



The Bulletin
of the
Virginia Section
AMERICAN CHEMICAL SOCIETY

FEBRUARY MEETING NOTICE

**University of Richmond
Richmond, Virginia**

Friday, February 26, 2010

DINNER: **6:00 p.m.**
Richmond Room
Heilman Dining Center

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

MENU: Spinach Salad, Grilled Chicken, Crab Stuffed Flounder, Herb Roasted Red Potatoes, Vegetable Medley, Rolls, Berry Bread Pudding with White Chocolate, Coffee and Iced Tea. Vegetarian Alternative – Mushroom Strudel (please specify Vegetarian when making your reservation)

PRICE: \$12.00 (no reductions)

DINNER RESERVATIONS: Please make reservations for the Dinner by **NOON on Friday, February 19** by calling the Chemistry Department at the University of Richmond, **(804) 289-8242** or by e-mail to **amallory @ richmond.edu**.
NOTE: Space is limited for the dinner—make your reservation early!

HOST: Dr. Raymond Dominey, (804) 289-8761; rdominey @ richmond.edu

SPEAKER: **Dr. Kenneth H. Pearce, GlaxoSmithKline**

TOPIC: **“Chemical-Biological Interfaces in Endocrinology:
Nuclear Receptors, Modulating Ligands, and
Drug Discovery “**

FEBRUARY 2010

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The W. Allan Powell Lectureship

Dr. Kenneth O. Pearce

Ken is currently a senior research investigator within Molecular Discovery Research at GlaxoSmithKline in Research Triangle Park, North Carolina. He started his research career under the mentorship of Professor Richard Topham at the University of Richmond with several projects focused on understanding iron transport and enzymatic release of iron from ferritin. After graduation from Richmond in 1989 with a B.S. in chemistry, Ken entered the chemistry department at the University of North Carolina at Chapel Hill. At UNC, Ken worked with dual advisors Professors Richard Hiskey and Nancy Thompson. Research at UNC dealt with understanding membrane binding kinetics of blood coagulation factors using total internal fluorescence coupled with recovery after photobleaching. After completion of the Ph.D. in 1993, Ken started postdoctoral work in the lab of Dr. James Wells in the Protein Engineering Department at Genentech. In Dr. Wells' lab, research involved structure-function and biophysical studies on human growth hormone and thrombopoietin. Also, Ken used phage display for affinity maturation of human growth hormone and further investigation of novel human growth hormone variants for activation of its receptor in cellular assays. Upon completion of postdoctoral work, Ken took a research position at GlaxoSmithKline (formerly SmithKline Beecham) in 1996. At GSK, Ken and colleague's discovery and basic research efforts have involved numerous therapeutic areas including anti-microbials, anti-infectives, menopausal symptoms, inflammation, metabolic diseases, and cancer. Over the past 10 years, the majority of Ken's effort has involved the structural class of receptors referred to as the nuclear receptor superfamily. Efforts here have led to the discovery of several potential therapeutics targeting the estrogen receptor, the glucocorticoid receptor, and several related 'orphan' receptors. Additionally, this work has led to the first protein expression and crystal structure of the glucocorticoid receptor, an improved understanding of chemical modulation of nuclear receptors, and several collaborative efforts with the academic community.



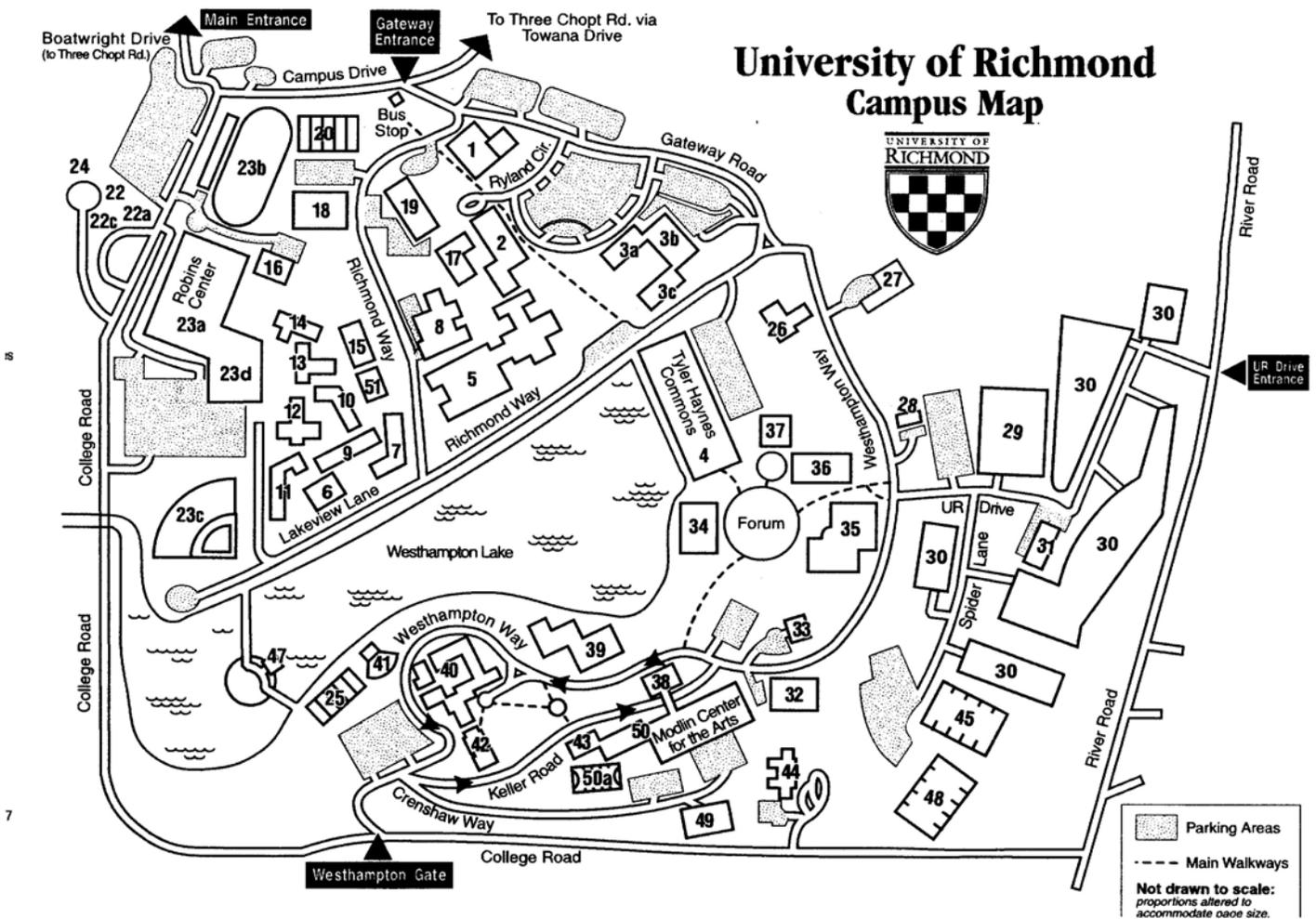
“Chemical-Biological Interfaces in Endocrinology: Nuclear Receptors, Modulating Ligands, and Drug Discovery”

A basic concept in endocrinology is control of activities and processes at distal sites in the body. Signaling molecules, in some cases non-protein small molecule hormones, traverse the body and ultimately relay their chemically encoded information to a protein receptor at the target tissue. The nuclear receptor (NR) superfamily, particularly the steroid receptor sub-family, contains classic examples of receivers for small chemical messengers. The NR is a well-adapted receptor for this type of function because it not only can specifically bind the small molecule, but it is capable of transducing a complex set of signals, typically transcription-related, encoded by the properties of the ligand. The nature of the information that the ligand bound-NR relays also depends on a complex interplay of factors, including coactivator partners and cell type. Our work over the past several years has focused on discovery of novel NR-modulating molecules and understanding the properties of the compound-bound NR through chemistry, crystallography, biophysical, and cellular studies. The ultimate goal of our work is to develop therapeutics for a variety of disease states including metabolic, inflammatory, and cancer-related conditions.

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. Turn left on to Westhampton Way. Continue on Westhampton Way to the top of the hill. Parking is available in the three lots at the top of the hill. The Powell Reception and Dinner will be in the Richmond Room (downstairs) of the Heilman Dining Center (# 34 on the map below) which is across from the Gottwald Science Center (# 35). Note—there is no parking available in front of the Science Center. See the map below.

U OF R CAMPUS MAP



HEILMAN DINING CENTER

GOTTWALD SCIENCE CENTER

P = PARKING

*** VIRGINIA SECTION NEWS ***

FUTURE MEETINGS

DATE: **March 26, 2010**
 LOCATION: James Madison University
 Harrisonburg, VA
 HOST: Dr. Barbara Reisner
 PHONE: (540) 568-3460
 E-MAIL: reisneba @ jmu.edu
 SPEAKER: **Dr. Daniel Rabinovitz**
 TOPIC: "Chemical Philately and Education"

DATE: **April 23, 2010**
 LOCATION: University of Virginia
 Charlottesville, VA
 HOST: Dr. James Demas
 PHONE: (434) 924-3343
 E-MAIL: demas @ virginia.edu
 SPEAKER: **Dr. Charles Grisham**
 TOPIC: "Bizarre Biochemistry"

➡ **STUDENT POSTER SESSION**

VIRGINIA ACADEMY OF SCIENCE ANNUAL MEETING

James Madison University
May 20-22, 2010



CALL FOR PAPERS

The 88th Annual meeting of the Academy will be held at James Madison University in Harrisonburg on May 20-22. Titles for papers should be sent to the Secretary of the Chemistry Section by Friday, February 12, 2010. Papers will be scheduled for presentation on May 21. There will be a Poster Session that will run from May 20 through May 21. To submit a paper, send the title and author(s) to Dr. Thomas C. DeVore, Department of Chemistry and Biochemistry, MSC 4501, James Madison University, Harrisonburg, VA 22807; (540) 568-6672; devoretc @ jmu.edu. Note that the presenting author must be registered for the VAS meeting and at least one author must be a member of the Academy. Paper abstracts will be due at the Annual Meeting. Full information about paper submission and about Academy membership can be found on the Academy's website: www.vacadsci.org.

CHANGE IN SECTION WEBSITE

The address for the Section website is expected to change soon. The new location is <http://www.virginia.sites.acs.org/>. For now, please continue to access the Section at the old site: <http://membership.acs.org/VVA/>. If you cannot get to the Section website and are not redirected to the new site, try using the new address.

CHEMISTRY DEPARTMENTS AT COLLEGES AND UNIVERSITIES IN THE VIRGINIA SECTION

<u>School/Location</u>	<u>Department Chair/ Program Coordinator</u>	<u>Phone/E-mail</u>
Bridgewater College Bridgewater, VA 22812	Dr. Joseph Crockett	(540) 828-5431 jrocket @ bridgewater.edu
College of William & Mary Williamsburg, VA 23187-8795	Dr. Chris Abelt	(757) 221-2540 cjabel @ wm.edu
Eastern Mennonite University Harrisonburg, VA 22802	Dr. Stephen G. Cessna	(540) 432-4403 cessnas @ emu.edu
Hampden-Sydney College Hampden-Sydney, VA 23943	Dr. Kevin M. Dunn	(434) 223-6181 kdunn @ hsc.edu
James Madison University Harrisonburg, VA 22801	Dr. Richard Foust	(540) 568-6246 foustrd @ jmu.edu
Longwood University Farmville, VA 23909	Dr. Melissa Rhoten	(434) 395-2636 rhotenmc @ longwood.edu
Mary Baldwin College Staunton, VA 24401	Dr. Ralph Karl Zachary	(540) 887-7117 kzachary @ mbc.edu
Randolph-Macon College Ashland, VA 23005	Dr. Serge Schreiner	(804) 752-7206 sschrein @ rmc.edu
St. Paul's College Lawrenceville, VA 23868	Dr. Sunday A. Adesuyi	(434) 848-6484 sadesuyi @ saintpauls.edu
Shenandoah University Winchester, VA 22601	Dr. Diep Ca	(540) 678-4330 dca @ su.edu
University of Mary Washington Fredericksburg, VA 22401	Dr. Leanna Giancarlo	(540) 654-1407 lgiancar @ umw.edu
University of Richmond Richmond, VA 23173	Dr. Lisa Gentile	(804) 484-1578 lgentile @ richmond.edu
University of Virginia Charlottesville, VA 22904-4319	Dr. David S. Cafiso	(434) 924-3067 dsc0b @ virginia.edu
Virginia Commonwealth Univ. Richmond, VA 23284	Dr. Scott Gronert	(804) 828-1298 sgronert @ vcu.edu
Virginia State University Petersburg, VA 23806	Dr. Grace Ndip	(804) 524-5064 gnip @ vsu.edu
Virginia Union University Richmond, VA 23220	Dr. Dorothy Eseonu	(804) 257-5615 dneseonu @ vuu.edu

IN MEMORIAM

James E. York, Jr. 1908-2009

Mr. James Earl York, Jr. died on December 13, 2009 at the age of 92. Mr. York, who was a member of the American Chemical Society for 63 years, served the Virginia Section and the chemical profession in many ways. He was Chair of the Virginia Section in 1968, having served previously as Treasurer, Secretary, Vice-Chairman, and Chairman-Elect. Over the years, his committee membership included the Manpower Committee, the Executive Committee for the 1959 Southeastern Regional ACS Meeting, Nominating Committee, and Long-Term Objectives Committee. He was a member of the Publications Board, serving as its Chairman in 1962 and he was the Business Manager of the Bulletin for several years. His tenure as a Trustee and a member of the Section's Executive Committee extended for over two decades. His outstanding service to the Virginia Section was recognized in 1973 when he received the Distinguished Service Award.



Jim was also active in the Virginia Academy of Science and the American Institute of Chemists. He was a Deacon and Elder in the Presbyterian Church. During the last 14 years of his life, Mr. York lived at the Westminster Canterbury retirement community where he continued his dedication to helping others. His many volunteer activities endeared him to the many individuals whose lives he touched.

Mr. York, an agricultural research chemist, retired in 1986 after a 46-year career at the American Tobacco Company. He was born in Greensboro, North Carolina and spent part of his youth in Charleston, South Carolina. He received a B.S. degree in Chemistry from the College of Charleston. During World War II he was in the Army Chemical Warfare Service.

Jim was preceded in death by his beloved wife Mary Wright York in 1991. He is survived by two children, Elizabeth Y. Smith of Raleigh, North Carolina and James E. York, III of Arlington, Virginia, and three grandchildren. An article that described some of his many volunteer activities appeared in the *Richmond Times-Dispatch* on December 16, 2009.

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 was completed in 2005. New space (approximately 28,000 sq. ft.) was 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.) was renovated to include the addition of cutting-edge technology and space for 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 was 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 has added up to 18 new faculty positions and placed greater emphasis on interdisciplinary studies and innovative science classes for non-majors.



SEMINARS AT VIRGINIA COMMONWEALTH UNIVERSITY

- Feb. 4 - **Dr. Scott Trammel**, Naval Research Laboratory–Center for Bio/Molecular Science and Engineering
- Feb. 11 - **Dr. Catherine Murphy**, University of Illinois
- Feb. 18 - **Dr. Jack Brown**, Boehringer-Ingelheim
- Feb. 25 - **Dr. Robert Ian MacCuspie**, National Institute of Standards and Technology
- Mar. 4 - **Dr. Laura Sremaniak**, North Carolina State University
- Mar. 11 - **Dr. J. C. Poutsma**, College of William & Mary
- Mar. 25 - **Dr. Howard Fairbrother**, Johns Hopkins University
- Apr. 1 - **Dr. Keith Ellis**, Virginia Commonwealth University
- Apr. 8 - **Dr. Jacob Klein**, Weismann Institute of Science, Israel
- Apr. 15 - **Dr. Hugo Christenson**, University of Leeds
- Apr. 22 - **Professor Michael Klein**, Temple University, “Nothing Amuses More Harmlessly than Computation....” (**KAPP LECTURE**)
- Apr. 29 - **Dr. Lynn Penn**, Drexel University

The seminars are held at 4:00 p.m. (note the change in time) 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.



SEMINARS AT THE UNIVERSITY OF VIRGINIA

- Feb. 5 - **Professor Melanie Sanford**, University of Michigan, “Catalytic C-H Functionalization: Interplay Between Catalyst Design and Mechanism”
- Feb. 19 - **Professor Loren Williams**, Georgia Institute of Technology, “RNA: Still Folding After All These Years”
- Feb. 26 - **Professor Allen Bard**, University of Texas - Austin, “Chemically Imaging Living Cells by Scanning Electrochemical Microscopy” (**JEFFERSON LECTURE**)
- Mar. 5 - **Professor Wilson Ho**, University of California - Irvine, “The Interior of Single Molecules” (**PRATT LECTURE**)

Mar. 26 - **Dr. Marco F. Ellis**, Northwestern University, "The Use of Alloplastic Implants in Plastic and Reconstructive Surgery"

Apr. 2 - **Professor James Anderson**, Harvard University (GRAHAM LECTURE)

Apr. 9 - **Professor Jennifer Doudna**, University of California - Berkeley, "Dicer and Beyond: Regulatory RNA Processing and Function" (BURGER LECTURE)

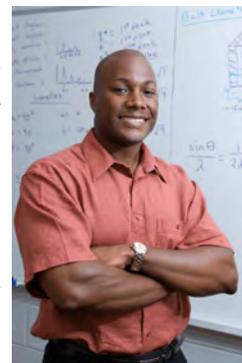
Apr. 16 - **Dr. Linda Birnbaum**, National Institute of Environmental Health Sciences, "Halogenated Flame Retardants: Does the Benefit Justify the Risk?"

Apr. 23 - **Professor Ka Yee Lee**, University of Chicago, "Beyond Wrinkling: Stress Relaxation in Surfactant Monolayers and Other Thin Films"

Chemistry colloquia are held at 4:00 p.m. in Room 304 of the Chemistry Building. The complete colloquium schedule is on-line at <http://chem.virginia.edu/events-seminars/>.

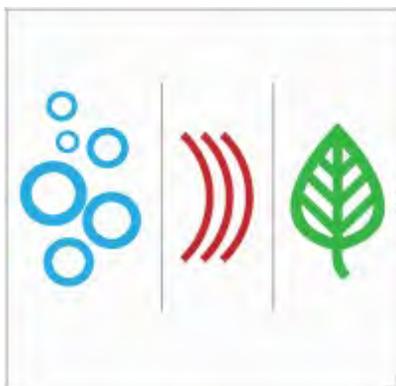
THOMAS H. EPPS, III RECEIVES NATIONAL AWARD

Dr. Thomas H. Epps, III, Assistant Professor of Chemical Engineering at the University of Delaware, has been selected to receive a Presidential Early Career Award for Scientists and Engineers. This award is the highest honor bestowed by the U.S. government on young persons who are in the early stages of their research careers. Selection for the Early Career Award is based on two criteria: pursuit of innovative research at the frontiers of science and technology and a commitment to community service as demonstrated through scientific leadership, public education, or community outreach. Winning scientists and engineers receive up to a five-year research grant to further their work on critical government missions.



Dr. Epps spoke at the December, 2009 meeting of the Virginia Section, held at Virginia Union University in Richmond. His research targets materials design and fabrication to create conducting membranes for current and next-generation energy generation and storage devices, such as batteries, fuel cells, and solar cells. He is the son of Dr. Thomas H. Epps, Jr. and Dr. Ruth Epps, who reside in Chesterfield County, Virginia.

THE ARCHIMEDES INITIATIVE



The Archimedes Initiative aims to strengthen science literacy and to increase the number of scientists, engineers, and other technical professionals in the United States. Competitive science fairs have been chosen as the starting point for demonstrating and describing the joy and energy that surrounds self discovery and experimentation. The focus is on the personal experiences of middle and high school students who participated in science fairs. The Initiative has developed a website (<http://www.archimedesinitiative.org/>) that contains a series of thematic videos to demonstrate the challenge and thrill of science fair experiments. The videos were prepared from interviews of science fair participants at local, regional, and national levels.

The project began in 2007 when Jeffrey I. Seeman of the Department of Chemistry at the University of Richmond submitted a proposal to the Camille & Henry Dreyfus Foundation. Primary funding has come from the Dreyfus Foundation with additional support from GroundWork Design, SaddlePoint Frontiers, and the University of Richmond. Dr. Seeman is the Producer and Director for the Initiative. Video interviews of science fair participants were done at the Fairfax County Area III Regional Science and Engineering Fair, the Massachusetts State Science and Engineering Fair, and the Intel International Science and Engineering Fair.

On the Archimedes Initiative website, you can choose from 17 themes. These include topics such as "Choose Your Own Science Adventure," "Revving Your Literature Search Engine," "Holding Court with Judges," "Learning Beyond the Textbook", and "Straight Talk from Fellow Students." There are also video clips that reveal the complete thoughts of many science fair participants on their science fair projects. And there are suggestions from participants on a selection of other topics from "Choosing Your Experiment" to "What I Learned About Myself" and "Advice to Parents." The stories from real competition participants help to identify specific student needs and create solutions that actively engage students and scientific professionals.

The Archimedes Initiative is a public resource. If you want to help promote science literacy and to increase the number of scientists and engineers, you are invited to join the Initiative. You can participate in this effort to reach students, parents, and teachers across the country. Go to www.archimedesinitiative.org to learn more about the program and how you can become involved.

CAN YOU IDENTIFY THIS PERSON?



The photo is from October, 1992 when the subject attended a meeting of the Virginia Section at Shenandoah University. In 1969 she received the Distinguished High School Teaching Service Award from the Section. At that time she was chairman of the Science Department at John Handley High School in Winchester. A native of Frederick County, she graduated from John Handley High School in 1943, then received a B.S. degree at Madison College. Her hobbies were reading, growing roses, and working with science youth groups.

The "mystery person" in the January issue was Dr. W. Allan Powell, 1997 recipient of the Virginia Section's Distinguished Service Award.



QUESTIONS FROM THE PAST

This question was asked in the January Bulletin: Dr. Roger Adams was the President of the American Chemical Society when he spoke to the Virginia Section in a meeting held on January 21 at the Medical College of Virginia. That same month, Dr. Harold C. Urey was the speaker at another meeting that was held at the Richmond Academy of Medicine. **In what year did these two distinguished chemists visit the Virginia Section?** The year was 1935.

A new question: Between 1993 and 2006, the Summer issues of the Bulletin featured cartoons drawn by a member of the Virginia Section. The "artist" was very active in the ACS, serving as Chair of the Section, representing the Section as a Councilor, chairing a national ACS committee, and receiving the Distinguished Service Award from the Virginia Section. **Who did those 13 humorous drawings?**

THE BULLETIN

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