



## Strategies in C-C bond Formation Enabled by Boron-Stabilized Carbanions

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**Abstract:** Chiral organoboron reagents participate in a broad array of catalytic and noncatalytic stereoselective reactions and for this reason they remain as useful tools for asymmetric synthesis. While organoboron compounds have been subject to intense study over a period of decades, reactivity features still emerge that are unanticipated. In this seminar, the reactivity and properties of underexplored anionic organoboron compounds will be presented. These reagents can engage in catalytic C-C bond-forming reactions and also in unexpected cycloaddition reactions. Studies dedicated to understanding the mechanistic features and synthesis applications of these processes will be presented.

### References:

- (a) "A Catalytic Enantiotopic-Group-Selective Suzuki Reaction for the Construction of Chiral Organoboronates," C. Sun, B. Potter, J. P. Morken *J. Am. Chem. Soc.* **2014**, *136*, 6534–6537. (b) "Simple Access to Elusive  $\alpha$ -Boryl Carbanions and Their Alkylation: An Umpolung Construction for Organic Synthesis," K. Hong, X. Liu, J. P. Morken *J. Am. Chem. Soc.* **2014**, *136*, 10581–10584. (c) "Catalytic Conjunctive Cross-Coupling Enabled by Metal-Induced Metallate Rearrangement," L. Zhang, G. J. Lovinger, E. K. Edelstein, A. A. Szymaniak, M. P. Chierchia, J. P. Morken *Science*, **2016**, *351*, 70–74.