



# CHEMISTRY SEMINAR 291

## Accessing Ambiphilic Phosphine Boronates by Phosphine-Directed C-H Borylation

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Date: 4/12/19

Time: 1:30 PM

Location: COB1 267

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### ABSTRACT

Selective C-H bond functionalization of arenes continues to be an important avenue of research as a method to efficiently synthesize biologically relevant, substituted arenes from simple precursors. Conversion of unreactive C-H bonds to synthetically useful C-B bonds allows for production of value-added fine chemicals based on the versatility of the C-B bond in synthesis. Our group has developed the phosphine-directed C-H borylation, which provides a diverse group of ambiphilic phosphine boronates. The use of an unusual cationic iridium pre-catalyst was found to be key to a broad substrate scope. These compounds have potential as organocatalysts and bifunctional ligands. The versatile C-B bond can also be used to access a wide range of functionalized phosphines. Progress in each of these areas will be discussed.

### BIO:

Professor Timothy Clark received his Bachelors of Arts from the University of San Diego in 2001, followed by his Ph.D. at the University of California, Irvine with Keith Woerpel. After completing a post-doc experience with Charles Casey at the University of Wisconsin as an NIH Ruth L. Kirschstein Postdoctoral Fellow, he began his independent career at Western Washington University in 2007. After 4 years, he moved to the University of San Diego where he is currently an Associate Professor. He has received several awards as a faculty member including the Cottrell Scholar Award through Research Corporation, the Henry Dreyfus Teacher-Scholar Award and an NSF CAREER award. He recently received USD's University Professorship.

