# DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCE SEMINAR SERIES FALL 2021

### DATE: WEDNESDAY, OCTOBER 6, 2021

## **TIME: 1:00PM**

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Meeting number (access code): 2621 266 5639 Meeting password: CES

#### **GUEST SPEAKER**

Dr. Mike Pluth Department of Chemistry University of Oregon Eugene, Oregon

### **TOPIC**

Chemical Tools for Detection and Delivery of Reactive Sulfur Species

# **ABSTRACT**

Reactive sulfur species (RSS) play diverse roles in biological processes and constitute an interconnected signaling network with other established small molecule signaling agents like NO and CO. Of such species, hydrogen sulfide (H<sub>2</sub>S) has emerged as an important biological signaling molecule that plays important roles in diverse processes ranging from angiogenesis and wound healing to protection against oxidative damage associate with ischemia/reperfusion events. Motivated by the potential for broad applications as both research and pharmacological tools, our lab has focused on developing new strategies for RSS and H<sub>2</sub>S detection and delivery. This presentation will focus on recent efforts focused on developing RSS and H<sub>2</sub>S imaging methods and developing responsive donor motifs that allow for precise tuning of RSS and H<sub>2</sub>S delivery in response to specific stimuli, such as reactive oxygen species, enzymes, and bio-orthogonal activation.

#### <u>BIO</u>

Mike Pluth received his BS in Chemistry and Mathematics from the UO in 2004. He earned his PhD from UC Berkeley in 2008 as an NSF Predoctoral fellow, where he investigated supramolecular catalysis in self-assembled architectures. Mike then moved to MIT as an NIH Pathway to Independence Postdoctoral fellow, where he investigated methods for biological nitric oxide detection. In 2011, Mike started his independent career at the UO in the Chemistry & Biochemistry Department and is currently an Associate Professor. He is a member of the Materials Science Institute and an associate member of the Knight Campus and Institute of Molecular Biology.

Research in the Pluth lab focuses on different aspects of molecular recognition at the interface of bioorganic and bioinorganic chemistry, with a particular focus on developing chemical tools for detection and delivery of reactive sulfur species. Mike's work has been recognized by a number of awards, including the NSF Career Award, Alfred P. Sloan Fellowship, Camille Dreyfus Teacher Scholar Award, UO Outstanding Early Career Award, UO Fund for Faculty Excellence Award, and the Oregon Medical Research Foundation Richard T.

Jones New Investigator Award. Research in the Pluth lab is supported by the NSF, NIH, and private funding organizations.

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