

## SL02 Palladium-Catalyzed Carbon-Heteroatom Bond-Forming Reactions

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Cross-coupling methodology is an indispensable part of the everyday repertoire of synthetic organic chemists. Crucial to our success in the development of new and more generally applicable methods has been our discovery and use of monodentate biaryl phosphine ligands. More recently, the invention of precatalysts based on these ligands has further increased their activity and utility. This lecture will detail our progress in formation of carbon-heteroatom bonds. Included will be: 1) Studies on structure-reactivity relationships of biaryl phosphine ligands and the catalyst systems based on them. 2) Mechanistic studies of both catalytic processes and stoichiometric model systems. 3) Our latest progress in the discovery of new catalysts and transformations of interest. 4) Applications of these catalyst systems to the preparation of interesting compounds.