Our research program utilizes experimental and theoretical $^{13}$C kinetic isotope effects (KIEs) to investigate mechanisms of catalytic reactions. In the area of asymmetric organocatalysis, this approach is utilized to identify new mechanistic pathways and uncover fine details of complex catalytic cycles. These studies provide the basis for the rational design of novel concepts in asymmetric catalysis. Our more recent efforts address challenging mechanistic questions in the area of transition-metal catalysis.

This seminar will provide an overview of our research program and present unpublished results from (a) a mechanistic study of an organocatalytic asymmetric epoxidation reaction, (b) an investigation of the transmetalation step of the Suzuki-Miyaura reaction, and (c) the development of a novel mechanistic probe for the rapid determination of $^{13}$C KIEs using ‘designed’ starting materials.


Tuesday, October 16, 2018
4:15 p.m. in Stowell Hall Room 211
Light refreshments will be served. All are welcome.