

Dr. H. Martin Friedman University Lecturers

- 2021 Shannon S. Stahl (University of Wisconsin-Madison)
- 2019 Ana Moore (Arizona State University)
- 2015 Dennis Curran (University of Pittsburgh)
- 2012 Geoff Coates (Cornell University)
- 2011 Thomas Mallouk (Pennsylvania State University)
- 2008 David Cane (Brown University)
- 2007 Josef Michl (University of Colorado at Boulder)
- 2006 Robert Stroud (University of California)
- 2005 Tobin J. Marks (Northwestern University)
- 2004 Harry Gray (California Institute of Technology)
- 2003 Peter Stang (University of Utah)
- 2001 Iwao Ojima (SUNY at Stony Brook)
- 2000 Samuel J. Danishefsky (Sloan Kettering Inst., & Columbia U.)
- 1999 Andrew D. Hamilton (Yale University)
- 1998 Jerrold Meinwald (Cornell University)
- 1997 Paul S. Anderson (DuPont Merck)
- 1996 James A. Marshall (University of Virginia)
- 1995 Madeleine M. Joullie (University of Pennsylvania)
- 1994 Kenneth B. Wiberg (Yale University)
- 1993 Jeffrey D. Winkler (University of Pennsylvania)
- 1992 Andrew S. Kende (University of Rochester)
- 1991 Julius Rebeck Jr. (Massachusetts Inst. of Technology)
- 1990 Craig A. Townsend (The John Hopkins University)
- 1989 Paul A. Grieco (Indiana University)
- 1988 Amos B. Smith III (University of Pennsylvania)
- 1987 Edward C. Taylor (Princeton University)
- 1986 Sir John Vane (Nobel Prize 1982, Wellcome Foundation, UK)
- 1985 Dietmar Seyferth (Massachusetts Inst. of Technology)
- 1984 Ronald Breslow (Columbia University)
- 1983 Leo A. Paquette (Ohio State University)
- 1982 Gilbert Stork (Columbia University)
- 1981 Bertram O. Fraser-Reid (University of Maryland)
- 1979 Perry A. Frey (Ohio State University)
- 1978 Barry M. Trost (University of Wisconsin)
- 1977 Clayton H. Heathcock (University of California)
- 1976 Koji Nakanishi (Columbia University)



Department of Chemistry

Dr. H. Martin Friedman
University Lecture

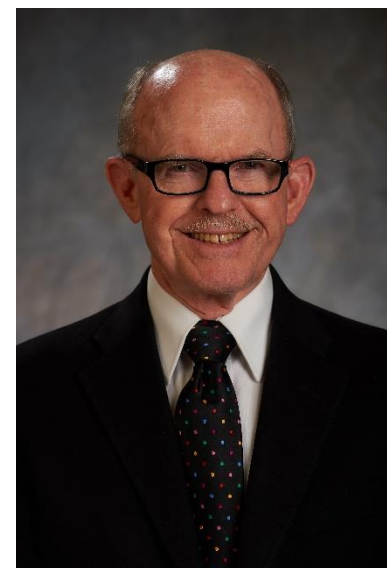
Presents:

*“Pericyclic Reactions: Theory, Mechanisms,
Dynamics, and Role in Biology”*

Friday, February 18, 2022 – 11:30 a.m.

Professor Kendall N. Houk

Department of Chemistry and Biochemistry
University of California, Los Angeles



Department of Chemistry

<https://sasr.rutgers.edu/chemistry>



Life Sciences Center II Room 130
197 University Ave., Newark, NJ

The Dr. H. Martin Friedman University Lecture

Dr. H. Martin Friedman (1915-2003) received his B.S. in Chemistry from Brooklyn College and his M.S. degree at New York University. Shortly thereafter, he and a colleague founded the Emkay Chemical Company, which produces specialty textile chemicals. While the company was growing, Dr. Friedman completed his PhD studies at the Department of Chemistry at Rutgers University-Newark. His 1972 doctoral thesis in synthetic organic chemistry, under the direction of Prof. I. Rothberg, involved Friedel-Crafts electrophilic substitution reactions of naphthalene and benzene with alkene-derived carbocations. In 1975, he sponsored the *Dr. H. Martin Friedman University Lecture*, which is delivered annually by a distinguished synthetic chemist from either academia or the chemical industry.

Emkay Chemical Company: Established in Elizabeth, NJ as a manufacturer of specialty Chemicals. The location was chosen for its close proximity to strategic shipping points and access to technology and markets up and down the East Coast. While the company's markets and product lines have changed over the years, the manufacturing base established in Elizabeth has remained the focal point of the company. Emkay's versatility in manufacturing and product development has been strong over the past 55 years allowing the company to grow and change with its customers and markets. Emkay's strategy has been to develop strong bonds with its customers and establish long-term relationships.

2022 Friedman Lecturer: Professor Kendall N. Houk

K. N. Houk received his A.B., M.S., and Ph.D. degrees at Harvard, working with R. B. Woodward on experimental tests of orbital symmetry selection rules. In 1968, he joined the faculty at Louisiana State University, moved to the University of Pittsburgh in 1980, and to UCLA in 1986. From 1988-1990, he was Director of the Chemistry Division of the National Science Foundation. Professor Houk has been the recipient of numerous highly prestigious honors, among them the Arthur C. Cope Award, the Roger Adams Award of the ACS, which is the highest award in organic chemistry by the ACS, as well as election to the National Academy of Sciences, to name just three. Professor Houk is an authority on theoretical and computational organic chemistry. His group is involved in developments of rules to understand reactivity, computer modeling of complex organic reactions, and experimental tests of the predictions of theory. He collaborates prodigiously with chemists all over the world and has published over 1400 publications.

Pericyclic reactions were defined by Woodward and Hoffmann in the 1960s. Pericyclic reactions are concerted processes involving a cyclic reorganization of bonding. I will describe computational studies focusing on four recent discoveries: 1) defining mechanisms of these reactions in terms of dynamics of bonding changes; 2) finding ambimodal polypericyclic transition states that give more than one product; 3) explaining orbital symmetry forbidden reactions that nevertheless occur readily; and 4) identifying the role of pericyclic reactions in biosynthesis, catalyzed by a class of enzymes that we have named pericyclases.