

SVSU SE&T Colloquium

New Methods for the Efficient and Flexible Oxidation of Hydrocarbons



**Professor
Jennifer M.
Schomaker**

**University of
Wisconsin-
Madison**

**B.S. Chemistry
SVSU, 1994**

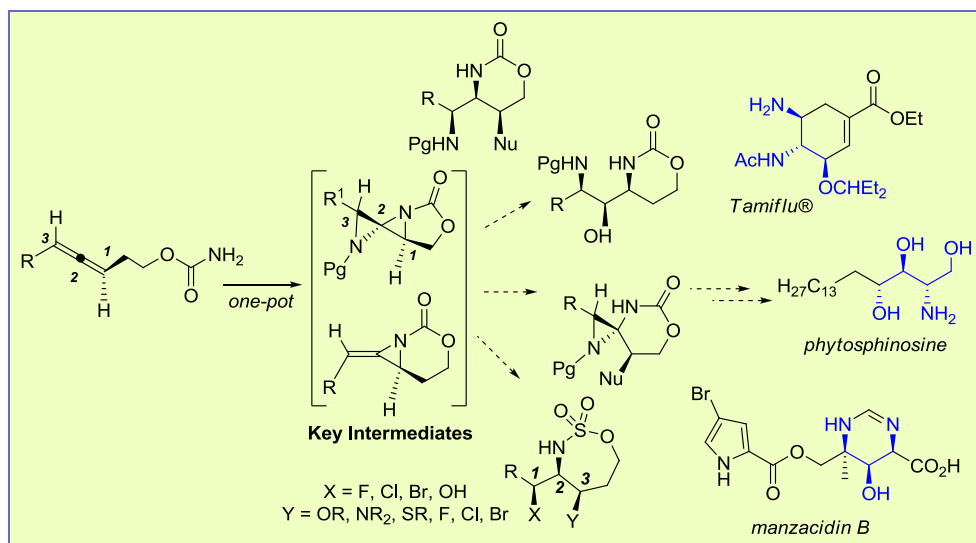
**Tuesday, October
25, 2011 in P-240
from 4:10-5:00p.m.**

**Refreshments will
start at 4:00 p.m.**

**Host:
Dr. Ken Kearns and
SVSU Chemistry Club**

Research in our group focuses on the development of more efficient and flexible methods to transform simple hydrocarbons into complex synthetic motifs. These building blocks can be used for the preparation of pharmaceuticals, natural products, polymers, ligands for catalysis and probes for exploring biological questions.

Many powerful methods for asymmetric olefin oxidation have been developed, but these reactions have limitations. Our lab has pioneered new allene oxidation methods that proceed through unusual nitrogen-containing strained ring scaffolds. These flexible methods provide rapid access to valuable motifs containing three contiguous and chiral heteroatom-bearing centers.



Our group is also interested in developing methods and catalysts to utilize small gaseous molecules in synthesis, which can often be very challenging. For example, the thermodynamic stability of CO₂ makes the direct hydrocarboxylation of olefins difficult to accomplish without the use of expensive catalysts and reagents. We have accomplished a tandem hydroboration/carboxylation reaction that requires only a Cu-based catalyst, a mild base and CO₂ at atmospheric pressure.

