SynTech Automated Chemical Synthesis



My name is Hannah Adams and I completed my MChem at the University of Warwick. During my final year I worked under the supervision of Professor Martin Wills exploring asymmetric transfer hydrogenation on enone and enynones substrates and subsequently investigating their directing effects in the reaction.<sup>1</sup>

In 2020 I joined the Phipps group at the University of Cambridge as part of the SynTech CDT where I will be exploring enantioselective catalysis. Classical enantioselective reactions which feature transition metals often have chiral functional groups in the ligand, despite this being broadly applied there are many disadvantages. The group has developed ion-paired catalysis for the C-H borylation reaction; an anionic ligand can be associated to a 'chiral' cation and preform both enantioselective and regioselective transformations!<sup>2</sup> With the potential for this methodology to be used in many different transformations – who knows what other reactions could use ionpaired catalysis!

Choosing to join SynTech was an easy choice! I strongly align with its core values that chemists need to have a good understanding of technology, for example machine learning and automation. Also, vice versa, computational scientists should have a good understanding of chemistry. This engages effective communication between the roles and potentially accelerated innovation and discovery in many different fields of chemistry. I believe that SynTech is preparing both chemists and computational scientists for the future of science.

- T. H. Hall, H. Adams, V. K. Vyas, K. L. Michael-Chu, M. Wills, *Tetrahedron*, 2020, 131771.
- 2 G. R. Genov, J. L. Douthwaite, A. S. K. Lahdenperä, D. C. Gibson, R. J. Phipps, *Science*, 2020, **367**, 1246–1251.