



UNIVERSITY OF MINNESOTA  
Driven to Discover<sup>SM</sup>

# Department of Chemistry

## Special *Seminar*

9:45 a.m. Thursday, February 10 • Room 331 Smith Hall

Assistant Professor

### **Jeremy Kodanko**

Department of Chemistry  
Wayne State University, Detroit, MI

#### ***Oxidation of Peptides and Proteins by Iron Complexes***

Research interests include applying synthetic chemistry to problems in medicine and catalysis with a major interest in designing catalytic drugs.

website: <http://chem.wayne.edu/kodankogroup>



#### **Abstract**

Toward the goal of selective peptide and protein targeting, we have investigated the oxidative modification of amino acids, peptides and proteins by synthetic iron complexes that mimic iron-containing enzymes in biology. Ferryl species of the general formula  $[\text{Fe}^{\text{IV}}(\text{O})(\text{L})]^{2+}$ , where L is a pentadentate ligand, oxidize the side chains and/or backbone of protected amino acid derivatives with high kinetic selectivity and excellent control over relative rates by varying the ligand. Studies have been carried out in order to elucidate the mechanisms with reactive substrates. The oxidation and inactivation of peptides and proteins by synthetic iron complexes will be discussed, including the oxidation of glutathione by related iron complexes and the associated toxicity of non-heme ligands in cellulo.

Host: Assistant Professor Christopher Douglas