University of Minnesota
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Department of Chemistry
Gassman Lectureship in Chemistry
April 22-25, 2013

Professor Donna Blackmond

Department of Chemistry Scripps Research Institute

Donna G. Blackmond received a doctorate in Chemical Engineering from Carnegie-Mellon University in 1984. She has held professorships in chemistry and in chemical engineering in the United States, Germany, and the United Kingdom, and she has worked in industrial research in the pharmaceutical industry. In 2010, she moved from a research chair at Imperial College London to her present position as professor of chemistry at The Scripps Research Institute in La Jolla, California.

Blackmond has received Royal Society of Chemistry awards in Physical Organic Chemistry and in Process T echnology, a Royal Society Wolfson Research Merit Award and an ACS Arthur C. Cope Scholar Award. She has been a Woodward Visiting Scholar at Harvard and a Miller Institute Research Fellow at Berkeley. She received the Max-Planck-Society's Award for Outstanding Women Scientists and she was an NSF Presidential Young Investigator. She has received the Paul H. Emmett Award in Fundamental Catalysis from the North American Catalysis Society and the Paul Rylander Award from the Organic Reactions Catalysis Society. In 2013, Blackmond was elected as a member of the US National Academy of Engineering.

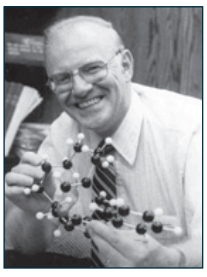
Professor Blackmond's research focuses on kinetic and mechanistic studies of catalytic reactions for pharmaceutical applications, including asymmetric catalysis, as well as on fundamental investigations of the origin of biological homochirality.

Website: http://www.scripps.edu/research/faculty/blackmond

Lecture #2:
9:45 a.m.
Tuesday, April 23
331 Smith Hall

A New Paradigm for Stereocontrol in Organocatalysis

Detailed mechanistic studies of several reactions catalyzed by diphenylprolinol ether catalysts led to the proposal that enantioselectivity is determined not in the stereogenic bond-forming step but is controlled by the relative stability and activity of diastereomeric intermediates downstream from this step in the catalytic cycle. Equilibration of intermediates prior to a definitive irreversible step combines kinetic and thermodynamic influences on ultimate product selectivity in a classic Curtin-Hammett scenario. Evidence is offered to suggest that this concept may represent a general phenomenon for pyrrolidine-based catalysts lacking an acidic directing proton. Implications for catalyst and reaction design are discussed.



Regents Professor Paul G. Gassman died in April 1993, at the age of 57. He was internationally know in the chemical community, and left behind a legacy of achievement. During his career, he served as mentor and adviser to 85 doctoral and master's candidates as well as dozens of postdoctoral associates and undergraduate students. Numerous awards, honors, and honorary degrees were bestowed in recognition of his contributions to research and his service to the scientific, professional, and university communities. Some of these awards include election to the National Academy of Sciences (1989) and to the American Academy of Arts and Sciences (1992); the James Flack Norris Award in Physical Organic Chemistry (1985); Arthur C. Cope Scholar Award (1986); and the National Catalyst Award of the Chemical Manufacturers Association (1990). He served as president of the American Chemical Society in 1990. He was co-chair of the organizing committees of the National Organic Symposium (1991) and the National Conferences on Undergraduate Research meeting (1992), on the University of Minnesota campus. It was his wish that a lectureship be established to bring distinguished organic chemists to the Department of Chemistry. We are proud to present this lecture series in his honor.