



2017-2018 POCC Lecture Series

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The Allan R. Day Award
Prof. Stephen L. Buchwald

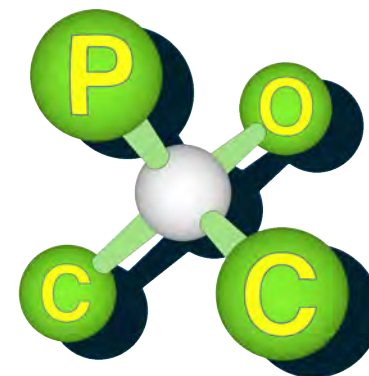
MIT

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*Palladium-Catalyzed Carbon-Heteroatom Bond-Forming
Reactions for Organic Synthesis—from Small to Big*

Carolyn Hoff Lynch Lecture Hall
Chemistry Building, University of Pennsylvania

The Philadelphia
Organic
Chemist's Club



POCClub.org

Stephen L. Buchwald was born in Bloomington, Indiana. He received his Sc.B. degree from Brown University in 1977 where he worked with Kathlyn A. Parker and David E. Cane at Brown University as well as Professor Gilbert Stork at Columbia University. He entered Harvard University as a National Science Foundation Predoctoral. His thesis work, with Jeremy R. Knowles, concerned the mechanism of phosphoryl transfer reactions in chemistry and biochemistry. He then was a Myron A. Bantrell postdoctoral fellow at Caltech with Professor Robert H. Grubbs where he studied titanocene methylenes as reagents in organic synthesis and the mechanism of Ziegler-Natta polymerization. In 1984 he began as an assistant professor of chemistry MIT was named the Camille Dreyfus Professor in 1997. During his time at MIT he has received numerous honors including the Harold Edgerton Faculty Achievement Award of MIT, an Arthur C. Cope Scholar Award, the 2000 Award in Organometallic Chemistry from the American Chemical Society and a MERIT award from the National Institutes of Health. He has also been the recipient of the Bristol-Myers Squibb Distinguished Achievement Award and the CAS Science Spotlight Award, both received in 2005 and the American Chemical Society's Award for Creative Work in Synthetic Organic Chemistry as well as the Siegfried Medal Award in Chemical Methods which Impact Process Chemistry, both received in 2006. In 2010 he received the Gustavus J. Esselen Award for Chemistry in the Public Interest. He received the 2013 Arthur C. Cope Award from the American Chemical Society. In 2000, he was elected as a fellow of the American Academy of Arts and Sciences and in 2008 he was elected as a member of the National Academy of Science. He is the coauthor of over 475 published or accepted papers and 48 issued patents. He serves as a consultant to a number of companies and is an associate editor of *Advanced Synthesis and Catalysis*.

Abstract: Cross-coupling methodology is an indispensable part of the everyday repertoire of synthetic organic chemists. Among the many possibilities, we have focused a great deal of attention on the Pd-catalyzed formation of C-N bonds (Chem. Rev., 2016, 116, 12564); a mechanistic pathway for this transformation is shown below. This methodology has been widely utilized throughout academia and industry. The history of as well as applications of this chemistry in a variety of settings will be discussed.