Seminar

9:45 a.m. Monday, January 9

331 Smith Hall

Postdoctoral Fellow

Joseph Moran, Ph.D.

University of Texas at Austin

Reversing the Cope Elimination and Transfer Hydrogenation for Intermolecular C-N and C-C Bond Construction

Abstract

Part A. The development of efficient routes to nitrogen-containing molecules from olefin feedstocks is of paramount importance to the life science, bulk chemical and fine chemical sectors. A class of thermal intermolecular hydroamination reactions of hydroxylamines and hydrazines were developed based on the mechanistic reverse of the Cope Elimination. A related organocatalytic tethering strategy was developed in which simple aldehydes enable room-temperature intermolecular hydroamination for the synthesis of vicinal diamines with promising enantioselectivities.

Part B. The formation of C-C bonds via catalytic transfer hydrogenation has enabled carbonyl addition directly from the alcohol oxidation level, bypassing discrete alcohol oxidation and the generation of stoichiometric byproducts. Recent developments include the direct C-C coupling of methanol, an enantio- and diastereoselective carbonyl syn-crotylation method, and the polarity reversal of donor-acceptor cyclopropanes to generate chiral lactones.

Hosts: Professors Christopher Cramer & Christopher Douglas
Refreshments will be served prior to the seminar.