ORGANIC SEMINAR



FRIDAY, FEBRUARY 24TH, 2017, 9:00AM HUTCHISON HALL ROOM 473



University of Rochester Department of Chemistry

Guest Speaker: Professor André Beauchemin University of Ottawa Department of Chemistry





aldehydes induce temporary intramolecularity!



an amphoteric isocyanate

tethering catalysis: hydroamination aldehyde catalysis: directed hydration

"New Reactivity Using Amphoteric Molecules and Temporary Itramolecularity"

Abstract:

Most agrochemicals and pharmaceuticals contain nitrogen atoms in their structure, and C-N bond forming reactions account for approximately 15% of the reactions used in pharmaceutical R & D efforts. Our group has long been interested in reactions and strategies to rapidly assemble nitrogen-containing molecules. Initially, this involved using cycloadditions reactions of hydroxylamine and hydrazine derivatives. Studies targeting difficult intermolecular alkene hydroaminations have led to unexpected opportunities in two areas: 1) controlled reactivity of heteroatom-substituted isocyanates, a family of *amphoteric* isocyanates with little literature precedence and considerable untapped synthetic potential for the incorporation of the N-NCO and O-NCO motifs in bioactive molecules; 2) the use aldehydes as catalysts exploiting temporary intramolecularity to achieve difficult or impossible reactions. Recent reaction development efforts exploiting these approaches will be presented, including studies related to prebiotic chemistry.

Host: Professor Alison Frontier, email: frontier@chem.rochester.edu