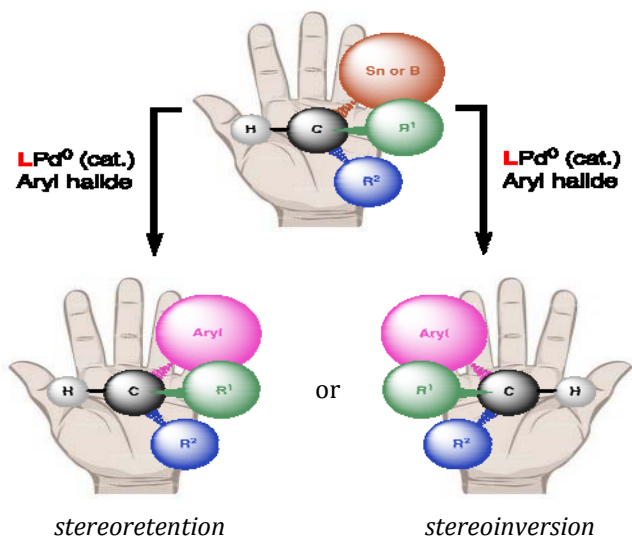


Organic Seminar

Title: "Rethinking asymmetric synthesis: The development of enantiospecific Pd-catalyzed cross-coupling reactions."



Guest Speaker:

Professor Mark Biscoe

The City College of New York
Department of Chemistry and
Biochemistry

Friday, January 24th, 9:00am

Hutchison Hall 473

University of Rochester
Department of Chemistry

Abstract: The development of transition metal-catalyzed cross-coupling reactions has greatly influenced the manner in which the synthesis of complex organic molecules is approached. A wide variety of methods are now available for the formation of $\text{C}(\text{sp}^2)\text{-C}(\text{sp}^2)$ bonds, and more recent work has focused on the use of $\text{C}(\text{sp}^3)$ electrophiles and nucleophiles. The use of secondary alkyl nucleophiles in cross-coupling reactions remains an outstanding challenge because of the propensity of these alkyl groups to isomerize under the reaction conditions. In principle, enantioenriched secondary alkyl organometallic nucleophiles can undergo cross-coupling reactions with transfer of the original stereochemistry, thus enabling a new approach to the preparation of enantioenriched molecules. In this seminar, we will describe new methods for the use of configurationally stable, optically active alkyltin and alkylboron nucleophiles in enantiospecific Pd-catalyzed cross-coupling reactions. Such processes enable the rapid generation of libraries of non-racemic drug candidates from a single optically active precursor.

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