The Stoltz Group: Methodology and Fundamental Research

Caltech

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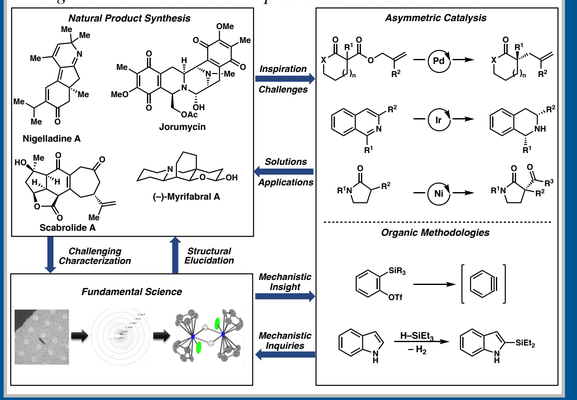
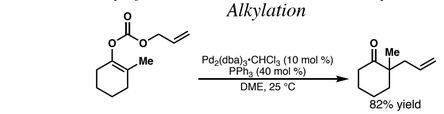
Target Driven Method Development and Fundamental Research

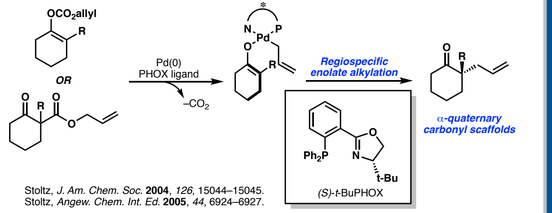


Discovery of an Enantioselective Decarboxylative Allylic Alkylation



Tsuji, *Tetrahedron Lett.* **1983**, *24*, 1793–1796.

other seminal studies: Tsuji, Trost, Helmchen, Bäckvall, Hayashi, Hartwig, etc.



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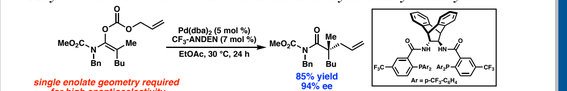
Acyclic Stereocontrol: Palladium Catalyzed Allyic Alkylation



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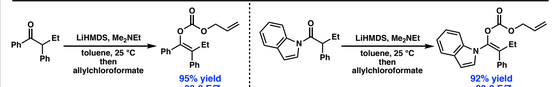
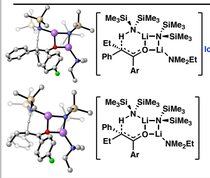
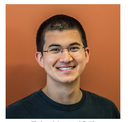


Genentech selective enolization can be utilized to generate allyl enol carbonates with exceptional E/Z selectivity





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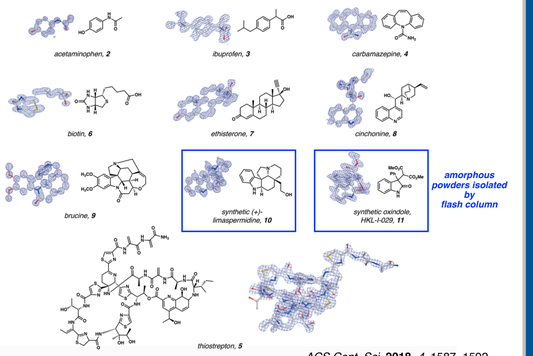
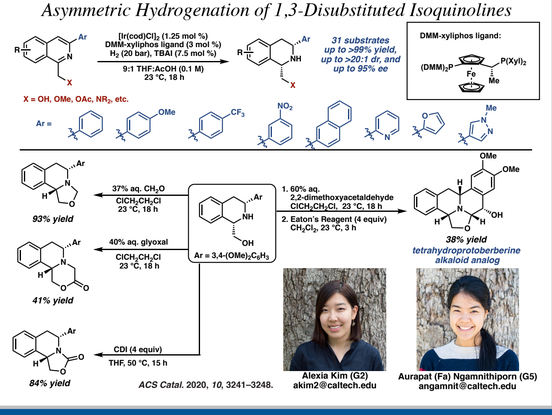
Zhang and Gosselin, *J. Am. Chem. Soc.* **2017**, *139*, 10777–10783.
Zhang and Collum, *J. Am. Chem. Soc.* **2017**, *139*, 12182–12189.

The MicroED Method Applied to Small Organic Molecules



ACS Cent. Sci. **2018,** *4*, 1587–1592.
w/ Nelson, Gonen, and Rodriguez labs at UCLA

Asymmetric Hydrogenation of 1,3-Disubstituted Isoquinolines



ACS Catal. 2020, *10*, 3241–3248.

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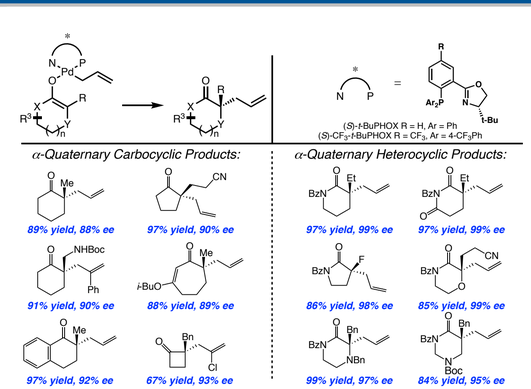

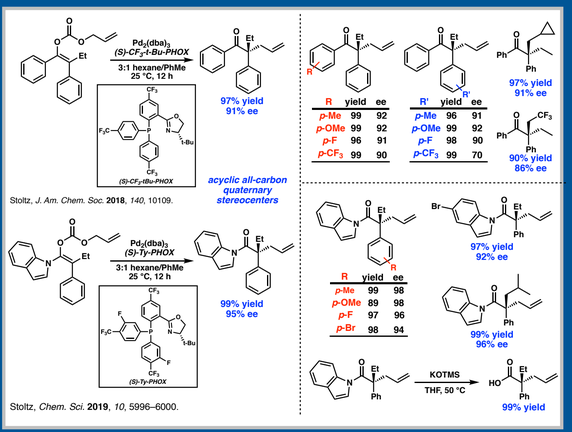

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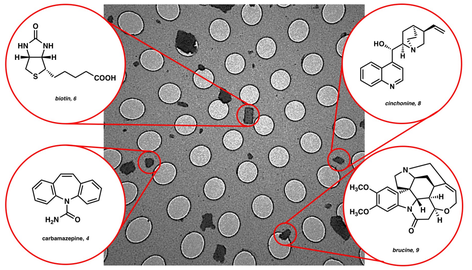
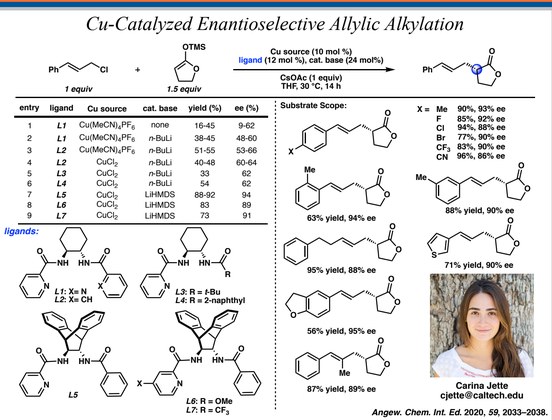
The MicroED Method Applied to Small Organic Molecules



Compounds could be identified from heterogeneous mixtures based on their respective unit cell parameters. Grid holes are 2 μm in diameter.

ACS Cent. Sci. **2018,** *4*, 1587–1592.
w/ Nelson, Gonen, and Rodriguez labs at UCLA

Cu-Catalyzed Enantioselective Allylic Alkylation



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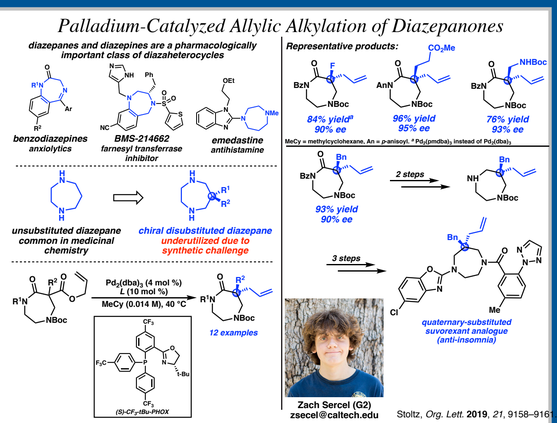
Angew. Chem. Int. Ed. 2020, *59*, 2033–2038.

Palladium-Catalyzed Allylic Alkylation of Diazepanones



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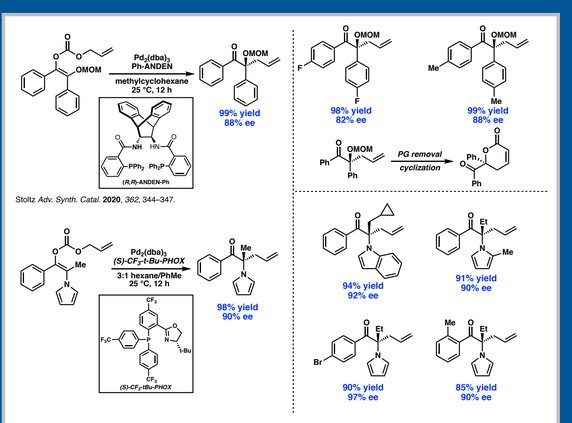

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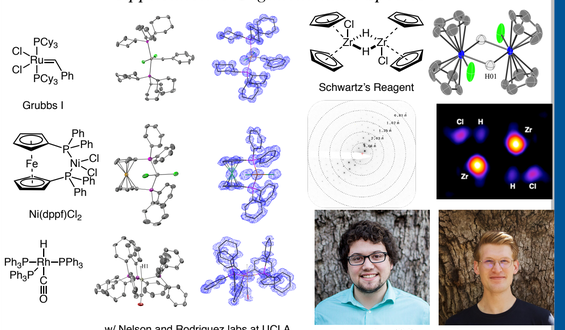
Application to Organometallic Species



w/ Nelson and Rodriguez labs at UCLA
ACS Cent. Sci. **2019**, *5*, 1507–1513.

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