

FALL 2021
CHEMISTRY
SEMINAR SERIES



DR. MICHAEL NEIDIG

Department of Chemistry

*University of Rochester,
New York*

**HOSTS:
DRS. PROKOPCHUK
AND LOCKARD**

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INTERESTED ARE
WELCOME TO
ATTEND**

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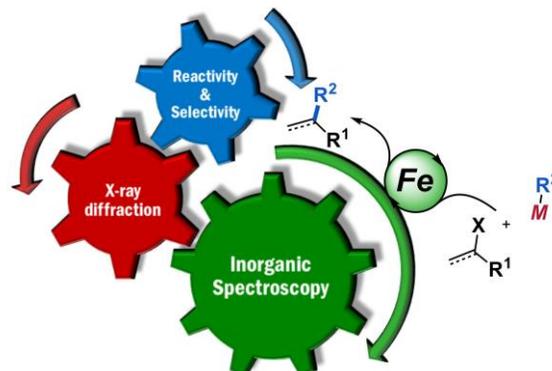
<https://sasn.rutgers.edu/chemistry>

**“Behind the Iron Curtain: Intermediates and Mechanism
in Iron-Catalyzed Transformations in Organic Synthesis”**

Friday, November 19, 2021, 11:30 AM

Life Science Center II, Room 130

Abstract: Despite the success of iron-based catalysts for transformations in organic chemistry, including cross-coupling and C-H functionalization reactions, a detailed molecular level understanding of these systems has remained elusive. This limitation is in stark contrast to palladium chemistry, where detailed studies of active catalyst structure and mechanism have provided the foundation for the continued design and development of catalysts with novel and/or improved catalytic performance. The use of an experimental approach combining advanced inorganic spectroscopies (Mössbauer, magnetic circular dichroism, electron paramagnetic resonance), density functional theory studies, synthesis and kinetic analyses enables the direct evaluation of the active iron species in iron catalyzed transformations in organic chemistry, providing a critical mechanistic framework to facilitate and inspire new iron-based methods development. This presentation will focus on our recent studies in organoiron intermediates, mechanism and methods development across reactions including cross-coupling, hydromagnesiation and C-H activation/functionalization.



Biographical sketch: Michael received his B.A. in chemistry from Colgate University in 1999. Following studies at the University of Cambridge as a Churchill Scholar leading to an M.Phil. degree in chemistry, he moved to Stanford University where he received his Ph.D. in chemistry in 2007 in the group of Prof. Edward Solomon. After brief stops at Dow Chemical as a Senior Research Chemistry and Los Alamos National Lab as a Director’s Postdoctoral Fellow, Michael joined the Department of Chemistry at the University of Rochester as an Assistant Professor in 2011 with subsequent promotion to Associate Professor in 2017, Professor in 2020 and is currently the Marshall D. Gates, Jr. Professor of Chemistry. His research at Rochester primarily focuses on the generation of fundamental insight into structure, bonding and mechanism in non-precious metal catalysis in organic synthesis including a variety of iron-catalyzed reactions including cross-coupling, hydrofunctionalization and C-H activation/functionalization. The work of the group has been recognized through awards including a Sloan Research Fellowship (2015), NSF CAREER Award (2015) and a DOE Early Career Award (2016).