



# SEMINAR

Monday 18/11/19, 12:00 pm

Building 211, seminar room

## SPEAKER:

**Dr. David Pierrot**

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## TOPIC:

### **Rapid, Modular and Stereodivergent Synthesis of Acyclic 1,4-Stereocenters: Experiment Design, Scope and Mechanistic Insight**

The preparation of acyclic molecules bearing multiple elements of complexity (unsaturations, centers of chirality) has been a great challenge for synthetic chemists when these elements are located in a close vicinity.<sup>1</sup> While many methods enable the enantioselective preparation of specific templates, stereodiversity can mostly be accessed through long linear sequences. Recent stereodivergent preparations of 1,2-contiguous stereocenters received great interest from the community.<sup>2,3</sup> In order to pursue the chemical space's exploration,<sup>4</sup> more rapid and efficient preparations of any stereoisomer of a given stereofamily are required.

Owing to a specific substrate design (*Scheme 1*), we could access acyclic 1,4-stereocenters in a stereodivergent manner through two different approaches. A palladium-catalyzed remote functionalization approach leads to the 1,2,5-stereocenter family **2**.<sup>5</sup> A metal-free catalytic diboration strategy afforded the preparation of 1,4-stereocenter family **3** containing an allylic boronic ester functional group.<sup>6</sup> Both methods are versatile and enable the preparation of both tertiary or quaternary stereocenters in a stereodivergent approach.

<sup>1</sup> D. Pierrot, I. Marek, *Angew. Chem. Int. Ed.* **2019**, 58, 2-16.

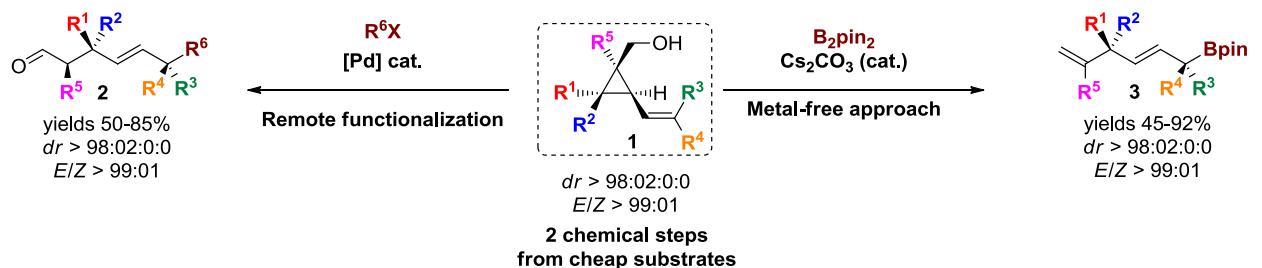
<sup>2</sup> S. Krautwald, D. Sarlah, M. A. Schafroth, E. M. Carreira, *Science* **2013**, 340, 1065.

<sup>3</sup> D. Kaldre, I. Klose, N. Maulide, *Science* **2018**, 361, 664.

<sup>4</sup> J.-L. Reymond, *Acc. Chem. Res.* **2015**, 48, 722.

<sup>5</sup> J. Bruffaerts, D. Pierrot, I. Marek, *Nature Chem.* **2018**, 10, 1164.

<sup>6</sup> *Unpublished results*



Scheme 1 Presentation's overview