Dr. Zachary Wickens

Harvard University

Special Seminar

"Synthetic Versatility through Selective Catalysis"

Monday
January 9, 2017

3:30 p.m.

Seminar Hall
(1315 Chemistry)

Catalytic reactions capable of transforming simple starting materials into versatile building blocks possess tremendous synthetic value. In this seminar, selective catalytic strategies for both C–O bond installation and cleavage will be presented. First, the development of a modified Wacker-type oxidation with reversed regioselectivity will be discussed. This aldehyde-selective oxidation introduces a general catalytic approach to accomplish anti-Markovnikov alkene functionalization. Next, a catalytic strategy to exploit hydrogen bond donor catalysts to control the cleavage of strong C–O bonds will be presented. This new approach will be validated in the highly enantioselective ring opening of oxetane substrates to prepare densely functionalized chiral building blocks.