Friend E. Clark Lecture Series

The Friend E. Clark Lecture Series is co-sponsored by the Tau Chapter of Phi Lambda Upsilon Chemistry Honorary and the C. Eugene Bennett Department of Chemistry of West Virginia University and was initiated in 1950. A list of the past speakers for this Lecture Series is tabulated below and includes a number of Nobel Laureates and prominent research scientists. The original purpose of this activity, as proposed by Charles Wheeler, then President of Tau Chapter of PLU in 1948, was to bring an outstanding research scientist annually to campus for two days to share his or her research interests and accomplishments with the students and faculty at the University. The department did not have a formal departmental seminar program until 1969. His idea is now a tradition.

The past Clark Lecturers include W. Conard Fernelius (Penn State), C. C. Price (Notre Dame), Ludwig F. Audrieth (Illinois), Herbert C. Brown (Purdue), Peter J. W. Debye (Cornell), Joel H. Hildebrand (California-Berkeley), N. Howell Furman (Princeton), H. G. Drickhamer (Illinois), John C. Bailar, Jr. (Illinois), Louis F. Fieser (Harvard), Max Lauffer (Pittsburgh), Robert A. Alberty (Wisconsin-Madison), Eugene G. Rochow (Harvard), Richard S. Brokaw (NASA), Daryl Busch (Ohio State), Ernest L. Eliel (Notre Dame), Charles N. Reilley (North Carolina-Chapel Hill), Edward C. Lingafelter (Washington), Ronald J. Gillespie (McMaster), Roald Hoffmann (Cornell), L. B. Rogers (Purdue), Harry B. Gray (Cal Tech), W. Albert Noyes (Texas), Frank H. Westheimer (Harvard), Herbert A. Laitinen (Florida), Fred Basolo (Northwestern), R. Bruce Merrifield (Rockefeller), Orville Chapman (Iowa State), Dudley Herschbach (Harvard), Theodore L. Brown (Illinois), Velmer A. Fassel (Iowa State), Nicholas J. Turro (Columbia), Richard N. Zare (Stanford), F. Albert Cotton (Texas A&M), Allen J. Bard (Texas), John D. Roberts (Cal Tech), John Ross (Stanford), R. Graham Cooks (Purdue), Richard H. Holm (Harvard), Barry Trost (Stanford), Jerome and Isabella Karle (Naval Research Laboratory), James Jorgenson (North Carolina - Chapel Hill), Louis S. Hegedus (Colorado State University), Maurice S. Brookhart (North Carolina - Chapel Hill), Eric Heller (Harvard) and Robert F. Kennedy (Michigan).

47th Friend E. Clark Lecture Series

sponsored by

Phi Lambda Upsilon Chemistry Honorary
C. Eugene Bennett Department of Chemistry

presents

Professor John F. Hartwig

Kenneth L. Rinehart Jr. Professor of Chemistry

Department of Chemistry
School of Chemical Sciences
University of Illinois at Urbana-Champaign

"The organometallic chemistry of metal-heteroatom bonds"
March 12, 2007, 5:00 p.m., Clark Hall 208

and

"Catalyst Design in Chemistry and Beyond"
March 13, 2007, 4:00 p.m., Hodges Hall 260

Professor John F. Hartwig

John F. Hartwig was born outside of Chicago in 1964, and was raised in upstate New York. He received a B.A. degree in 1986 from Princeton University, and a Ph.D. degree in 1990 from the University of California, Berkeley under the collaborative direction of Robert Bergman and Richard Andersen. After an American Cancer Society postdoctoral fellowship with Stephen Lippard, he was assistant, associate, full and finally Irénée P. duPont Professor of Chemistry at Yale University before joining the chemistry faculty at UIUC in 2006, where he is currently the Kenneth L. Rinehart Jr. Professor of Chemistry.

Professor Hartwig's research focuses on the discovery and understanding of new reactions catalyzed by transition metal complexes. He has developed a selective catalytic functionalization of alkanes, a method for formation of arylamines and aryl ethers from aryl halides or sulfonates, a method for the direct conversion of carbonyl compounds to α-aryl carbonyl derivatives, a system for the catalytic addition of amines to vinylarenes and dienes, and highly selective catalysts for the regio and enantioselective amination of allylic carbonates. With each system, his group has conducted extensive mechanistic investigations. He has revealed several new classes of reductive eliminations, has isolated discrete compounds that functionalize alkanes, and has reported unusual three-coordinate arylpalladium complexes that are intermediates in cross-coupling.

Professor Hartwig received the American Chemical Society Award in Organometallic Chemistry in 2006, the Chemistry Thieme-IUPAC award in Synthetic Organic Chemistry in 2004, the Leo Hendrik Baekeland Award in 2003, the A.C. Cope Scholar Award in 1998, the Camille Dreyfus Teacher-Scholar Award in 1997, a Union Carbide Innovative Recognition Award in 1995 and 1996, the National Science Foundation Young Investigator Award in 1994, and both Dupont and Dreyfus Foundation New Faculty Awards in 1992. He was the 2006 Dalton lecturer at UC Berkeley, the 2001 Carl Ziegler lecturer at Mulheim,the first Astra-Zeneca lecturer in Stockholm (2000), and the 1998 R.C. Fusan lecturer at the UIUC .

"The organometallic chemistry of metal-heteroatom bonds"

Organometallic chemistry, by definition, focuses on the synthesis, structures, and reactions of complexes with metal-carbon bonds. My group has sought to extend the reach of organometallic chemistry to related compounds containing metal-nitrogen, -oxygen, -sulfur, and –boron bonds. To do so, we have sought examples of amido, alkoxo, thiolato, and boryl compounds that undergo some of the fundamental reactions of organometallic chemistry. While doing so, we have sought to understand how the electronic properties of the heteroatom will affect reactions that originated with compounds containing metal-carbon bonds. Examples of these reactions and the electronic parameters that affect the rates and scope of these reactions will be presented in this talk, along with relevance of these reactions to emerging synthetic methods.

"Catalyst Design in Chemistry and Beyond"

From Prozac to perfume, sutures to Subarus, catalysis provides the high quality of life to which we have become accustomed. The reduced emissions of modern cars, the abundance of fresh food at our stores, and the new pharmaceuticals that improve our health are made possible by chemical reactions controlled by catalysts. Catalysts make chemical reactions occur faster and more selectively; in most cases the reactions they induce in minutes or hours would take entire geological periods to occur in their absence. Research in my group seeks to invent new chemical reactions that occur by the action of catalysts containing a metal atom, such as rhodium, iridium, or palladium, as the central and reactive element. Perhaps most important, research in my group seeks to develop the principles and strategies by which catalysts can ultimately be designed. Examples of the role of catalysts in general, and examples of the development of catalysts within my group will be described in this lecture.