



2014-2015 POCC Lecture Series

April 30, 2015, 8:00 PM

Prof. Sergey A. Kozmin

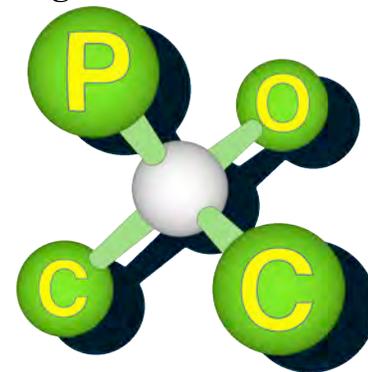
University of Chicago

Studies in Chemistry and Chemical Biology of Natural Products

Carolyn Hoff Lynch Lecture Hall

Chemistry Building, University of Pennsylvania

The Philadelphia
Organic Chemist's Club



POCClub.org

To join us for dinner before the lecture please contact POCC's assistant secretary Simon Golec (SimonG1326@aol.com) at least one week ahead of time.

Sergey A. Kozmin was born in Moscow, Russia and received his Undergraduate Diploma at the Moscow State University in 1993. He obtained his Ph.D. in 1998 at the University of Chicago with Viresh H. Rawal, and completed his postdoctoral studies in 2000 at the University of Pennsylvania with Amos B. Smith, III. He is currently a Professor of Chemistry at the University of Chicago. The main objective of Kozmin's research program is to develop an arsenal of new chemical agents for basic and translational biomedical research, which are employed to gain deeper mechanistic insight into human disease biology. The first approach relies on investigation of chemistry and chemical biology of promising natural products. The second approach entails generating and screening new chemical libraries that mimic the structural and functional diversity of secondary metabolome.

Abstract: Cell-permeable small organic molecules are increasingly useful for studying complex metabolic and signaling networks. Such compounds function by modulating the protein activity directly, providing a complementary approach to the widely employed gene replacement and RNA interference strategies. While significant progress toward identification of compounds that regulate many cellular pathways has been made, developing potent and highly specific chemical probes remains an important and a highly challenging endeavor. Natural products have been a rich source of pharmacological probes for basic and translational biomedical research. Our group is studying chemistry and chemical biology of several recently isolated natural products. We develop efficient chemical syntheses of such rare compounds and elucidate their mechanism of action. Over the years, we have investigated a number of natural products and their analogs that target cytoskeletal organization, energy metabolism, protein synthesis and bacterial transcription. Selected recent studies in this area will be presented during the lecture.