2017-2018 POCC Lecture Series

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Prof. Kay Brummond

University of Pittsburgh

The Dehydro-Diels-Alder Reaction: Mechanism, Scope and Application Studies

Carolyn Hoff Lynch Lecture Hall
Chemistry Building, University of Pennsylvania

The Philadelphia Organic Chemist's Club

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Kay Brummond received her BS from the University of Nebraska-Lincoln (UNL) in 1985. She carried out her graduate studies at UNL and the Pennsylvania State University, earning her PhD in organic chemistry from Penn State in 1991. After two years as a postdoctoral fellow at the University of Rochester, she accepted a faculty position in the Department of Chemistry at West Virginia University in 1993. She was promoted to Associate Professor with tenure in 1999 at WVU and held an adjunct Associate Professor position in the Department of Basic Pharmaceutical Sciences. In 2001, Brummond joined the Department of Chemistry at the University of Pittsburgh as an Associate Professor and was promoted to Professor in 2006. Brummond served as Chair in the Department of Chemistry from 2014 to 2017 and is currently serving as Associate Dean of Faculty Affairs in the Dietrich School of Arts & Sciences at the University of Pittsburgh. Brummond's research program focuses on the discovery, development, and mechanistic understanding of chemical reactions to overcome synthetic challenges posed by molecularly complex compounds.

Abstract: Researchers continue to turn to the intramolecular dehydro-Diels-Alder reaction (IMDDA) of vinylheteroaryls and alkynes anticipating benzofused heterocyclic targets, even though they are afforded unpredictably, often as product mixtures, in moderate yield, and generally require harsh reaction conditions. Our objective, and the topic of this presentation, is to provide a mechanistically enlightened use of this dearomative variant of the IMDDA to enable better realization of the full synthetic potential of this reaction for directly accessing heterocycles fused to highly and fully substituted benzenoids and dihydrobenzenoids.