University of Minnesota
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Department of Chemistry

Special Seminar

4:30 p.m. Friday, November 16, 2012 • 331 Smith Hall

Assistant Professor

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Copper Catalysis for Direct Formation of Heteroaromatics and Tetrasubstituted Carbons Bearing Amines

Research interests include unsolved areas in organic synthesis, including the formation of optically active allenes from achiral starting materials, the first catalytic asymmetric Cope rearrangement, and stereoselective deprotonation and trapping of sp3-carbon centers.

Website: http://chem.ucr.edu/index.php?main=faculty&facsort=profile&faculty=larsen

Abstract

Copper catalysts are capable of creating structurally diverse products by coupling an amine, alkyne, and carbonyl. The mechanistic requirements for the selection of propargylamines over heteroarenes are determined in some cases solely by temperature or solvent and in others by the electronic nature of the amine or aldehyde substrate. Second-generation green processes have been developed that operate with zero waste (as the sole by-product is 1 equivalent of water) and allow for the incorporation of alkyl groups on heteroarenes, critical for ongoing testing of potential anticancer therapies The first catalytic ketone-amine-alkyne coupling of acyclic ketones provides direct formation of tetrasubstituted propargylamines and may open the door to additions of other nucleophiles in these types of multicomponent reactions.

Host: Professor Christopher Douglas
Refreshments will be served prior to the seminar.