



## Department of Chemistry & Biochemistry Seminar

Friday, April 2<sup>nd</sup>, 2021

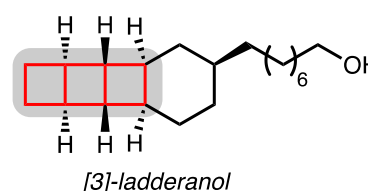
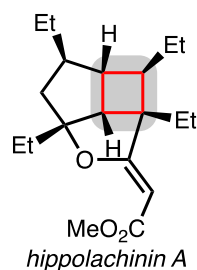
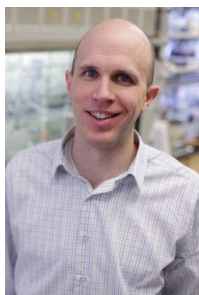
1:30pm – 2:45pm

Zoom ID: 960 452 0800

Password: *Butanes*

### *No Stain, No Gain: Advances in the Synthesis and Use of Cyclobutanes*

**Speaker: Prof. M. Kevin Brown, Indiana University**



**Abstract:** Development of enantioselective [2+2] cycloadditions to access cyclobutanes is an important yet unsolved problem in chemical synthesis. In the absence of efficient methods for the synthesis of chiral cyclobutanes, their accessibility as biologically active synthetic targets and, more generally, their utility as synthons for chemical synthesis, are hindered. Described in this seminar will be development of reagent or catalyst controlled stereoselective [2+2] cycloadditions of alkenes with ketenes or electron-deficient allenes. These reactions lead to the formation of highly substituted chiral cyclobutanes that can be easily transformed into other interesting and important motifs. Inspiration for the developed of these methods is rooted in the structures of several biologically active natural products. The synthesis of these molecules will also be discussed.

**Biography:** Kevin grew up in the suburbs of Chicago and after graduating high school moved to central New York to pursue an undergraduate degree at Hamilton College. Here Kevin became interested in organic chemistry by working in the labs of Ian Rosenstein. Upon graduation, Kevin moved to Boston College and received his Ph.D. in organic chemistry with Professor Amir Hoveyda in 2008. C. Upon completion of his graduate studies he began a Ruth L. Kirschstein National Institutes of Health funded postdoctoral fellowship in the laboratories of E. J. Corey at Harvard University. In 2011, Kevin began his intendent academic career at Indiana University. He has initiated a program of research that is generally directed towards the development of new methods and strategies in chemical synthesis. For these efforts, Kevin has been awarded a Sloan fellowship, NSF CAREER awards and the Amgen and Novartis Early Career Awards. In 2017, Kevin was promoted to Associate Professor and in 2021 he was promoted to full Professor.

