2015-2016 POCC Lecture Series

April 21, 2016, 8:00 PM

≈ Sigma-Aldrich Student Choice Lecture ≈

Prof. Abigail G. Doyle
Princeton University

New Directions in Nickel-Catalyzed Cross Coupling

Carolyn Hoff Lynch Lecture Hall
Chemistry Building, University of Pennsylvania

The Philadelphia Organic Chemists' Club

POCClub.org

Help us welcome the speaker beginning at 6 PM, with food and beverages, in the Chemistry Department Nobel Hall.

Abigail Doyle was born in Princeton, NJ in 1980. She received her A.B. and A.M. summa cum laude in Chemistry and Chemical Biology from Harvard University in 2002. She began her graduate studies at Stanford University working with Professor Justin Du Bois. In 2003, she transferred to Harvard University and joined the laboratory of Professor Eric Jacobsen. Her graduate research included the discovery of a transition metal-catalyzed enantioselective alkylation of tributyltin enolates with alkyl halides and the development of a thiourea catalyst for enantioselective nucleophilic additions to prochiral oxocarbenium ions. Abby began as an Assistant Professor in the Department of Chemistry at Princeton University in July 2008 and was promoted to associate professor with tenure in July 2013.

Abstract: Transition metal-catalyzed cross coupling has revolutionized the way that chemists assemble carbon–carbon (C–C) bonds, including C(sp^3)–C bonds. These reactions typically involve Ni-catalyzed bond formation between alkyl halides and organometallic reagents. Our laboratory is interested in developing new activation mechanisms such that (1) more abundant and stable functional groups can be used for alkyl cross coupling and (2) the field can deliver more heteroatom- and stereochemically-rich products of value to practitioners of organic synthesis. This lecture will describe some of our recent progress in this area, including concurrent studies to improve the operational convenience and scope of Ni catalysis via the identification of new Ni pre-catalysts and ligands.