The Stan Brown Lecture Series

Stan Brown was born in High River, Alberta, and attended the University of Alberta for his B.Sc. (1964-1968) where he graduated with first class standing. Following undergraduate studies, Stan headed south to the UC, San Diego where he obtained his M.Sc. and then Ph.D. in chemistry (1968-1972) with the late Teddy G. Traylor. It was here that Stan's fascination with reaction mechanisms took root as he made seminal discoveries in the 'vertical' stabilization of cations by s-bonds. Stan then moved on to the great Ronald Breslow's lab at Columbia University for postdoctoral work where he studied enzyme mimetic reactions. This would become a research theme throughout his academic career. In 1974 Stan returned to U of A to begin his independent research career where he rose to the position of full Professor in 1984. Over 21 years at U of A the Brown lab flourished, carving out major discoveries in photoelectron spectroscopy of bonding, substituent effects on ionization potentials, the hydrolysis of amides, acyl and phosphoryl transfer reactions, and enzyme model systems involving metal ions. His research also addressed the formation of the bromonium ion, and in 1994 his lab managed to obtain the X-ray crystal structure of a stable version of this iconic intermediate. In 1995 Stan was ready for a new challenge and moved his lab to Queen's University to become Head of the Department of Chemistry (1995-2001). During his time as Head, Stan further shaped the future of our department by orchestrating the hiring of Gang Wu, Hugh Horton, Hans-Peter Loock, Richard Oleschuk, Stephen Brown, Suning Wang, Natalie Cann, Victor Snieckus and Cathleen Crudden. At Queen's, Stan and his team developed a series of enzyme inspired, metal ion-based catalysts that accelerated the solvolysis of esters, amides, and phosphate esters. This discovery had immediate applications for the destruction of stockpiles of chemical warfare agents like VX and Soman, which quickly garnered the attention of the United States Army, and led to several patents. Over his research career, Stan has authored over 180 publications, 10 book chapters, and delivered more than 110 invited seminars. Stan holds a tremendous record of service in the Chemistry community, which has won him many awards over the years, including two Killam awards, the Syntex Award (CSC), the Alfred Bader Award (CSC), the Queen's Chemistry 'Prof of the Year', the Queen's University Prize, the Queen's University Award for Excellence in Graduate Student Supervision (2016), the R.U. Lemieux Award (CSC), the Montreal Medal (CIC), and the Catalysis Award (CIC). Stan is a fellow of the Chemical Institute of Canada, the Royal Society of Canada, and the International Union of Pure and Applied Chemistry.

PREVIOUS DR. STAN BROWN LECTURERS

2024 • S. J. Booker

2024 • K. Plaxco

2023 • J. W. Keillor

2023 • R. J. M. Goss

2020 • P. Schreiner

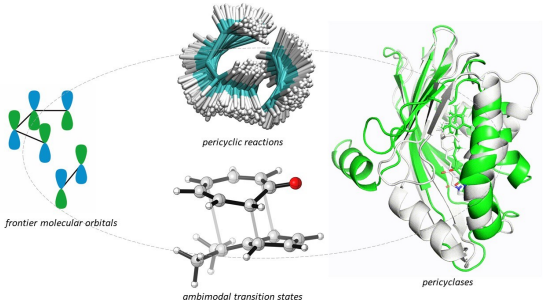
Queen's Chemistry

The Department of Chemistry, Queen's University

is honoured to host the
2025 Stan Brown Lecture:

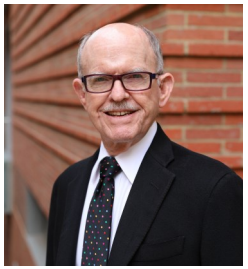
Dr. Kendall N. Houk
UCLA

"Evolution of Physical Organic Chemistry:
Advances in Computations, Pericyclic Reactions, and Pericyclases"



Friday, September 19, 2025
11:30 AM
Room 117, Chernoff Hall

DR. KENDALL N. HOUK



Kendall N. Houk
Department of Chemistry and Biochemistry
UCLA

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. He was Chairman of the UCLA Department of Chemistry and Biochemistry from 1991-1994. He was the Saul Winstein Chair in Organic Chemistry from 2009-2021 and is now Distinguished Research Professor.

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. Among current interests are the theoretical investigations of reaction mechanisms, the design of enzymes for non-natural reactions, the quantitative modeling of asymmetric reactions used in synthesis, the dynamics and catalytic mechanisms of enzymes, and the mechanisms and dynamics of pericyclic reactions. He has published over 1600 publications and a physical organic chemistry textbook with Pierre Vogel. He has an h-index of 154.

SELECTED HONORS & AWARDS

- Arthur C. Cope Scholar Award (2009)
- Elected member of the National Academy of Sciences (2010)
- Fellow of the Royal Society of Chemistry (2012)
- Roger Adams Award in Organic Chemistry (2021)
- Elected member of the Chinese Academy of Sciences (2021)
- RSC Horizon Prize (2024)
- Prix Franco-Américain (2024)

SELECTED RECENT PUBLICATIONS

- A 21st Century View of Allowed and Forbidden Electrocyclic Reactions. Q. Zhou, G. Kukier, I. Gordiy, R. Hoffmann, J. I. Seeman, K. N. Houk. *J. Org. Chem.* **2024**, *89*, 1018.
- Exploring Reaction Dynamics Involving Post-Transition State Bifurcations Based on Quantum Mechanical Ambimodal Transition States. C. C. Lam, K. N. Houk. *Pure App. Chem.* **2025**, Early Access Article.