



The Bulletin
of the
Virginia Section
AMERICAN CHEMICAL SOCIETY

FEBRUARY MEETING NOTICE

**University of Richmond
Richmond, Virginia**

Friday, February 8, 2008

**POWELL
RECEPTION:** **6:00 p.m.**
Alice Haynes Room
Tyler Haynes Commons

DINNER: **6:30 p.m.**
Alice Haynes Room
Tyler Haynes Commons

PROGRAM: **7:30 p.m.**
Auditorium
Gottwald Center for the Sciences

MENU: House Salad, Sliced Prime Rib of Beef Au Jus, Lyonnaise Potatoes,
Cheese Tortellini with Roasted Tomatoes, Sautéed Zucchini and Yellow
Summer Squash, Creamy Horseradish Sauce, Shiitake Mushroom Sauce,
Rolls, Assorted Desserts, Coffee and Tea.

PRICE: \$12.00 (no reductions)

**DINNER
RESERVATIONS:** Please make reservations for the Dinner by **NOON on Friday,
February 1** by calling the Chemistry Department at the University
of Richmond, **(804) 289-8242** or by e-mail to **amallory @ richmond.edu**.

HOST: Dr. Carol Parish, (804) 484-1548; cparish @ richmond.edu

SPEAKER: **Dr. Roald Hoffmann, Cornell University**

TOPIC: **“All the Ways to Have a Bond”**

FEBRUARY 2008

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The W. Allan Powell Lectureship

Dr. Roald Hoffmann

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. 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* (translated into six languages) and *Old Wine, 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), and most recently, in Spanish, *Catalista*. 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*, had its initial workshop production in Edmonton, Canada in 2006.

Unadvertised, a monthly cabaret Roald runs at the Cornelia Street Café in Greenwich Village, "Entertaining Science," has become the hot cheap ticket in NYC.

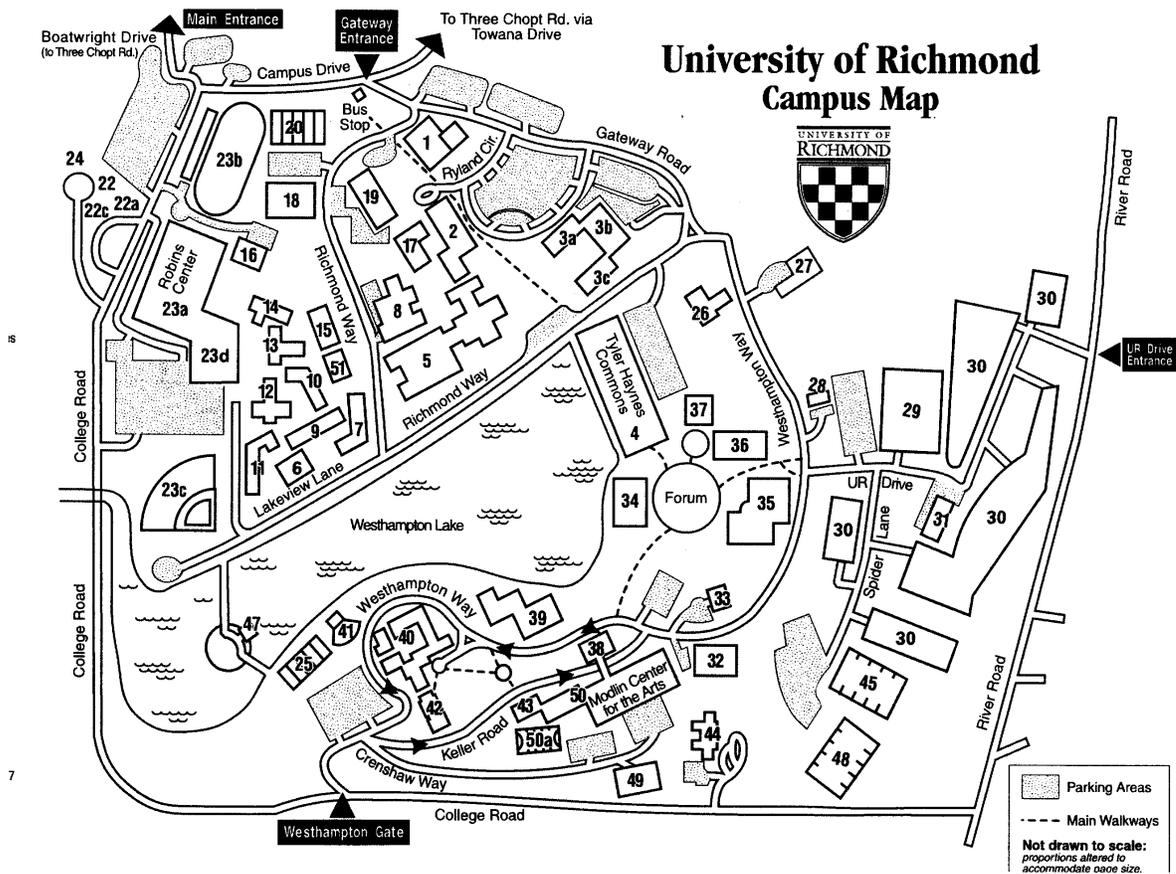
ALL THE WAYS TO HAVE A BOND

Any rigorous definition of a chemical bond is bound to be impoverishing, leaving one with the comfortable feeling "yes (no), I have (do not have) a bond," but little else. And yet the concept of a chemical bond, so essential to chemistry, and with a venerable history, has life, generating controversy and incredible interest. Even if we can't reduce it to physics. I will discuss some of the common criteria: length, energy, force constants, magnetism, energy splittings and other spectroscopic criteria, bond orders, population analyses, and bond critical points. My advice is likely to be: Push the concept to its limits, accept that (at the limits) a bond will be a bond by some criteria, maybe not others, respect chemical tradition, have fun with the richness of something that cannot be defined clearly, and spare us the hype.

DIRECTIONS

From I-64, take the Glenside Drive South exit (Exit 183A) and go about 1.5 miles to the 4th traffic light. Turn left on to Three Chopt Road and go about 0.8 mile. Follow the signs to the University of Richmond, turning right on to Boatwright Drive, then left on to Campus Drive. Turn right through the main gate on to Gateway Road. Continue on Gateway Road to the traffic island. You can turn right on to Richmond Way or continue on to Westhampton Way. Parking is available next to the Tyler Haynes Commons, in two lots at the top of the hill, or in the commuter lot off UR Drive. The Powell Reception and Dinner will be in the Alice Hayes Room (downstairs) of the Tyler Haynes Commons (# 4 on the map below). The program will be in the auditorium of the Gottwald Science Center (# 35). See map below.

MAP



TYLER HAYNES COMMONS

GOTTWALD SCIENCE CENTER

P = PARKING

*** VIRGINIA SECTION NEWS ***

FUTURE MEETINGS

DATE: March 28, 2008
LOCATION: James Madison University
 Harrisonburg, Virginia
HOST: Dr. Thomas C. DeVore
PHONE: (540) 568-6672
E-MAIL: devoretc @ jmu.edu
SPEAKER: Dr. Thomas C. DeVore
TOPIC: "Fire, Smoke and Slime:
 Thirty Years of Under-
 Graduate Research"
 (with demos!)

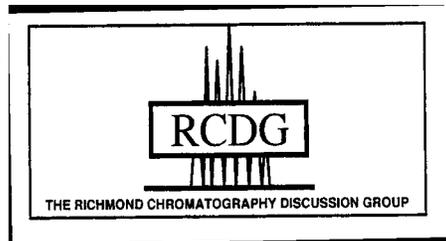
DATE: April 18, 2008 (tentative)
LOCATION: University of Virginia
 Charlottesville, Virginia
HOST: Dr. James Demas
PHONE: (434) 924-3343
E-MAIL: demas @ virginia.edu
SPEAKER: Dr. Richard Day
TOPIC: "Fluorescent Proteins from
 Marine Invertebrates—New
 Tools for Studying Protein
 Dynamics in Living Cells"



STUDENT POSTER SESSION

RICHMOND CHROMATOGRAPHY DISCUSSION GROUP

The Richmond Chromatography Discussion Group (**RCDG**) promotes the interests of chromatographic and other separation sciences by expanding the awareness and capabilities of individuals from the scientific community. The group publishes a newsletter, presents lectures, and provides student scholarships. For more information, check their website: <http://rcdg.org>. The RCDG has scheduled these meetings:



Feb. 27, 5:30 p.m. - Nadja Cech, University of North Carolina Greensboro, "Sources of Selectivity in the Analysis of Small Molecules with Electrospray Ionization Mass Spectrometry," Philip Morris USA Center for Research and Technology (CRT), 601 E. Jackson Street, Richmond

Mar. 18, 5:30 p.m. - William R. Mylott, Jr., PPDI, "Development and Optimization of HILIC-MS/MS Methods for Rapid GLP Bioanalysis", PPDI

April - Joseph V. Strukl, "*cis*-Platinum Mononucleobase Compounds: Reaction Profile Studies Involving Protein, DNA, and Zinc Finger Models, and Implications for Possible Antiviral Activity"

In **May**, RCDG will be presenting a one-day seminar on **SPE/SPME** at the PMUSA Center for Research and Technology in Richmond. Their website will provide more information.

VIRGINIA SECTION WEBSITE

For full information on Section activities, including meetings, don't forget to check out the Virginia Section website, located at: <http://membership.acs.org/VVA/>. Thanks to Ann Sullivan for maintaining the site. Anne can be contacted at [asullivan @ reynolds.edu](mailto:asullivan@reynolds.edu).

SEMINARS AT THE UNIVERSITY OF VIRGINIA

Feb. 15 - Professor Daniel Nocera, Massachusetts Institute of Technology, "Powering the Planet: Chemistry to the Rescue"

Feb. 22 - Professor Marcey Waters, University of North Carolina at Chapel Hill, "Form and Function of Designed Mini-Proteins"

Feb. 29 - Professor Robert J. Hamers, University of Wisconsin

Mar. 14 - Professor Mary Roberts, Boston College

Mar. 21 - Professor Kurt Zim, Yale University, "Solid State NMR Nanocrystallography: A Spectroscopic Window into the Physical Chemistry of Proteins"

Mar. 28 - Professor Robert Grubbs, California Institute of Technology (JEFFERSON LECTURE)

Apr. 4 - Professor Alan Van Orden, Colorado State University

Apr. 18 - Professor Ben Cravatt, The Scripps Research Institute

Apr. 25 - Professor David Crich, University of Illinois at Chicago

Seminars are scheduled for 4:00 p.m. in Room 304 of the Chemistry Building. The complete colloquium schedule can be found at <http://www.virginia.edu/chem/newsandevents/seminars/>.

SEMINARS AT VIRGINIA COMMONWEALTH UNIVERSITY

Feb. 7 - Professor Kaifer, University of Miami

Feb. 28 - Michael Doyle, University of Maryland

Mar. 27 - Professor Mark Meyerhoff, University of Michigan (KAPP LECTURE)

Apr. 3 - Professor B. R. James, University of British Columbia

Apr. 10 - Professor Karl Scheidt, Northwestern University

The seminars are held at 3:30 p.m. in the Kapp Lecture Hall, Room 1024, in the Mary E. Kapp wing of Oliver Hall, 1001 West Main Street in Richmond. The public is invited. For more information, call (804) 828-1298.

CONGRATULATIONS!

Congratulations to Jamie Wynn Vaughan and Charles Edwin Gregory III, who were married on December 1, 2007 at First Baptist Church in Ashland. The bride is a graduate of Virginia Commonwealth University and works as an analyst at Circuit City Stores, Inc. Mr. Gregory is the Good Manufacturing Practices Chemist at Boehringer-Ingelheim Chemicals in Petersburg and is Chair of the Virginia Section of the ACS for 2008.



THE CHAIR'S CORNER

Hello ACS Virginia Section! It just occurred to me that most of you may not know too much about me, so I would like to introduce myself. My name is Trey Gregory and I am 26 years old. I have been working at Boehringer Ingelheim Chemicals since I graduated from Hampden-Sydney College in 2003. While at HSC, I majored in Chemistry and played on the baseball team. My hobbies are photography and sports. I enjoy playing all sports and have been most recently involved in dodgeball, volleyball, and softball. I was just married this past December and my wife and I reside in Chesterfield, VA.



I would like to thank Dr. Will Lewis, Immediate Past Chair, for helping me through my succession. I am very honored to serve as the Virginia Section Chair and look forward to working with everyone this year.

We have a great 2008 ahead of us to include many ACS project initiatives. I would like to issue Local Section and Chair's Goals as my predecessor did last year.

Local Section Goals:

- Act upon the ACS Vision: Improving people's lives through the transforming power of chemistry
- Support ACS Programs and Initiatives
- Promote career development and professional interactions among members
- Continue to ensure efficient operations of the Section
- Volunteer

Chair's Goals:

- Increase communication and interaction with members of the VA Section including retired professionals, professionals in education and the industry, and our student affiliates. This will be done by continuing with the monthly meetings and introducing the Science Café to the VA Section
- Become active in the Younger Chemists Committee
- Begin development/planning for the 2011 SERMACS VA Section Meeting
- Recognize volunteers

Finally I would like to ask for help. Being a volunteer can be hard and time-consuming, but, it can also be very rewarding. In the upcoming year, we have numerous exciting opportunities in which I encourage members to participate. In 2008, the VA Section will be involved in many ACS projects and initiatives including monthly meetings, Chemistry Olympiad, National Chemistry Week, Science Café, Younger Chemists Committee, Earth Day, K-12 Grants through the Chemical Education Committee, SERMACS 2011, and more! I encourage you to become involved, even if it is just a small part. Every little bit counts. VOLUNTEER!

Again, I am very excited about the upcoming year's events and serving as the Virginia Section Chair for 2008. My contact information is the in Bulletin and on our Local Section website at <http://membership.acs.org/VVA/>.

...Trey Gregory
2008 Virginia Section Chair

2008 CHEMISTRY OLYMPIAD

The Virginia Section will host the 2008 Chemistry Olympiad for all high school chemistry teachers and students who are interested in participating. The Local Section competition will begin on March 3 and end on March 24, 2008. High school teachers can make arrangements within their schools to provide secure testing sites and administer the Olympiad exams. **The deadline for applications is February 24.** For more information and the application forms, either hard copy or on-line, go to the Virginia Section Chemistry Olympiad site at <http://membership.acs.org/VVA/olympiad/default.htm>.

The students who do well in the local competition will be nominated to compete in the National competition, hosted at J. Sargeant Reynolds Community College in Richmond, Virginia on April 19. These students will compete for 20 positions in the study camp to be held at the US Air Force Academy in Colorado Springs, Colorado on June 1-15, 2008. The five member International Chemistry Olympiad (IChO) team will be chosen from these 20 students to compete in the IChO. This year the 40th International Chemistry Olympiad competition will be held in Budapest, Hungary on July 12-21, 2008.

Local Section competition is organized into three categories: small public or private schools (enrollment under 500 students), large schools (over 500 students), and schools with specialized programs such as Governor's schools. Each student who participates will receive a certificate. The highest scoring student from each school will receive a Chemistry Olympiad pin. High scoring students in the Section will receive gift certificates. Team awards will be presented to schools for group achievement.

For complete information and registration materials, visit the Virginia Section website or contact the Olympiad Coordinator: Dr. Ann M. Sullivan, Mathematics and Science, Downtown Campus, J. Sargeant Reynolds Community College, P. O. Box 85622, Richmond, VA 23285-5622; (804) 862-4260, (804) 943-2941, or (804) 523-5777; FAX: (804) 732-6077; e-mail: asullivan@reynolds.edu.

QUESTIONS FROM THE PAST

This question was asked in the January Bulletin: **Dr. Janos Fendler**, distinguished professor of chemistry at Clarkson University, died on July 12, 2007, at the age of 69. Dr. Fendler was a native of Hungary and held a Ph.D. in physical organic chemistry from the University of London. In 1983 he received the ACS Award in Colloid & Surface Chemistry. Dr. Fendler gave a talk to the Virginia Section on "Membrane Mimetic Chemistry." **When and where was that Section meeting held?** Dr. Fendler spoke at Mary Washington College in Fredericksburg on November 20, 1987. He was then on the faculty at Syracuse University.



A new question: A new Asian yew species has been named for Virginia Tech chemistry professor David G.I. Kingston. *Taxus kingstonii*, also called the Kingston yew, was named in honor of Dr. Kingston's research on chemicals extracted from yew trees. These "taxanes" include the anti-cancer drug paclitaxel (Taxol). Dr. Kingston's work has led to new derivatives that are being used to treat breast and ovarian cancer. In 2007, he received the Ernest Guenther Award in the Chemistry of Natural products. He spoke to the Virginia Section on "Is Colon Cancer a Bacterial Disease?" **Where and when was the meeting held that featured this talk?**

CHEMISTRY AT THE UNIVERSITY OF RICHMOND

The Chemistry Department at the University of Richmond is located in the Gottwald Center for the Sciences along with the Departments of Biology and Physics. Offering both the B.S. and B.A. degrees in Chemistry and Biochemistry/Molecular Biology, the department provides excellent preparation for work or professional studies in chemistry, biochemistry, the health sciences, and chemical engineering, as well as for teaching or for legal careers. The department meets certification requirements by the American Chemical Society for the B.S. in Chemistry and in Chemistry/Biochemistry.

Our students receive a strong background in chemistry in an atmosphere of activity and support from an able and enthusiastic faculty. Class sizes are never greater than 40 and upper level classes and teaching laboratory sections generally have less than 20. Students enjoy the use of a wide variety of modern instrumentation both in their teaching laboratories and in research experiences. Many of our students present the results of their research work to the scientific community both by presentation at meetings on and off campus and in publications. They have the opportunity to grow and learn in an exciting and supportive setting, and when their undergraduate days are over, they find that they are well prepared to pursue their dreams.

The chemistry major at the University of Richmond provides a strong basic background in the major sub disciplines of chemistry (analytical, inorganic, organic, physical and biochemistry). Richmond graduates are ready to enter the best chemistry graduate programs in the country, to enter the work force as chemists in industry and government, to proceed into careers as secondary school teachers, or to develop careers in sales and marketing for technical industry. The major also provides an excellent background for studies in medicine, the allied health professions and law. The number of students graduating with a major in chemistry has been between 12 and 20 for the past few years. The majority of our students participate in research sometime during their program. About half of recent graduating chemistry majors entered graduate programs in chemistry or related fields.



A \$35 million renovation and expansion of Gottwald Center for the Sciences is complete. New space (approximately 28,000 sq. ft.) has been added to the south and west sides of the building to provide faculty offices and research labs, and the original space (162,000 sq. ft.) has undergone extensive renovation to include the addition of cutting-edge technology and scientific equipment. Our facility includes a new atrium, new and renovated research laboratories and an entrance more closely aligned with the Collegiate Gothic architecture of other campus buildings. Flexibility to add future teaching and research technologies was designed into the project. Upgrading Gottwald is part of the University's \$50 million plan to improve science facilities and programs over this decade and to place Richmond among the first-choice colleges of America's top high school science students. Over this decade, the University will add up to 18 new faculty positions and place greater emphasis on interdisciplinary studies and innovative science classes for non-majors.

JUDGES FOR THE VIRGINIA JUNIOR ACADEMY OF SCIENCE

Judges and meeting chairs are needed for the annual meeting of the Virginia Junior Academy of Science (VJAS), to be held at Hampton University in Hampton, May 20-22, 2008. About 750 students from grades seven through twelve will present papers and report on original research work. If you would like to contribute to this celebration of science by young persons, please contact Susan Booth, VAS Director, at susanscience @ msc.com or (757) 874-3349 or use the form below. Judges are needed in Agriculture & Animal Science, Animal Behavior, Botany, Chemistry, Computer Science, Consumer Science, Design Technology, Earth & Space Science, Engineering, Environmental Science, Genetics & Cellular Biology, Mathematics, Medicine & Health, Microbiology, Physical Science, Physics, Psychology, Statistics, and Zoology.

Please detach, print and mail to:

Ms. Susan Booth, 134 Twin Lake Circle, Newport News, VA 23608

Name: _____ Phone #: _____

Complete Mailing Address:

E-mail: _____

Please circle the categories you are interested in: Agriculture & Animal Science, Animal Behavior, Botany, Chemistry, Computer Science, Consumer Science, Design Technology (pilot), Earth & Space Science, Engineering, Environmental Science, Genetics & Cellular Biology, Math, Medicine & Health, Microbiology, Physical Science (middle school), Physics (high school), Psychology (general, learning and perception, and social), Statistics, Zoology

VIRGINIA ACADEMY OF SCIENCE MEETING

The 86th Annual Meeting of the Virginia Academy of Science will be held at Hampton University in Hampton on May 21-23, 2008. Persons interested in presenting in the Chemistry Section should send the author's name(s), author's affiliation(s), and presentation title to Dr. Thomas DeVore, Chemistry Department, MSC 4501, James Madison University, Harrisonburg, VA 22807; (540) 568-6672; devoretc @ jmu.edu. More information on the VAS Meeting can be found at <http://www.vacadsci.org/meetings.htm>.

KIZERS CELEBRATE ANNIVERSARY

On December 25, 2007, Frank and Helen Kizer celebrated their 70th wedding anniversary. They were married just after midnight on Christmas Day in 1937. It was a planned elopement! They attended an 11:00 p.m. Christmas eve service and arranged for the minister to marry them after the service, which ended after midnight. Frank and Helen's parents did not know about the wedding plans. Frank was 21 and Helen was 19. At that time you had to be 21 years old to marry without parental consent.



When they applied for their license at the county courthouse, Frank was asked his age and he truthfully replied "21." For Helen, Frank said "she is over 21." That was also the truth as Frank had written the number "21" on the bottom of her shoe!

The Kizers celebrated their anniversary at a reception given in their honor and hosted by their daughters, Ann Spain and Marion Renne and their husbands. Helen and Frank have six grandchildren and five great grandchildren. They reside in Lancaster County, Virginia.

Frank served as chairman of the Virginia Section in 1976. He was Supervisor of Science Instruction for the Commonwealth of Virginia until his retirement in 1979. Helen was an executive secretary for Sears & Roebuck, Richmond Group, until her retirement in 1975. Frank is one of only two persons who have received both the Distinguished Service Award (1978) and the Distinguished Service Award for Teaching High School Chemistry (1955) from the Virginia Section. He has served the Virginia Section in many ways and continues to be a member of the Executive Committee and of the Membership Committee.



“SHOULD’VE”

A description of Roald Hoffmann’s latest play, “Should’ve,” was included in an article that appeared in the July 30, 2007 issue of *C&E News*. Ivan Amato’s article entitled “Experiments of Concern” discussed the possibilities of well-intentioned scientific research being used for undesirable purposes (this is sometimes called the dual-use conundrum). There are several quotes from Hoffman, including these:

“Chemists have not worried enough about the consequences of the molecules that they make. “

”...with creation of any kind, there is a question to be asked and that is, ‘Will that synthesis, will that painting or that poem, will it hurt people?’”

“There are no bad molecules, only evil human beings.”

Hoffman’s play begins with the immediate aftermath of the suicide of synthetic chemist Friedrich Wertheim. Wertheim published the synthesis for a molecule that was used to kill more than 600 persons. He is haunted by the belief that the research that he did in good faith has had terrible consequences. The article can be found in the *C&E News* archives, available at *C&EN Online*, www.cen-online.org. The full script of “Should’ve” can be read there.

CAN YOU IDENTIFY THIS PERSON?

The photograph is from the early 1940s. The subject served as chairman of the Virginia Section in 1942-43. A native of Norfolk, Virginia, he earned B.S., M.S., and Ph.D. degrees from the University of Virginia. After two years of research work at the DuPont Experimental Station in Delaware, he returned to the University of Virginia as a member of the faculty in the Department of Chemistry. He remained there until his retirement in 1975 when he became a Professor Emeritus of Chemistry.



The “mystery person” in the January issue was **Dr. Maurice Maxwell**, who was chair of the Section in 2003. Now retired from Longwood University, he continues to serve on the Executive Committee of the Virginia Section.



WORDS OF WISDOM FOR FEBRUARY: “TO EFFECT GREAT CHANGES, YOU MUST HAVE GREAT HOPES”

THE BULLETIN

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