PROGRESS TOWARDS GROUP 6 TRIANIONIC PINCER ALKYNE METATHESIS CATALYSTS Soumya Sarkar, Matthew E. O'Reilly, Subramaniam Kuppuswamy, Jeffrey A. Culver, Andrew J. Peloquin, M. Tariq Jan, Ion Ghiviriga, Khalil A. Abboud, and Adam S. Veige Center for Catalysis, Department of Chemistry, University of Florida, P.O. Box 117200, Gainesville, FL 32611.

Creating reactive transition metal complexes capable of catalytically activating, breaking, and forming chemical bonds is a central theme in organometallic chemistry. To do so, chemists manipulate molecules (ligands) bound to metal ions to achieve precise control over their electronic and spatial environment. The goal is to modify metal-catalysts to either improve existing chemical reactions or to enable previously unattainable or unimaginable chemistry. We are pioneering the design and application of trianionic pincer ligands. This seminar will focus on recent attempts to synthesize highly reactive, constrained geometry group 6 alkylidyne catalysts for the purpose of either alkyne metathesis (AM) or nitrile-alkyne cross metathesis (NACM). Features include an unprecedented C-N bond cleavage and methyl group dehydrogenation, successful generation of the first trianionic pincer alkylidyne complex, metathesis results, and a discussion of inherent obstacles and methods to overcome them.