications.

The Stoltz group has been heavily involved in the synthesis of complex natural products such as the cyanthiwigins, quinocarcin, lemomycin, and the dragmacidins. These naturally occurring molecules possess promising biological properties ranging from activity against antibiotic-resistant bacteria, to antiproliferative, to anti-HIV action. Furthermore, they are structurally novel and are inherently a challenge to the state-of-the-art in synthetic chemistry. In the process of completing the synthesis of these important compounds, we have developed a number of new methods that enabled their access. Much of the group's methodological research has focused on new asymmetric catalytic methods for aerobic chemical oxidation and carbon-carbon bond formation. These topics will be discussed in the lecture.