



2018–2019 POCC Lecture Series

October 25, 2018, 7:30 PM

6:30 reception in the Nobel Hall

Dr. Jamie McCabe Dunn

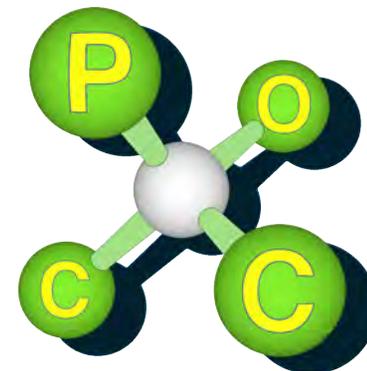
Merck Process Research and Development

*Vignettes in Process Chemistry spanning Enabling Discovery
Chemistry to Manufacturing Route Development*

Carolyn Hoff Lynch Lecture Hall

Chemistry Building, University of Pennsylvania

The Philadelphia
Organic Chemist's
Club



POCClub.org

Jamie McCabe Dunn obtained her PhD from the University of Pittsburgh under the supervision of Kay Brummond, followed by a postdoctoral position at the University of Colorado in the group of Andrew Phillips. Jamie began her career at Merck in 2009 in the Union Process Chemistry group, where her impacts included endgame chemistry development for early GMP deliveries on the BACE (MK-8931) and diabetes programs that were successfully executed in the pilot plant. In 2010 Jamie undertook a new challenge in joining Merck Discovery Process Chemistry group, DPC, where her experience and impacts span the broad range of DPC activities that enable Merck's early pipeline, such as developing novel chemistry to facilitate Medicinal Chemistry SAR, driving the critical early stage workflows and transitioning candidates into development. In July 2017 Jamie returned to the Process Chemistry group and took on the project lead role for a late stage neuroscience program, which resulted in her promotion to Principal Scientist.

Abstract: Process Research & Development at Merck & Co., Inc. encompasses a number of diverse research groups whose focus ranges from enabling discovery chemistry (Discovery Process Chemistry), to discovery of new & innovative technologies (Enabling Technologies), to developing the ideal process for a manufacturing route (Process Chemistry). This presentation will highlight several short stories exemplifying my innovative work across multiple phases of development that benefitted multiple therapeutic areas ranging from antivirals to neuroscience. It will include the discovery and development of a palladium-catalyzed α -arylation of cyclopropyl nitriles and its application to open up new chemical space in various discovery programs, highlighting Discovery Process Chemistry's impact in Discovery Chemistry, as well as the power of our Enabling Technologies group. Moving into early development, a novel direct and chemoselective 3'-phosphoramidation and its successful application to multi-kilo GMP campaigns will be presented, along with our work toward understanding the mechanism behind this unexpected selectivity. Lastly, I will share recent work as a team lead focused on developing an "ideal" manufacturing process for a marketed Active Pharmaceutical Ingredient.