

The Blue Ridge Chemist

The Blue Ridge Chemist, since 1947 the
Official Local Section Publication of the
Virginia Blue Ridge Section, American Chemical Society



VIRGINIA BLUE RIDGE SECTION AMERICAN CHEMICAL SOCIETY

605th SECTION MEETING Hosted by Roanoke College

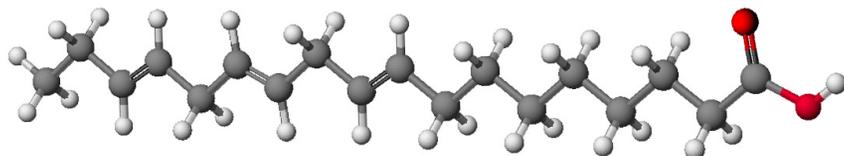
Thursday, January 18, 2007

VOLUME LX

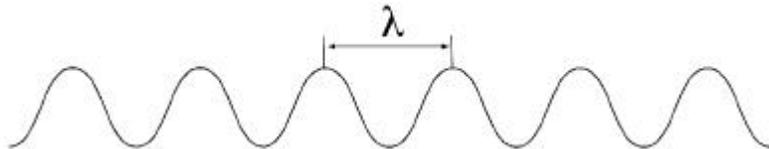
January 2007

No. 1

Molecular



Wave



Mechanics



Roanoke College Hosts the January Meeting

PROGRAM:

5:30-7:00 Dinner, Dynasty Restaurant
7:00-8:00 Talk, Massengill Auditorium,

The dinner will take place at the Dynasty International Supper Buffet on West Main Street in Salem. The talk will take place in Massengill Auditorium at Roanoke College. The speaker is Dr. Richard J. Field, speaking on "Erwin Schrodinger: The Discoverer (Inventor?) of Molecular Wave Mechanics".

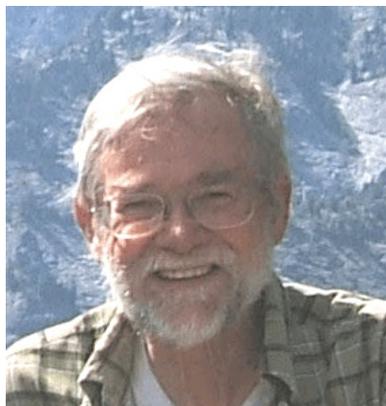
Dinner will be from the Chinese buffet and the Mongolian grill. For the Mongolian grill, you choose the ingredients and watch them being cooked. The cost for the buffet is \$8.29 with tea included. Soft drinks, wine, beer, mixed drinks, etc. are extra. Attire is casual.

Reservations for the dinner must be made by MONDAY, JANUARY 15, THREE DAYS before the meeting, by phoning Ben Huddle at 540-375-2440, or e-mailing huddle@roanoke.edu, or by mail to Ben Huddle, Department of Chemistry, Roanoke College, Salem, VA 24153; or by phoning Margaret Anderson at 530-375-2441, or e-mailing anderson@roanoke.edu.

<http://membership.acs.org/v/vbr>

Dr. Richard J. Field
University of Montana

Richard J. Field was born in Attleboro, MA in 1941. He received a B.S. degree from the University of Massachusetts-Amherst in 1963, an M.S. degree from the College of the Holy Cross in 1964, and a Ph.D. in physical chemistry from the University of Rhode Island in 1968. During 1968-74, he was a research associate with Richard M. Noyes at the University of Oregon (UO). He also was visiting assistant professor at UO (1970-73). During this time, he became interested in the Belousov-Zhabotinsky reaction. This is the usually metal-ion-catalyzed oxidation of organic materials by bromate ion, during which the concentrations of catalyst and intermediate species oscillate in time as the overall reaction rushes toward equilibrium. Traveling waves of chemical activity (conceptually equivalent to nerve-impulse transmission and other biological processes occurring in excitable media) appear in the same system. After spending 1974-75 at the Carnegie-Mellon Radiation Laboratory, he joined the University of Montana, Department of Chemistry in 1975, where he is now Professor Emeritus. He was chairman (1990-95). He served as visiting professor at the University of Notre Dame (1980) and at Universtat Wurzburg, Germany (1985-86), and was a member of the Editorial Advisory Board of The Journal of Physical Chemistry (1989-95) and International Journal of Chemical Kinetics (1997-2003). Although Dick Field is a chemical kineticist and as such is interested in any chemical system not at equilibrium, his major interests are in the area of oscillating chemical reactions. This work involves not only classical kinetics and mechanism studies but also mathematical simulations, using both numerical and analytical



methods, based on the systems of ordinary (time only) and partial (time and space) differential equations arising from models of oscillating chemical reactions. These systems are excellent examples of the remarkable behavior of systems maintained far from equilibrium and governed by nonlinear dynamic laws. From this work, he has developed an interest in mathematical biology, especially the mechanisms by which living organisms organize and evolve, as well as atmospheric and climate dynamics. Professor Field is also very interested in the history of physics and chemistry.

Erwin Schrodinger:
The Discoverer (Inventor?) of Molecular Wave Mechanics

This talk is based on a superb biography of Erwin Schrodinger (Schrodinger, Life and Work, by Walter Moore, Cambridge University Press, Cambridge, 1989). The ancestry, childhood, early adulthood, and early scientific work of Erwin Schrodinger is discussed. The development of quantum theory (wave mechanics) is qualitatively traced from Max Planck and black-body radiation to Einstein and Debye's low-temperature heat-capacity work, through Neils Bohr and the interpretation of atomic spectra, and finally to Peter Debye's suggestion to Erwin Schrodinger that substitution of the DeBroglie wavelength into a standard wave equation might lead to interesting results. I describe the extraordinary accomplishment of Erwin Schrodinger during Christmas break 1925 (spent in the company an unknown woman at a Swiss Gastehaus) in making this simple suggestion into the most powerful and in some ways most disturbing physical theory known to us. Erwin Schrodinger was one of the most influential thinkers of the 20th century. He was also one of the most interesting personalities of his time.

ACS Launches Social Networking Site

In late 2006, the American Chemical Society launched a new social networking site targeted to professionals, students, and researchers interested in and working in biotechnology.

BiotechExchange.org provides individuals the opportunity to meet, dialogue, discuss, debate, and interact with other researchers and professionals involved in discovery and process development for the pharmaceutical and bio-based materials industries. BiotechExchange.org provides a forum to share information, identify opportunities, and seek collaborations with fellow scientists and industry professionals.

Features on the site include:

- ? Pre-meeting information from event organizers
- ? On-site blogs from event attendees
- ? Virtual poster sessions (including peer-review)
- ? Audio casts, news feeds, and journal article summaries

In addition, the site will permit the creation of special interest groups. These enable smaller collections of individuals to gather and share specialized information of interest. More information regarding the creation of groups may be found at www.biotechexchange.org.

Mentors Wanted!

The U.S. National Chemistry Olympiad Invites You to Apply for the Mentor Position.

High School and College educators are invited to apply for a position as mentor for the U.S. National Chemistry Olympiad program. (Preference will be given to high school teachers). To learn more or to apply visit: www.chemistry.org/education/olympiad.html.

The goals of the U.S. National Chemistry Olympiad are:

- ? to stimulate all young people to achieve excellence in chemistry;
- ? to recognize outstanding chemistry students and, by doing so, encourage additional learning at a formative time in their intellectual development;
- ? to recognize the excellent achievement of the teachers of these students and the importance of the school environment in which they learn;
- ? to provide contact between ACS local sections and area schools and foster the interest and influence of professional chemists in the teaching of chemistry;
- ? to challenge the chemical knowledge and skills of young students in an international arena; and,
- ? to foster cross-cultural experiences and acquaint students with similarities and differences between themselves and their counterparts in other nations.

Call for Scholars Program Applications

The American Chemical Society Scholars Program is now accepting applications for the 2007-2008 academic year. Information and the applications documents can be found on our web site at <http://chemistry.org/scholars>. Applicants can now apply ON-LINE at the same web site!

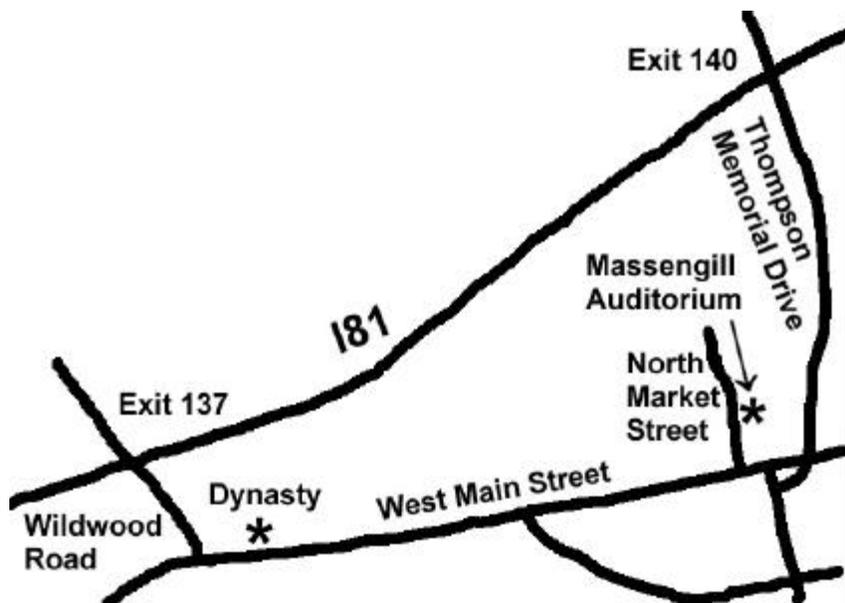
Alternatively, interested individuals can contact us by e-mail at scholars@acs.org; they can call toll-free 1-800-227-5558, extension 6250; or they can write to:

American Chemical Society
Scholars Program
1155 16th Street, N.W.
Washington, D.C. 20036

Directions to Dynasty International Supper Buffet, Salem

From I81 take exit 137 south on Wildwood Road to West Main Street. Turn left and the Dynasty is about one quarter of a mile on the left. It is just west of Wal-Mart. Roanoke College is about 2 miles east of the Dynasty. Turn left at North Market Street and Massengill Auditorium is less than one quarter of a mile on the right. For handicap access directions in Massengill, contact Vern Miller (miller@roanoke.edu) or Ben Huddle (huddle@roanoke.edu).

Map to Dynasty Restaurant and Massengill Auditorium



THE BLUE RIDGE CHEMIST
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The next Virginia Blue Ridge Section meeting will be held Thursday, February 22, at Hollins University. The speaker will be Dr. Robert Bates, speaking on food chemistry. The contact person is Dan Derringer.