



2019–2020 POCC Lecture Series

September 26, 2019, 7:30 PM

6:30 reception in the Nobel Hall

Prof. Sarah Wengryniuk

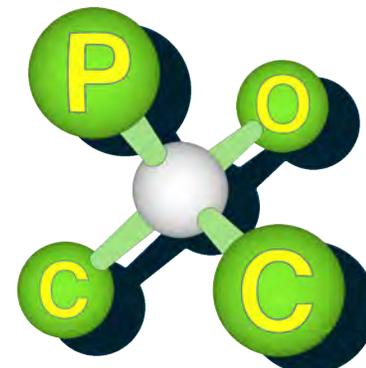
Temple University

Novel Umpolung Strategies Enabled by

Hypervalent Iodine Reagents

Carolyn Hoff Lynch Lecture Hall, Chemistry Building, University of Pennsylvania

The Philadelphia
Organic Chemist's
Club



POCClub.org

Sarah Wengryniuk was born and raised in rural farmlands of Frederick, MD. She conducted her undergraduate studies at Winthrop University in Rock Hill, SC earning a B.S. in chemistry and biology while also competing for both the track and cross-country teams. From 2007–2012 she conducted her doctoral studies at Duke University under the direction of Professor Don Coltart, working on auxiliary-based asymmetric ketone alkylation. In 2012, she joined the laboratory of Professor Phil Baran at The Scripps Research Institute as an NIH Ruth L. Kirchstein postdoctoral fellow. In 2015, she began her independent career at Temple University where her laboratory has explored novel umpolung reactivities enabled by hypervalent iodine reagents. Her research and teaching efforts have been recognized with several awards including the Thieme Chemistry Journal Award, the Italia-Eire Teacher of the Year, and an NSF CAREER.

Abstract: Hypervalent iodine reagents in the I(III) oxidation state have emerged as a versatile, environmentally benign toolkit for the functionalization of organic molecules. Amongst their diverse reactivity is the ability to facilitate reversed-polarity, or “umpolung”, transformations of typically nucleophilic functionalities, enabling novel bond disconnections. Our laboratory has leveraged an underexplored class of I(III)-reagents, (bis)cationic nitrogen ligated lambda-3 iodanes (*N*-HVI_s), as a platform to develop umpolung transformations of heteroatoms and alkenes. The presence of datively bound heterocyclic ligands leads to enhanced, highly tunable and novel reactivity relative to their well-established oxygen or halogen ligated counterparts. In this talk, our studies towards electrophilic oxygen activation, enone C-H arylation, and pyridinium group transfer reactions will be discussed.