**New Pathways for Bond-Breaking and Bond-Making in Boryl Pincer Complexes**

Tridentate “pincer” ligands are commonplace in the chemistry of transition metals. Our group is especially interested in the design of new polydentate ligands that encourage new types of reactivity at transition metal centers. We recently showed that rhodium and iridium complexes supported by a boryl/bis(phosphine) PBP pincer activate a variety of pyridines and other heterocycles selectively in the 2-CH (“ortho”) position. This robust and atypical selectivity is made possible by the participation of boron in these reaction as a Lewis acid towards the substrate. This presentation will explore the mechanisms of reactions relevant to this C-H activation, as well as of reactions that are important in the generation of active species. Within that exploration, we discovered an especially unusual reaction which can be described as a reductive elimination from boron assisted by a transition metal. Overall, the presentation will hope to show the uniqueness of a boryl moiety as a donor type in polydentate ligands.