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Department of Chemistry

Seminar

9:45 a.m. Thursday, October 1, 2015 • 331 Smith Hall



Professor

Jeff Johnson

Department of Chemistry
University of North Carolina, Chapel Hill

Development of New Stereoselective Reactions for Organic Synthesis

Research interests lie in the general area of chemical synthesis; particularly, the discovery of new organic transformations and their application to the total synthesis of architecturally challenging and biologically important natural products.

Website: http://www.chem.unc.edu/people/faculty/johnson_je/

Abstract

Medicinal application of many complex natural products is precluded by the impracticality of their chemical synthesis. This lecture will endeavor to detail some recent case studies from our research group directed toward the efficient laboratory preparation of complex bioactive natural products and small molecule building blocks.

The bioactivity of a given small molecule is often intimately linked to its stereochemical identity and significant attention is accordingly paid to absolute and relative stereochemical control during the preparation of a given target. Synthetic routes are often derailed by insurmountable stereochemical problems. In this lecture we will detail some recent cases in our laboratory where we faced a deep-seated stereochemical problem in the context of a complex molecule synthesis and were able to develop interesting chemistry to achieve late-stage stereochemical "correction." The merits of pursuing these stereoerrors will be discussed in the context of cases where carbon skeleton buildup can be rapidly achieved. We will also describe instances where complex structures serve as the inspiration to develop new reactions.

Host: Professor Christopher Douglas
Refreshments will be served prior to the seminar.