Professor Alison Fout's research interests include synthetic inorganic and organometallic chemistry applied to bioinorganic, catalysis, and small molecule activation.

Professor Fout received her undergraduate degree in chemistry from Gannon University in 2002, and a master's in science from the University of North Carolina at Charlotte in 2004. In 2009, she received her doctorate from Indiana University. She was the 2010 recipient of the American Chemical Society Division of Inorganic Chemistry Young Investigator Award for her research at Indiana. From 2009-2012, she was both a Mary Fieser and National Institutes of Health post-doctoral fellow at Harvard University. Fout joined the faculty at the University of Illinois at Urbana-Champaign in 2012.

Visit her website for more information.

Host: Professor Lawrence Que Jr.

Visit: chem.umn.edu/chemistry-events for a schedule of upcoming seminars.

“Iron-Catalyzed Oxyanion Reduction”

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The uses of nitrogen and chlorine containing oxyanions are extensive and varied, with notable applications as fertilizers, bleaching agents and rocket fuel. Due to the high solubility in water, these oxyanions have become pervasive ground water contaminants. While remediation of these pollutants by traditional means is difficult, metalloenzymes efficiently reduce these to benign products. Inspired by these biological systems, we designed a non-heme iron system featuring a secondary coordination sphere to facilitate the reduction of a variety of oxyanions. Furthermore, we discovered that the secondary coordination sphere interactions, imparted by the ligand periphery, stabilized intermediates and promoted deoxygenation of the oxyanions. The influence of the both the primary and secondary coordination sphere on reactivity and ligand dynamics will also be presented.