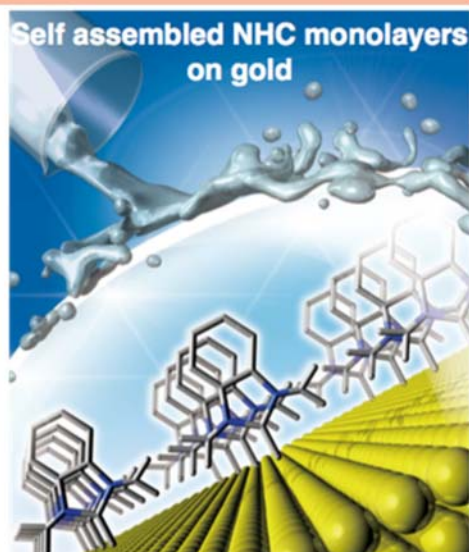


CHEMISTRY COLLOQUIUM

Guest Speakers:
Professor Cathleen Crudden
Queen's University
Department of Chemistry

Wednesday, March 11, 12:00pm
Hutchison Hall Room 140
Lander Auditorium
University of Rochester
Department of Chemistry



Title: “Metal catalysts, clusters and surfaces: Catalytic preparation of chiral bio-molecules and the chemistry of carbon-based monolayers”

Abstract:: The use of N-heterocyclic carbenes to modify homogeneous metal catalysts is widespread since the high metal–NHC bond strength renders high oxidative and chemical stability to NHC–ligated metal complexes. Despite this fact, the use of NHCs to modify metal *surfaces* is virtually unprecedented.

We will describe the first example of the synthesis of gold surfaces, including Au(111), Au nanoparticles and Au nanoclusters. Films prepared by the deposition of NHCs show molecular ordering on the surface and remarkable stability. The impact of this stability on the chemistry of nanoclusters will also be discussed.

We will also describe advances in organoboron chemistry that have dramatically broadened the applicability of this versatile element. In particular, we will describe its application in the preparation of complex chiral molecules of interest to the pharmaceutical industry and the ability to cross-couple seemingly identical boron substituents with different aryl iodides. The development of novel electrophiles for Suzuki-Miyaura cross coupling chemistry in the preparation of bioactive molecules will also be presented as will our developments in the use of sulfones as electrophiles for cross-coupling reactions.

Host: Professor Bill Jones , email: william.jones@rochester.edu