

ALPHA DELTA CHAPTER OF
PHI LAMBDA Upsilon

presents the

63RD OTTO M. SMITH
BANQUET

with guest lecturer

DR. CHRISTOPHER CUMMINS

Professor of Chemistry

Massachusetts Institute of Technology

MARCH 7, 2014

EVENING PROGRAM

WELCOME

MASTER OF CEREMONIES:
RANGIKA HIKKADUWA

DR. FRANK D. BLUM

RECOGNITION OF DR. OTTO M. SMITH

PRESENTATION OF AWARDS

RECOGNITION OF GRADUATE
ACCOMPLISHMENTS

O.C. DERMER SCHOLARSHIP
PRESENTED BY:
DR. KENNETH D. BERLIN

LIONEL M. RAFF SCHOLARSHIP
PRESENTED BY: DR. FRANK BLUM

PRESENTATION BY
DR. CHRISTOPHER CUMMINS

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DR. CHRISTOPHER CUMMINS

Christopher "Kit" Colin Cummins was born in Boston, Massachusetts, and grew up also in New Orleans, Louisiana and then in Bloomington, Minnesota. As a young man his interests included reading, raising butterflies, farming, fishing, canoe expeditions, sailing, gymnastics, and diving. In college, Kit benefited from formative undergraduate research experiences carried out sequentially in the laboratories of Professors Susan E Kegley, James P Collman, and Peter T Wolczanski, respectively of Middlebury College, Stanford University and Cornell University. He graduated from the latter institution with an AB degree in 1989. Following this he undertook inorganic chemistry graduate studies under the direction of Professor Richard R. Schrock at the Massachusetts Institute of Technology, from which he obtained his PhD degree in 1993 with a thesis entitled "Synthetic Investigations Featuring Amidometallic Complexes".

Also in 1993 Kit joined the MIT chemistry faculty as an Assistant Professor (promoted to Professor in 1996) and launched an independent program of research devoted to exploratory synthetic inorganic chemistry. Highlights from this work include low-coordinate, anilide-supported complexes of the early metals titanium, vanadium, niobium, chromium, molybdenum, and also uranium, and novel small-molecule (N_2 , NO, N_2O , CO, CO_2 , P_4 , RN_3 , RCN, arene) activation reactions effected by the new complexes. A related effort has been the development of methods for the generation of unsaturated nitrogen - and phosphorus-containing ligands and reactive intermediates, ultimately providing access to AsP3 and organo-phosphorus compounds efficiently starting from P_4 , and organic nitriles starting from N_2 . Another line

of inquiry seeks a convergence of anion receptor chemistry, small molecule (O_2 , NO) redox, and coordination chemistry.

THE OTTO M. SMITH LECTURESHIP

The emphasis on technology and science today demands that individuals keep abreast of rapid change in their fields of study. The exposure to concepts and ideas in various specialized areas of interest is mandatory at the university level. Lectureships in which noted philosophers, outstanding research investigators and famous statesman present important ideas and concepts in a given area, are, therefore, extremely valuable to the university community.

With this advantage in mind, the Alpha Delta Chapter of Phi Lambda Upsilon originated the Otto M. Smith Lectureship, which features prominent personalities in chemical research as guest lecturers. The lectureship was begun in 1948 to serve the academic and industrial research interest in the central Oklahoma area and to honor Dr. Otto M. Smith, then Director of the Research Foundation of Oklahoma Agricultural and Mechanical College, professor, and head of the Department of Chemistry and Chemical Engineering.

After obtaining his B.S. degree from Drury College in 1907 and his Ph.D. from the University of Illinois in 1919, Dr. Smith was actively involved in areas of chemical research and chemical education, his contributions in these areas are indicative of his ardent love of chemistry. After some industrial experience, his academic career began in 1923 when Dr. Smith became a faculty member at Oklahoma A & M College. Ultimately, Dr. Smith became head of the Department of Chemistry and Chemical Engineering. During his years of tenure, the faculty and staff in these two areas showed remarkable improvement. In chemistry, the faculty size increased from five to nineteen members. In chemical engineering, the faculty size increased from no one specialized in chemical engineering to six members. In addition,

the Department of Chemistry was approved by the ACS Committee of Professional Training. The Department of Chemical Engineering was accredited by the American Institute of Chemical Engineers. Having attained such progress in these two areas, Dr. Smith was named Director of the Research Foundation in 1946 and remained in that position until his retirement in 1956.

Dr. Smith was a member of several professional societies including Phi Lambda Upsilon, the American Chemical Society, American Institute of Chemical Engineers, and Sigma Tau. While an active member of these organizations, Dr. Smith organized the Pacific Southwest Association of Chemistry Teachers in an effort to carry the influence of the ACS Division of Chemical Education to professionals in that area. Dr. Smith was instrumental in establishing the Scientific Apparatus Makers Award in Chemical Education, which he received in 1956.

Dr. Smith was involved in organizing the ACS and National Science Foundation Summer Teaching Institutes. The Chemistry Workshops for College Teachers were begun in 1950 and were the result of Dr. Smith's efforts. These workshops have now been expanded to include other fields in addition to chemistry.

Dr. Smith became the chairman of the ACS Division of Chemical Education Committee on Examinations and Tests when the committee was organized in 1930 and remained in that capacity until his resignation sixteen years later. The committee prepares and distributes standardized tests in chemical fields to be used by chemistry teachers throughout the nation.

Dr. Smith also found time for research and textbook writing. His publications include many papers in chemical education. He was also the co-author of a semi-micro scale laboratory manual for beginning students in chemistry, and a reference work on water quality in the state of Oklahoma.

THE HISTORY OF PHI LAMBDA UPSILON

Phi Lambda Upsilon was founded as an honorary chemical society in March 1899 at the University of Illinois. It has the distinction of being the first honor society dedicated to a single scientific discipline. Three seniors majoring in chemistry founded the society: Horace C. Porter, Paul F. Rudnick and Fred C. Koch. Professors Arthur W. Palmer, Harry S. Grindly and Samuel W. Parr assisted them in their endeavor. The aims and purposes of Phi Lambda Upsilon have stood unchanged since its inception: "the promotion of high scholarship and original investigation in all branches of pure and applied chemistry." Members of the society are encouraged to follow in the footsteps of three guiding spirits: Carl Remigius Fresenius, the founder of Zeitschrift fur Analytische Chemie, considered the father of agricultural chemistry; Justus von Liebig, a man who greatly influenced the field of organic chemistry who penned the primary tome Annalen der Chemie; and Jacobus Henricus van't Hoff, founder of Zeitschrift fur Physikalische Chemie and recipient of the first Nobel Prize awarded to a chemist.

Phi Lambda Upsilon became a national organization in 1911 and today the society boasts over 60,000 members belonging to more than 60 chapters. The Alpha Delta chapter at OSU was founded in 1929 by the members of Chi Sigma, following petitioning and recommendations from several individuals, including Otto M. Smith, charter member of the Theta chapter. It was this dedication to the university and Phi Lambda Upsilon that made him the namesake of the banquet you are attending this evening. The Alpha Delta chapter of Phi Lambda Upsilon continues to move forward and looks upon the future with great anticipation.

OTTO M. SMITH GUEST LECTURERS

1949	Dr. Otto M. Smith
1950	Dr. Harrison Hale, University of Arkansas
1953	Dr. George Glocker, University of Iowa
1954	Dr. Alan T. Waterman, NSF
1955	Dr. Philip West, St. Louis University
1956	Dr. Henry Eyring, University of Utah
1957	Dr. Joseph Kaplan, UC Los Angeles
1958	Dr. H. C. Brown, Purdue University
1959	Dr. R. A. Alberty, University of Wisconsin
1960	Dr. John Bailar, University of Illinois
1961	Dr. Fred Spedding, Iowa State University
1962	Dr. John Roberts, California Inst. of Tech.
1963	Dr. Daniel E. Koshland, Brookhaven Nat. Labs
1964	Dr. Leo Brewer, UC Berkeley
1965	Dr. A. J. Birch, Sydney University
1966	Dr. K. S. Pitzer, Rice University
1967	Dr. Sol Spiegelman, University of Illinois
1968	Dr. Henry Freiser, University of Arizona
1969	Dr. C. J. Ballhausen, University of Copenhagen
1970	Dr. Carl Djerrassi, Stanford University
1971	Dr. Bruno H. Zimm, UC San Diego
1972	Dr. John T. Edsall, Harvard University
1973	Dr. H. A. Laitinen, University of Illinois
1975	Dr. Henry M. Rosenstock, Nat. Bur. of Standards
1976	Dr. Stanford Moore, Rockefeller University
1977	Dr. David Hercules, University of Pittsburgh
1978	Dr. Jerrold Meinwald, Cornell University
1979	Dr. James N. Pitts, UC Riverside
1980	Dr. Arthur Korberg, Stanford University
1981	Dr. A. K. Skogerboe, Colorado State University
1982	Dr. Fred Basolo, Northwestern University

1983 Dr. Kenneth Rinehart, University of Illinois
1984 Dr. Robert W. Parry, University of Utah
1985 Dr. Gabor A. Somorjai, UC Berkeley
1986 Dr. Allen J. Bard, University of Texas, Austin
1987 Dr. Marlene DeLuca, UC San Diego
1988 Dr. Nelson J. Leonard, University of Illinois
1989 Dr. William H. Miller, UC Berkeley
1990 Dr. Robert J. Angelici, Iowa State University
1991 Dr. James P. Coleman, Stanford University
1992 Dr. Gary K. Ackers, Washington University
1993 Dr. Barry L Karger, Northeastern University
1994 Dr. Joseph A. Nibler, Oregon State University
1995 Dr. Walter G. Klemperer, University of Illinois
1996 Dr. Helmut Ringsdorf, Mainz University
1997 Dr. Laurence H. Hurley, University of Texas, Austin
1998 Dr. Stanley R. Crouch, Michigan State University
1999 Dr. Curt Wittig, University of S. California
2000 Dr. Tristram Chivers, University of Calgary
2001 Dr. William Bonner, National Cancer Institute
2002 Dr. Dennis Curran, University of Pittsburgh
2003 Dr. Norman Dovichi, University of Washington
2004 Dr. Stephen Leone, UC Berkeley, LBNL
2005 Dr. Tobin Marks, Northwestern University
2006 Dr. C. Grant Wilson, University of Texas, Austin
2007 Dr. Bruce A. Roe, University of Oklahoma
2008 Dr. David E. Wemmer, Univ. California Berkley
2009 Dr. Peter Beak, University of Illinois
2010 Dr. Robert F. Curl, Rice University
2011 Dr. Fred Regnier, Purdue University
2012 Dr. Peter Sherwood, Oklahoma State University
2013 Dr. Alan G. Marshall, Florida State University
2014 Dr. Christopher Cummins, MIT