Seminar speaker: Elizabeth Jarvo

Nickel-Catalyzed Stereospecific Cross-Coupling and Cross-Electrophile Coupling Reactions

Abstract

Transition metal-catalyzed cross-coupling reactions have revolutionized the synthesis of natural products and medicinal agents and provided rapid synthetic access to a diverse range of molecules for biological testing. Important challenges remain, however, particularly in reactions that form C–C bonds between sp^3 hybridized carbons. We are developing methods for stereospecific alkyl-alkyl cross coupling and cross-electrophile coupling reactions, where transposition of stereochemical information from the electrophilic starting material to the product occurs. Stereosepecific reductive coupling reactions for synthesis of *cis*- and *trans*-substituted cyclopropanes will be described. Application of these methods in synthesis of known bioactive compounds and in discovery of compounds that exhibit selective anti-cancer activity will also be reported.