A Retirement Celebration Honoring

Prof. Robert K. Boeckman, Jr.

Symposium

Lander Auditorium, 9:00 am – 5:00 pm

Lunch

Munnerlyn Atrium, 12:30 pm

Cocktail Reception/Dinner

Oakhill Country Club, 6:30 pm

BIOGRAPHY OF
ROBERT K. BOECKMAN, JR.

Robert K. Boeckman, Jr. was born August 26, 1944 in Pasadena, California. After early schooling in Dayton, Ohio, he received his Bachelors of Science degree in Chemistry in 1966 from Carnegie Institute of Technology (now Carnegie Mellon University). He moved on to Brandeis University where he received the Ph.D. degree under the supervision of James B. Hendrickson and Ernest Grunwald in 1970. He then joined the research group of Gilbert Stork in 1970 as an NIH postdoctoral fellow. He began his academic career at Wayne State University in 1972, where he rose to the rank of Professor in 1979. In 1980, he joined the faculty of the University of Rochester where he is currently Marshall D. Gates Jr. Professor of Chemistry. In 1976, he was married to Mary H. Delton.

Among his academic honors are included an A.P. Sloan Fellowship, a Research Career Development Award from the National Institutes of Health, and an ACS Cope Scholar Award. He has been a Fellow of the Japanese Society for the Promotion of Science, was twice awarded an Alexander Von Humboldt Stiftung Research Prize for Senior Scientists, and named a Marshall Gates Scholar by the University of Rochester. He is an inaugural ACS Fellow and a Fellow of the AAAS. From 1997 until 2016, he served as an Associate Editor of the *Journal of Organic Chemistry*. He served as Chair of the Department of Chemistry at the University of Rochester from 2003-2013 and in 2009 received the William H. Riker University Award for Graduate Teaching from the U of Rochester.

His research interests lie primarily in the area of synthetic organic chemistry, both the development of new synthetic methodology, the total synthesis of complex substances of biological interest, and the medicinal chemistry of bisphosphonates and bisphosphonate drug conjugates. He has particularly focused on the development of stereocontrolled organic reactions, the development of new methods for asymmetric synthesis including catalytic asymmetric synthesis, the development of new methodology involving organometallic chemistry particularly catalysis of organic reactions using chiral organometallic complexes, and applications of conformational theory to the solution of complex stereochemical problems including the stereoselective creation medium ring-containing substances. He has coauthored with his students and postdoctoral associates about 150 research papers, and book chapters, principally in the area of synthetic organic chemistry.

Agenda

9:00 AM
Welcome — Todd Krauss
Professor and Chair of Chemistry Department

9:05 AM
Rick Danheiser
"New Cycloaddition and Annulation Strategies Based on Unusual Molecules"

10:05 AM
BREAK— Green Carpet Lounge

10:30 AM
André Charette
"New methodologies for the preparation of organic compounds in batch and in continuous flow"

11:30 AM
Larry Overman
"Fragment Coupling with Carbon Radicals"

12:00 PM
Lunch - Munnerlyn atrium

1:30 PM
Steven Weinreb
"Studies on the Total Synthesis of Indole Alkaloids"

2:30 PM
BREAK - Green Carpet Lounge

3:00 PM
Amos Smith
"Recent Synthetic and Medicinal Chemical Achievements in the Smith Group at Penn"

4:00 PM
Matthew Shair
"Reflections on What RKB Taught Me About Chemistry and Being a Scientist"


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Rick Danheiser

Massachusetts Institute of Technology

"New Cycloaddition and Annulation Strategies Based on Unusual Molecules"

Rick Danheiser received his undergraduate education at Columbia College. Professor Danheiser received his Ph.D. at Harvard University in 1978. His doctoral research (under the direction of E. J. Corey) involved the first total synthesis of the diterpene plant growth hormone gibberellic acid. Dr. Danheiser joined the faculty of the Massachusetts Institute of Technology in 1978 and at present is the Arthur C. Cope Professor of Chemistry. Current investigations in his laboratory involve the development of new strategies for the synthesis of complex molecules and their application in the total synthesis of natural products. Another focus of research in the Danheiser laboratory involves the development of methods for the synthesis of polycyclic aromatic compounds with unusual spectroscopic and electronic properties. "Green chemistry" represents another area of interest in the Danheiser group. Investigations in this area include the development of environmentally friendly methods for organic synthesis using water and carbon dioxide as reaction media, and the total synthesis of semiochemicals with potential utility as environmentally benign pest control agents. In collaboration with Professor William Roush, Dr. Danheiser developed an intensive "short course" on "Recent Advances in Organic Synthesis Methodology" which has been presented at more than twenty-five companies in the U.S. and Europe during the past twenty years.

In recent years Professor Danheiser served as a consultant for several universities on matters involving laboratory safety.

André Charette

Université de Montréal

"New methodologies for the preparation of organic compounds in batch and in continuous

André B. Charette was born in 1961 in Montréal and received his B.Sc. in 1983 from the Université de Montréal. He then moved south of the border to the University of Rochester to continue his graduate studies. Under the supervision of Robert K. Boeckman Jr., he completed the total synthesis of the ionophore calcimycin, which earned him the degrees of M.Sc. (1985) and Ph.D. (1987). Following an NSERC postdoctoral fellowship at Harvard University with D. A. Evans, he began his academic career at the Université Laval (Quebec City) in 1989. In 1992, he joined the Université de Montréal, where he has been promoted to the rank of Full Professor since 1998. With a record of close to 200 publications and numerous invited lectures throughout the world, Prof. Charette has achieved worldwide recognition in his field.

His research lies primarily in the development of new methods for the stereoselective synthesis of organic compounds and natural products. He has devised conceptually novel approaches to catalyst and reaction design with important applications in the synthesis of chiral cyclopropanes, amines and heterocyclic derivatives. Among his recent honors are the CSC Alfred Bader Award (2009), the Prix Marie Victorin of the Government of Quebec (2008) and an ACS Arthur C. Cope Award (2007). His scientific and leadership abilities have been rewarded by the establishment of two chairs: the NSERC/Merck Frosst/ Boehringer Ingelheim Industrial Chair in Stereoselective Drug Synthesis (2000-2010) and the Canada Research Chair in Stereoselective Synthesis of Bioactive Molecules (2005-).

Larry Overman

University of California — Irvine

"Fragment Coupling with Carbon Radicals"

Larry E. Overman is Distinguished Professor of Chemistry at the University of California, Irvine. He was born in Chicago in 1943. Overman obtained a B.A. degree from Earlham College in 1965, and he completed his Ph.D. in chemistry from the University of Wisconsin–Madison in 1969, under Howard Whitlock Jr. Professor Overman is a member of the United States National Academy of Sciences and the American Academy of Arts and Sciences. He was the recipient of the Arthur C. Cope Award in 2003, and he was awarded the Tetrahedron Prize for Creativity in Organic Chemistry for 2008.

Overman's research is focused on the development of new chemical reactions, particularly transition metal catalyzed reactions, and the application of those reactions toward the synthesis of natural products. Overman is most known for the Overman rearrangement, a Claisen rearrangement of allylic alcohols to give allylic trichloroacetamides.

Larry Overman began his career at University of California, Irvine in June 1971. The Irvine graduate program was small and thus in his early work Overman frequently performed experiments himself, including his initial discovery of the Overman rearrangement. Palladium emerged as the metal of choice for this reaction, and this led to a long-term interest in palladium catalysis, including the palladium(II)-catalyzed Cope rearrangement, and later work on intramolecular cascading Heck reactions.

Steven Weinreb

Penn State University

"Studies on the Total Synthesis of Indole Alkaloids"

Steven M. Weinreb, Russell and Mildred Marker Professor of Natural Products Chemistry at Penn State, obtained an AB degree from Cornell University, and received his doctorate from the University of Rochester with Marshall Gates in 1967. He had NIH-sponsored postdoctoral fellowships at Columbia University during 1966-67 with Gilbert Stork and at MIT during 1967-70 with George Buchi.

He began his independent scientific career at Fordham University in New York City as an Assistant Professor of Chemistry in 1970, and was promoted to Associate Professor in 1975. He joined the faculty at Penn State in 1978, and was appointed Professor of Chemistry in 1980. He was named Marker Professor in 1987. Dr. Weinreb was Head of the Department of Chemistry at Penn State from 1994 to 1998 and served as Interim Dean of the Eberly College of Science in 1998. He has served on a number of editorial boards and is currently the Executive Editor of *Organic Reactions*.

Professor Weinreb's research is on the total synthesis of natural products, heterocyclic chemistry, and the development of synthetic methods. He has published about 250 articles on these subjects.

Amos Smith

University of Pennsylvania

"Recent Synthetic and Medicinal Chemical

Amos B. Smith, III, born in Lewisburg, PA in 1944, received Bucknell University's first combined B.S.-M.S. degree in chemistry (1966) under the direction of Professor Harold W. Heine. After a year in Medical School at the University of Pennsylvania, he entered Rockefeller University, completing his Ph.D. degree (1972) and a year as a Postdoctoral Associate with Professor William C. Agosta. In 1973 he joined the Department of Chemistry at the University of Pennsylvania where he is currently the Rhodes-Thompson Professor of Chemistry and a Member of the Monell Chemical Senses Center. From 1988-1996 he was Chair of the Department. In addition, Professor Smith served as the inaugural Editor-in-Chief of *Organic Letters* (1999-2018).

His research interests include the design of new synthetic methods and their application to the construction of architecturally complex natural products, bioorganic/medicinal chemistry related to the inhibition of HIV-1 viral infection and possible eradication, and peptide/protein folding via stapling and unstapling. In each of these programs, Smith and his group exploit the power of "state of the art" organic synthesis to provide solutions to problems of importance for the improvement of human health.

Matthew Shair

Harvard University

"Reflections on What RKB Taught Me About

Matthew Shair is a Professor in the Department of Chemistry and Chemical Biology at Harvard University, an associate of the Broad Institute and an affiliate of the Harvard Stem Cell Institute. He obtained his BS in Chemistry from the University of Rochester (1990), working in the lab of Professor Robert Boeckman Jr. He obtained his PhD from Columbia (1995) with Professor Sam Danishefsky and he was a postdoc with Professor Stuart Schreiber at Harvard (1996-1997). Matthew was an Asst Prof at Harvard in 1997, and he was awarded tenure in 2002. His lab studies the mechanistic basis of human diseases, identifies new targets, and develops small molecule therapeutics.

His laboratory has discovered that inhibition of CDK8 and CDK19 is a new therapeutic approach to acute myeloid leukemia (AML) involving unanticipated effects on transcription of cell identity genes. He has also used small molecules to discover that oxysterol-binding proteins are a druggable dependency of solid tumor cells. He has been a founder of several biotech companies including Nuvalent Therapeutics, Infinity Pharmaceuticals (Nasdaq: INFI), Makoto Life Sciences and Chemiderm. He has also been an advisor to Ariad, Enanta, Bristol-Myers Squibb and Novartis. Molecules created in his lab for the treatment of blood cancers have been licensed by Merck in one of the largest licensing deals of an academic preclinical asset.


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Published by the
Department of Chemistry
University of Rochester
www.chem.rochester.edu