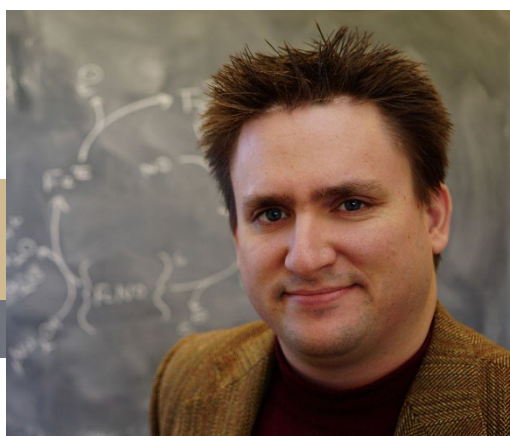


INORGANIC SEMINAR

Ligand-Centric Perspectives on (Bio)Inorganic Chemistry

Professor Kyle M. Lancaster

Department of Chemistry and Chemical Biology
Cornell University



This seminar will discuss three disparate topics unified by a focus on chemistry occurring at transition-metal bound ligands. The first vignette will focus on the chemistry of nitric oxide in biological ammonia oxidation. Specifically, there will be discussion of how nitric oxide and derivative species are used to drive energy transduction from ammonia, striking a distinction from the use of such molecules as cellular signaling agents in higher organisms. Next, the phenomenon of ligand field inversion will be introduced. Experimental evidence will be presented exposing the rift between formal and physical oxidation states in late transition metals. This will then be used to frame a discussion of how metal-ligand orbital admixture dictates the reactivity of coordinated ligands. Finally, the chemistry of metalloligands, specifically stannylenes, will be discussed with a focus on how transition metal bonding/electronic structure can be used to tune their reactivity.



Tuesday, January 14, 2025



12:30 pm



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