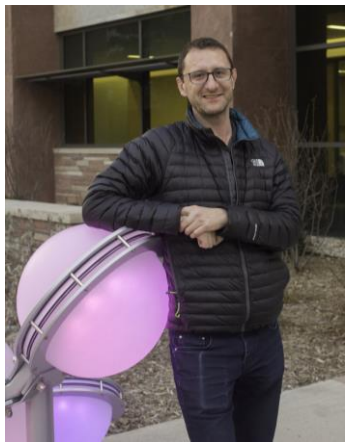

2021-2022 POCC Lecture Series

September 30, 2021, 7:30 PM

Virtual reception to start prior to the seminar at 7 PM

Prof. Andy McNally

Colorado State University

Selective Functionalization of Pyridines, Diazines and Pharmaceuticals via Unconventional Intermediates

Virtual Seminar by Zoom (LINK)

The Philadelphia Organic Chemist's Club

INDUSTRY ⇌ ACADEMIA SINCE 1945

POCClub.org

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Abstract: Pyridines and diazines are ubiquitous in pharmaceuticals and agrochemicals, yet there are limits in synthetic methods that can directly functionalize the C–H bonds in these structures. We will show two distinct approaches, using phosphorus and ring-opened intermediates, that enable selective functionalization of these heterocycles into a range of valuable derivatives. A range of C–C and C–Heteroatom bond formations are viable, and the chemistry is viable on structures typically encountered in drug discovery programs. Our lab has also performed mechanistic and computational studies of the regioselectivity of these reactions and phosphorus the ligand-coupling processes involved.

Bio: Andy McNally grew up in Liverpool in the United Kingdom. He gained his undergraduate degree from the University of Cambridge and completed his final year project in Professor Ian Paterson's group. Andy stayed in Cambridge for his PhD studies as part of the inaugural class in Professor Matthew Gaunt's laboratory. He gained a Marie Curie International Outgoing Fellowship and moved to Princeton University to work in Professor David MacMillan's group as a postdoctoral researcher. For the return phase of the fellowship, he returned to Cambridge to Professor Gaunt's laboratory and worked on the C–H activation reactions of aliphatic amines. He began his independent career in 2014 at Colorado State University, was promoted to Associate Professor and awarded the Albert I. Meyers Chair in Organic Chemistry in 2020. His group are developing broadly applicable new transformations of electron-deficient heterocycles using main group elements and dearomatized intermediates.