



American Chemical Society Susquehanna Valley Section

OCTOBER 2012 NEWSLETTER

The four hundred and fifth meeting of the American Chemical Society Susquehanna Valley Section will be held on Thursday, October 18, 2012 in Room 101 of the Stark Learning Center on the Wilkes University campus. The meeting will begin at 7:00 PM and will be followed by a reception. The speaker will be Dr. Roald Hoffmann of Cornell University.

Catherine H. Bone Lecture in Chemistry

"The Chemical Imagination at Work in Very Tight Places"

Roald Hoffmann
Frank H. T. Rhodes Professor of Humane Letters Emeritus
Cornell University

Diamond anvil cells now permit the study of matter under multimegabar (i.e. several hundred GPa) pressures. The properties of matter in this pressure regime differ drastically from those known at 1 atm. Just how different chemistry is at high pressure and the role that a chemical intuition for bonding and structure can have in understanding matter at high pressures will be explored in this lecture. I will discuss in detail an overlapping hierarchy of responses to increased density, consisting of (a) squeezing out van der Waals space (for molecular crystals); (b) increasing coordination; (c) decreasing the bond length of covalent bonds and the size of anions; and (d) an extreme regime of electrons moving off atoms and new modes of correlation. Examples of the startling chemistry and physics that emerge under such extreme conditions will alternate in this account with qualitative chemical ideas about the bonding involved.

Roald Hoffmann was born in 1937 in Zloczow, Poland. Having survived the war, he came to the U. S. in 1949, and studied chemistry at Columbia and Harvard Universities (Ph.D. 1962). Since 1965 he is at Cornell University, now as the Frank H. T. Rhodes Professor of Humane Letters Emeritus. He has received many of the honors of his profession, including the 1981 Nobel Prize in Chemistry (shared with Kenichi Fukui). "Applied theoretical chemistry" is the way Roald Hoffmann likes to characterize the particular blend of computations stimulated by experiment and the construction of generalized models, of frameworks for understanding, that is his contribution to chemistry. The pedagogical perspective is very strong in his work. Notable at the same time is his reaching out to the general public; he participated, for example, in the production of a television course in introductory chemistry titled "The World of Chemistry," shown widely since 1990. And, as a writer, Hoffmann has carved out a land between science, poetry, and philosophy, through many essays and three books, "Chemistry Imagined" with artist Vivian Torrence "The Same and Not the Same and Old Wine" (translated into six languages), "New Flasks: Reflections on Science and Jewish Tradition," with Shira Leibowitz Schmidt. Hoffmann is also an accomplished poet and playwright. He began writing poetry in the mid-1970s, eventually publishing the first of a number of collections, "The Metamict State," in 1987, followed three years later by "Gaps and Verges," then "Memory Effects" (1999), "Soliton" (2002). A bilingual selection of his poems has appeared in Spanish. He has also co-written a play with fellow chemist Carl Djerassi, entitled "Oxygen," which has been performed worldwide, translated into ten languages. A second play by Roald Hoffmann, "Should've," has had several workshop productions since 2006; a new play, "We Have Something That Belongs to You," had its first workshop production in 2009. Unadvertised, a monthly cabaret Roald runs at the Cornelia Street Café in Greenwich Village, "Entertaining Science," has become the hot cheap ticket in NYC.

DINNER:

Dinner will be in the Henry Student Union Building Ballroom at 5:30 PM. It will be a buffet with a vegetarian option and dessert. The cost will be \$15 per person. Please RSVP to Amy Bradley by email at amy.bradley@wilkes.edu by October 15th.

DIRECTIONS TO WILKES UNIVERSITY:

Directions:

Take I-81 to Route 309 North (Exit 170B, Old Exit 47B). Follow Route 309 North to Exit 3 (Plains/River Street) and make a left onto River Street at the traffic light at the bottom of the exit ramp. Immediately after turning left onto River Street you will encounter the first of 9 traffic lights. Continue on River Street to the 9th light where you will turn left (east) onto South Street. The Henry Student Center (designated with an arrow on the campus map below) will be the second building on your right. Immediately to the left of the building (just after the crosswalk) is a driveway that leads to the parking lot.

The Stark Learning Center (designated with an arrow on the campus map below) is on River St. mid-block between Northampton and South Streets.

Parking:

To arrive at the Marts Center turn left onto Ross Street at the 10th traffic light after the ramp, and make a left onto Franklin Street at the next light. The Marts Center (274 South Franklin Street) will be on the right. There is a parking lot just past the gym on the left side of the street. This lot connects to the parking lot behind the Henry Student Union Building (also accessible by an entrance immediately past the Henry Student Union Building). You may also park in most other campus lots.



Detailed directions and maps can be found at: <http://www.wilkes.edu/pages/273.asp>.

Section Web Page: <http://departments.kings.edu/SusquehannaValleyACS>
