2009-2010 POCC Lecture Series

January 28, 2010, 8:00 PM

Prof. Gregory Fu

MIT

"Palladium- and Nickel-Catalyzed Coupling Reactions of Alkyl Electrophiles"

Carolyn Hoff Lynch Lecture Hall
Chemistry Building, University of Pennsylvania

The Philadelphia Organic Chemist's Club

POCClub.org

Prof. Greg Fu was born in Galion, Ohio, in 1963. He received a B.S. degree in 1985 from MIT, where he worked in the laboratory of Prof. K. Barry Sharpless. After earning a Ph.D. from Harvard in 1991 under the guidance of Prof. David A. Evans, he spent two years as a postdoctoral fellow with Prof. Robert H. Grubbs at Caltech. In 1993, he returned to MIT, where he is currently the Firmenich Professor of Chemistry. Prof. Fu received the Springer Award in Organometallic Chemistry in 2001, the Corey Award of the American Chemical Society in 2004, and the Mukaiyama Award of the Society of Synthetic Organic Chemistry of Japan in 2006. He is a fellow of the Royal Society of Chemistry and of the American Academy of Arts and Sciences. Prof. Fu serves as an associate editor of the *Journal of the American Chemical Society*. His current research interests include metal-catalyzed coupling reactions, chiral-ligand design, and enantioselective nucleophilic catalysis.

Abstract: Despite the tremendous accomplishments that have been described in the development of palladium- and nickel-catalyzed carbon-carbon bond-forming processes, it is nevertheless true that many significant opportunities remain. For example, to date the overwhelming majority of studies have focused on couplings between two sp^2-hybridized reaction sites (e.g., an aryl metal with an aryl halide).

As of 2001, there were few examples of palladium- or nickel-catalyzed coupling reactions of alkyl electrophiles. During the past several years, we have pursued the discovery of palladium- and nickel-based catalysts for coupling activated and unactivated primary and secondary alkyl electrophiles that bear b hydrogens. Our recent efforts to develop broadly applicable methods, including enantioselective processes, will be discussed.