

UNIVERSITY OF RHODE ISLAND
Department of Chemistry

SEMINAR

Room 105 Beupre
3:00 p.m, Monday, Nov. 28, 2016

Prof. Anita Mattson

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Worcester Polytechnic Institute
Worcester, MA

***"Enantioselective C-C Bond
Construction with
Non-Covalent Catalysis"***

HOST

Mindy Levine
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Enantioselective C–C Bond Construction with Non-Covalent Catalysis

Anita Mattson

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Reactive cations, such as oxocarbenium ions and benzopyrilium ions, are useful intermediates in complex molecule synthesis. Unfortunately, it can be challenging to control the stereochemical outcome of reactions with these species as conventional catalysts (i.e., Lewis acids, transition metals) that operate through covalent bonding are often not effective. Catalysts that stabilize transition states through non-covalent interactions, such as hydrogen bonding and π – π stacking, can be particularly impactful when applied to reactive cations that do not operate well with conventional catalysts. One aspect of our research program is focused on advancing innovative families of non-covalent catalysts and their associated methodology to enable the enantioselective functionalization of biologically relevant heterocycles that are difficult to control with currently available catalysts. This presentation will focus on recent advances made in our laboratory with the design and application of silanediol catalysts in enantioselective chromen-4-one functionalization.