A Friday Synthesis Symposium Presentation:

Design of $\alpha$-diimine Cobalt and Nickel Precatalysts for the Synthesis of Alkylpolyboronates

Speaker: Dr. Neil Palmer (Rovis Group)

When: Friday, October 13th, 2017 at 4:00 PM

Where: 209 Havemeyer

Abstract: Alkylboronate esters, geminal diboronates and trigeminal triboronates are valuable reagents for $\text{C–C}$ and $\text{C–heteroatom}$ bond forming reactions, but one limitation to their application in synthesis is a lack of general methods for their preparation. A series of cobalt and nickel dialkyl and bis(carboxylate) complexes supported by $\alpha$-diimine ligands were developed to generate alkylpolyboronates through catalytic alkene hydroboration and $\text{C(sp}^3\text{)}$–$\text{H}$ borylation. Access to a benzyltriboronate structural motif using these methods enabled the discovery of a deborylative conjugate addition reaction, which proceeded with high levels of diastereoselectivity.

\[ \text{Co, Ni} \rightarrow \text{PinB} \]