From Boronic Acid Transformations to Prostanoid Syntheses

Part 1: Secondary and tertiary boronic esters are versatile intermediates and can be transformed into alcohols, alkenes, and amines. I will show how this can be expanded to include new coupling reactions with a broad range of aromatics, and also new reactions that convert the boronic ester moiety into a host of other functional groups with full stereocontrol.

Part 2: In the second half of this lecture, I will describe our recent 7-step synthesis of PGF2a and show how the key intermediate can be used to access other prostanoids. The key intermediate is the aldol dimer of succinaldehyde, made in high ee by a proline catalysed aldol reaction.