Special Seminar in Organic Chemistry

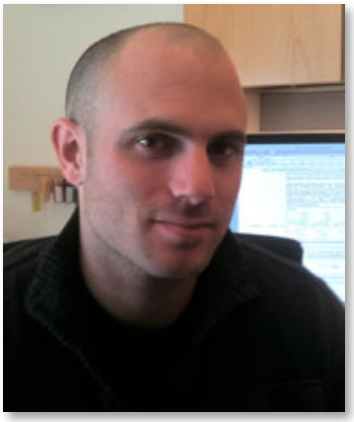
at the

University of Pennsylvania

Synthetic and Translational Studies of Bioactive Natural Products

Abstract

Natural products total synthesis has long provided a rich and unparalleled arena to develop new synthetic transformations, conceive novel and general strategies for complex molecular assembly, and enable elucidation of the biological pathways underlying the phenotypes associated with bioactive metabolites. The role of chemical synthesis in natural products chemistry and translational science will increase as we move beyond the classical "grind and find" era and advances in metabolomics, bioinformatics, and analytical techniques are integrated to allow us to reach deeper into Nature's reservoir of structures. In this lecture I will present a selection of projects that are ongoing in my laboratory and which focus on the synthesis of complex alkaloid, polyketide, and hybrid polyketide–nonribosomal peptide natural products. Common to all of these projects is the use of chemical synthesis as a platform to enable fundamental and applied science, including structure elucidation, reaction discovery, chemical biology, and translational studies.



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Chemistry Complex

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1:00 PM