



The Bulletin
of the
Virginia Section
AMERICAN CHEMICAL SOCIETY

MARCH MEETING NOTICE

**Virginia Military Institute
Lexington, Virginia**

Tuesday, March 21, 2006

**JOINT MEETING WITH THE VIRGINIA
BLUE RIDGE SECTION**

SOCIAL HOUR: 5:30 p.m.
Moody Hall

DINNER: 6:00 p.m.
Moody Hall

PROGRAM: 7:00 p.m.
Moody Hall

MENU: Pecan Crusted Chicken, Sweet Potatoes, Green Beans, Rolls, Dessert, Coffee, Tea. A Vegetarian Plate is available upon request.

PRICE: Members/Guests - \$14.00; Students, High School Teachers/Spouses, Retired ACS Members/Spouses, Retired Teachers/ Spouses - \$7.00

DINNER: Please make reservations for the dinner by **NOON on Thursday, March 16** by contacting Dr. Adele Addington at Roanoke College: addington@roanoke.edu; (540) 375-2364.
Please honor your dinner reservations!

HOST: Dr. Adele Addington, (540) 375-2364

SPEAKER: **Dr. Domenic Paone, Novozyme Biologicals, Inc.**

TOPIC: **“Novozyme Biologicals: Harnessing Biotechnology for a Cleaner Environment ”**

MARCH 2006

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				<i>reservations</i>			
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		<i>meeting</i>					
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Dr. Domenic Paone

Dr. Paone is a Senior Group Leader, Research and Development, for Novozymes Biologicals in Salem, Virginia. He is currently responsible for product development in the Institutional and Household and Industrial Waste Treatment business segments. Dr. Paone has developed and commercialized formulated biochemical products and microbial strains that clean surfaces as well as enhance biodegradation of grease, household waste, and odors. Dr. Paone's expertise in microbial physiology has allowed him to target specific organic waste substrates with specific microbes for enhanced cleaning capabilities. Dr. Paone has been granted several patents in the area of biodegradation / biocatalysis, the most recent patents deal with degradation of long chain fatty acids found on floors and in grease traps by *Bacillus* species. Dr. has developed microbial-based processes for the degradation of nuisance and hazardous organic compounds (1,4-dioxane and dichloromethane), nitrification, denitrification, and sulfide oxidation. He has developed protocols and methods for the enumeration of anaerobic microorganisms from wastewater and hazardous waste treatment systems. Dr. Paone received his Ph.D. in 1981 from The Pennsylvania State University, completed three years of postdoctoral study at the Medical College of Virginia in microbial physiology of intestinal anaerobic microorganisms, and has fifteen years of experience in industrial biotechnology (Celgene Corp and Novozymes Biologicals) with emphasis on the isolation, characterization and use of microorganisms for the degradation of hazardous and nuisance compounds and the use of these biocatalysts for cleaning and in engineered systems.



Novozyme Biologicals: Harnessing Biotechnology for a Cleaner Environment

Novozymes Biologicals formed in 2001 by the acquisition of Sybron Biochemicals by the Danish enzyme producer Novozymes A/S. is the world leader in applied microbiology. The strategy of Novozymes Biologicals is built upon our core competency, the discovery, production and development of microbes to achieve a targeted effect. Microbes with differing capabilities are blended together and developed into a formulation to bring both immediate cleaning and longer lasting deep cleaning through microbial action. The technology base of Novozymes Biologicals has been applied to three main categories, wastewater bioaugmentation (pulp and paper, petrochemicals, food process industries municipal treatment systems), institutional & household (hard surface cleaning and odor control, drainline and septic maintenance) and agricultural applications (plant growth and disease control). By harnessing biotechnology Novozymes Biologicals is able to replace environmentally damaging products with products deemed to be friendly to the environment.

One such product, DeepClean was introduced by Novozymes Biologicals several years ago as a commercial kitchen cleaning product which contained several proprietary and one patented microbial strain. The driving force behind this product was the isolation, production and patenting of *Bacillus megaterium* strain SB3112, also known as BioS3112. This Gram positive spore forming stain was developed as a long chain fatty acid degrading strain which when coupled to lipase producing microbial strains enhanced the cleaning of floors by surfactant only compositions. Other short chain volatile fatty acids which typically cause odors are also degraded by BioS3112. Field tests indicated higher slip index (less slippery) on greasy kitchen floors after several weeks of use. An added benefit of such treatment was a replacement of the normal microbial flora of the floor with a population consisting of the strains in DeepClean.

MAP AND DIRECTIONS



MOODY HALL

Take I-64 West to I-81 South toward Lexington. Exit I-81 at the third Lexington exit (188B). Go West on Route 60. Turn right at the 6th traffic light (it is a one-way street). Stay in the left lane. Route 11 splits at the bottom of the hill. Veer to the left but immediately get into the right lane. Then turn right on to Lechter Avenue (arrows will direct you to Washington and Lee and VMI). Continue past the brick gates at the end of the Parade Ground. Moody Hall is the building on the left-hand corner. There is parking on the street around the Parade Ground and behind Smith Hall which is the building next to Moody Hall.

For a detailed map of VMI and more complete driving directions, go to this website:
<http://www.vmi.edu/show.asp?durki=603&site=24&return=212%20+>

***** VIRGINIA SECTION NEWS *******FUTURE MEETINGS**

DATE: April 14, 2006
LOCATION: University of Virginia,
Charlottesville
HOST: Dr. James Demas
PHONE: (434) 924-3343
SPEAKER: Dr. John Butler
TOPIC: "Beyond CSI: Exciting Applications
of Forensic DNA"

⇒ **STUDENT POSTER SESSION**

DATE: September 22, 2006
LOCATION: Virginia Commonwealth
University, Richmond
HOST: Dr. Sally Hunnicutt
PHONE: (804) 827-0531
⇒ **ANNUAL AWARDS MEETING**

VIRGINIA ACADEMY OF SCIENCE MEETING

The Virginia Academy of Science Meeting will be held at Virginia Tech in Blacksburg on May 24-26, 2006. Persons interested in the Chemistry Section program should contact Dr. Thomas DeVore, Chemistry Department, MSC 7701, James Madison University, Harrisonburg, VA 22807; (540) 568-6672; devoretc @ jmu.edu. More information on the meeting can be found at <http://www.vacadsci.org>.

**The Richmond Chromatography Discussion Group PRESENTS
Advances in Gas Chromatography**

Part 1: Advantages of using Headspace and Thermal Desorption as sample introduction techniques
for GC and GC/MS

Lee Marotta, Perkin Elmer Corporation

Part 2: Electronic Pressure Control for Optimization of GC and GC/MS and for Maximization
of Resolution with Microfluidic Devices

Daron Decker, Agilent Technologies

When: **March 29, 2006, 8:00AM to 4:30PM**

Where: Sheraton Park South, 9901 Midlothian Turnpike Richmond, Virginia 23235

Registration Cost (includes handouts, refreshment breaks and lunch):

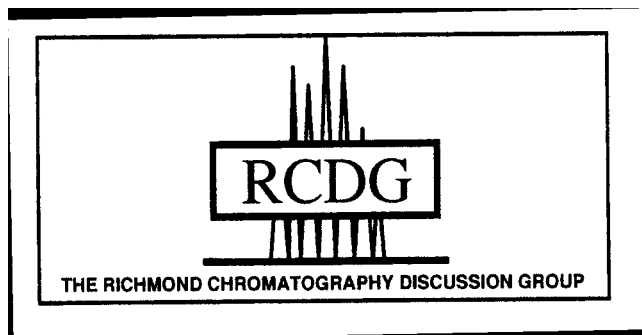
\$70 Regular / \$35 Students

Check our website www.rcdg.org for more information or contact Mike Martin at (804) 648-4480,
extension 377 or Carol Sheets at (804) 257-2453

RCDG March 2006 GC Workshop Registration Form

First Name: _____
Last Name: _____
Company: _____
Address: _____

City/St/ZIP: _____
Phone: _____
e-Mail: _____



**Confirmations will be sent by email
DEADLINE for reservations is March 20
Make checks payable to RCDG
Mail the Registration Form with payment to:
RCDG March 2006 Registration
C/O Mike Martin
600 N. Fifth Street
Richmond, VA 23219**

STUDENT POSTER SESSION

The Virginia Section will hold its annual poster session at the Friday, April 14 meeting at the University of Virginia in Charlottesville. The emphasis is on student research, especially work done by undergraduates. If you have a student who wishes to present a poster, please contact Dr. James Demas at jnd@virginia.edu.

FALL/WINTER MEETING SCHEDULE (TENTATIVE)

Friday, Sept. 22, 2006 - Virginia Commonwealth University, Richmond, ANNUAL AWARDS MEETING

Friday, Oct. 27, 2006 - College of William & Mary, Williamsburg (Joint Meeting with the Hampton Roads Section)

Friday, Nov. 17, 2006 - University of Mary Washington, Fredericksburg

Friday, Dec. 1, 2006 - John Tyler Community College, Chester

SAFETY COMMITTEE SOLICITING IDEAS

The Safety Committee of the Virginia Section is looking for ideas that should be addressed at future section meetings concerning laboratory and chemical safety. They hope to take these ideas and develop workshops/seminars that can be held prior to the social hour at future meetings. Past presentations have included storage and labeling of chemicals, which could be repeated. The Committee is looking for other relevant topics. Dr. Joseph Crockett, Chair of the Chemical Safety Committee would like to hear from high school and middle school teachers as to how their school systems handle the disposal of used chemicals. Send our ideas and comments to Joe at jcrocket @ bridgewater.edu, (540) 828-6480.

REPORT ON THE FEBRUARY MEETING OF THE VIRGINIA SECTION

On February 10, 2006, over 80 persons heard Dr. Donald Levy's presentation on Supersonic Jet Spectroscopy at the annual W. Allan Powell Lectureship at the University of Richmond. Dr. Levy was introduced by Dr. Samuel Abrash. Dr. William Myers introduced Dr. Allan Powell as well as Dr. Powell's son William A. Powell, Jr. and grandson W. A. Powell, III (Trey). Dr. Levy noted that this was the most difficult audience that he had ever spoken to because of the caliber of people in attendance.

Editor's note: Dr. Levy has been named as the 2006 recipient of the American Chemical Society's **E. Bright Wilson Award in Spectroscopy**. An article on the Award can be found in the January 16, 2006 issue of *C&EN*.



QUESTIONS FROM THE PAST

This question was asked in the February Bulletin: At least one member of the Virginia Section served as a member of the Senate of Virginia. He was born in Highland County, Virginia, taught at the Medical College of Virginia, then joined with a partner to form a laboratory supply business. He served as president of the Virginia Academy, was elected as a Fellow of the Academy, and has a Chesterfield County high school named for him. In 1953, he received the Distinguished Service Award from the Virginia Section of the ACS. **Who was this chemist-politician-businessman?** Lloyd C. Bird and Morris Phipps founded the company Phipps & Bird in 1925. Both men taught at the Medical College of Virginia in Richmond. They started the company to provide laboratory apparatus, chemicals, and other products for science education. As the business grew, Mr. Phipps left the company and Mr. Bird took on the full-time job of running the firm which became one of the country's larger laboratory supply distributors. Mr. Bird entered politics and became a Virginia State Senator from Chesterfield County. In 1967 he sold the company to General Medical Corporation and the Phipps and Bird laboratory supply business was merged with General Medical to form a new entity known as General Scientific. The Phipps & Bird name remains today. It is a private, woman-owned small business located in Richmond that manufactures and sells a variety of products. Lloyd C. Bird received the Virginia Section's Distinguished Service Award in 1953. He was president of the Virginia Academy of Science in 1952-53.

A new question: The December meeting of the Virginia Section was held at the Medical College of Virginia in Richmond. The speaker was Professor William P. Ryan of the Massachusetts Institute of Technology who spoke on "Some Phases of Coal Carbonization." The talk was preceded by a dinner at the Westmoreland Club. The dinner cost was \$.85. **What year was the meeting held?**

SEMINARS AT THE UNIVERSITY OF VIRGINIA

March 24 - **Professor Charles Henry**, Colorado State University, "Enabling Environmental, Bioanalytical, and Biophysical Chemistry Through Microfluidics"

March 31 - **Professor Jonathan Sweedler**, University of Illinois at Urbana-Champaign, "Techniques for Probing the Brain's Chemistry One Cell at a Time"

April 7 - **Professor Martin Semmelhack**, Princeton University, "Small Talk: The Chemistry of Bacterial Quorum Sensing" (**LUTZ LECTURE**)

April 14 - **Dr. John Butler**, National Institutes of Standards and Technology, "Analytical Detective Work and the Chemistry Behind Forensic DNA Typing"

April 21 - **Professor Stephen Weber**, University of Texas at Austin

April 28 - **Professor Gilbert Walker**, University of Toronto, "Macromolecules Binding to Surfaces"

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

Thursday, March 23 - **Dr. Robert Flowers**, Lehigh University

Friday, March 31 - **Dr. Rich Saykally**, University of California at Berkeley, "Ions at the Liquid Water Surface: Beyond Onsager and Langmuir" (**KAPP LECTURE**)

Thursday, April 6 (tentative) - **Dr. Mike Tarlov**, NIST

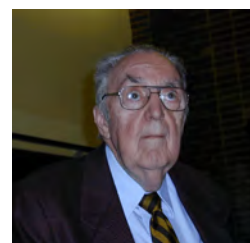
Tuesday, April 18 - **Dr. Qibing Zhou**, Virginia Commonwealth University, "Insights on Natural Terpene Quinone Methides: Mechanism, Bioactivity, and Applications"

Tuesday, May 2 - **Dr. YuYe Tong**

The seminars are held at 4:00 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.

REPORT ON THE JANUARY MEETING OF THE VIRGINIA SECTION

The January 21 Section meeting was held at Randolph-Macon College in Ashland. About 40 persons heard Dr. Henry R. Bungay discuss "Bioenergy Without Hype." Dr. Joseph Pompano, Past Chair of the Virginia Section, passed the section gavel to Dr. Dorothy Eseonu, incoming Chair. Dr. Pompano read the history of the Virginia Section gavel which is made from many different woods that are native to Virginia. Thanks to Dr. April Marchetti for arranging the meeting and to Dr. John Thoburn and Dr. Brian Moores for serving as meeting hosts.



ConSOL

A Conference on SOL in Virginia and Their Effect on Chemistry Instruction

June 23-34, 2006

At the Crowne Plaza Richmond West Hotel, Richmond, VA

*Sponsored by the Local Sections Activity Committee, American Chemical Society
and The Hampton Roads, Virginia Blue Ridge and Virginia Sections, A.C.S.
with support of the Chemical Society of Washington*

The Conference will consider several aspects of the current SOL program, including the end-of-the year SOL tests and their influence on the curriculum, directly through the Teachers Guide and indirectly through emphasis on certain topics to the exclusion of others. We will also call attention to significant technical errors in the questions (and answers!) on recent tests and to some topics in the Teachers Guide; alternative approaches to test construction and delivery will be described. Recent developments in student-based learning will be practiced in breakout sessions, along with practice in newer instructional methods. Support for improved instructional methods and materials from the local A.C.S. Sections will be offered, along with opportunities for in-service programs, short courses, and visiting scientist programs. There will be a display of instructional materials, and laboratory materials.

Who should attend?

This conference is particularly directed toward school administrators, science supervisors, chemistry teachers, and others involved in teaching science. In order to provide smaller workshops, we must limit other interested organizations, such as school boards, colleges and chemical enterprises to one representative each. We invite concerned members of the Virginia Board of Education and members of the Virginia Assembly serving on either the House Education Committee or Senate Health and Education Committee to join us. Enrollment will be limited to no more than two hundred.

What will it cost?

The sponsors are subsidizing attendance. To allow greatest participation, we are offering registration at \$100 until May 1, to include a banquet dinner on Friday (choice of entrees) and lunch on Friday and Saturday. Registration after May 1 is \$125. Refreshments during morning and afternoon breaks are also included, as are materials for all sessions. A hospitality room will be available Thursday and Friday evening. For attendees staying at the Crowne Plaza, we will also provide breakfast for each night's stay. We have made arrangements with the hotel for a special rate of \$89 per room [please make room reservations directly with Crowne Plaza Richmond West, (804) 285-9951]

There will be a limited number of scholarships for teachers unable to obtain local support for attendance. Any proceeds from the conference beyond actual costs will be used through the Sections to provide instructional support for teachers. A registration form is provided on the next page. The conference cannot accept credit card payment; please include a check for registration. Recertification credit will be awarded; teachers should apply to the local supervisor or school board representative for prior approval.

ConSOL Registration

Name _____

Name to be used for badge if different from above _____

Affiliation (School, Board or other Organization) _____

Mailing address: _____

e-mail address: _____

phone (office) _____ (home) _____

Check enclosed for \$125 (\$100 if received prior to April 15) payable to ConSOL (Conference on SOL's).

Will you be staying at the Crowne Plaza during the conference? Yes _____ No _____

If yes, please indicate nights: Thursday ___; Friday ___; Saturday ___

Please note any special considerations, such as wheelchair accommodation at the conference or special dietary requirements:

Would you like us to invite someone else? Please include the person's name, affiliation and contact information:

Please return this form with payment to:
ConSOL c/o Ryan Warren,
304 N. Sheppard St, Richmond VA, 23221

SCIENCE FAIR JUDGES NEEDED

On April 8, 2006, Randolph-Macon College in Ashland, Virginia, will sponsor the 20th annual Virginia State Science & Engineering Fair, bringing to the Richmond area over 250 bright high school science students to compete for awards and a chance to attend the Intel International Science and Engineering Fair. Judges are needed for the Biochemistry, Chemistry, Environmental Sciences, Medicine and Health, Team Projects, Mathematics, Engineering, Physics, Earth Sciences, and Zoology categories. Judges meet at 7:00 a.m. for breakfast; judging is completed by 2:00 p.m. If you or your colleagues are interested in being a part of this challenging and rewarding effort, please contact Dr. Adrian Rice, at arice @ rmc.edu. More information on the Fair and on judging can be found at www.rmc.edu/sciencefair.

CHEMISTRY AT VIRGINIA MILITARY INSTITUTE

The Chemistry Department at Virginia Military Institute (VMI) offers both a Bachelor of Arts (B.A.) and a Bachelor of Science (B.S.) degree. The B.S. degree has been certified by the American Chemical Society. Chemistry majors at VMI enjoy small class sizes (even the freshman general chemistry courses are limited to an enrollment of fewer than 25 students), abundant research opportunities with the faculty, state of the art equipment, and a demanding, yet rewarding, environment that fosters excellence. VMI graduates go on to pursue a variety of interests including enrollment in Medical Schools, Graduate Schools in Chemistry, and other professional schools; careers in the chemical, biochemical, and pharmaceutical industries at the B.S. level; and commissioning in one of the four branches of military service. There are 14 faculty members and 3 staff persons in the Department.

The laboratory facilities, instrumentation, and computer services housed in the Science Building provide the cadet with the modern techniques needed to learn and practice the science of chemistry. Instrumentation includes liquid and gas chromatographs; infrared, visible, and ultraviolet spectrophotometers; a nuclear magnetic resonance spectrometer; a mass spectrometer; atomic absorption, d.c. plasma, and flame emission spectrometer; several microcomputers and a variety of computer terminals. Opportunities exist for selected chemistry majors to participate in research projects during the academic year and the summer vacation period at VMI and as an industrial intern with a chemical company. An Honors Program, open to majors who have demonstrated excellence in the study of chemistry offers opportunities to engage in more extensive research under the close supervision of a faculty sponsor.

The Department of Chemistry offers a minor in chemistry to those cadets who wish to expand their scientific knowledge beyond their declared major. Students can also major in Biochemistry with a concentration in Molecular, Cellular, and Biological Chemistry. This is offered through the Center for Molecular, Cellular, and Biological Chemistry at the Virginia Military Institute, a collaborative effort of the Departments of Biology and Chemistry.

2006 CHEMISTRY OLYMPIAD

The Virginia Section is hosting the 2006 Chemistry Olympiad for high school chemistry students. The Local Section testing will end on Saturday, March 25, 2006. For full information, go to the Virginia Section Chemistry Olympiad site: <http://membership.acs.org/V/VA/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 22. These students will compete for 20 positions in the study camp at the US Air Force Academy in Colorado. The five member International Chemistry Olympiad (IChO) team will be chosen from these 20 students to compete in the IChO. This year the 38th International Chemistry Olympiad competition will be held in Gyeongsan, Republic of Korea on July 2-11, 2006.

The Olympiad Coordinator for the Virginia Section is Dr. Ann Sullivan, Mathematics and Science, Downtown Campus, J. Sargeant Reynolds Community College, P. O. Box 85622, Richmond, VA 23285-5622; (804) 523-5777; FAX: (804) 225-2437; e-mail: asullivan@reynolds.edu.

WORDS OF WISDOM FOR MARCH: **“Know Yourself,
And Your Neighbor Will Not Mistake You”**

In Memoriam

Alfred R. Armstrong 1911 - 2006

Alfred Armstrong, Emeritus Professor of Chemistry at the College of William and Mary, died in Williamsburg on February 8, 2006, at the age of 94 years. Dr. Armstrong joined the William and Mary faculty in 1933 and taught chemistry at the College until 1996.



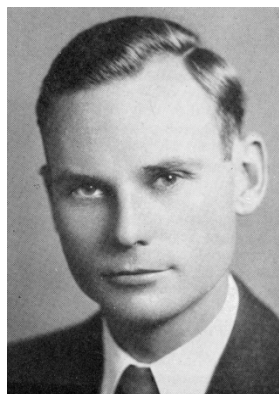
Alfred Ringgold Armstrong was born in Washington, D. C., on July 6, 1911. While he spent most of his childhood in Asherton, Texas, he graduated from Sperryville (Virginia) High School. He enrolled in William and Mary in 1928, was elected to Phi Beta Kappa, and was awarded the Bachelor of Science degree in 1932 and a Master of Arts degree in 1934.

Mr. Armstrong joined the William and Mary faculty as Instructor in 1933. His teaching at William and Mary was interrupted during the 1935-36 academic year while he was in the graduate program in chemistry at the University of Michigan and again from 1942 to 1944 when he undertook doctoral studies at the University of Virginia under the mentorship of Dr. John H. Yoe. He received a Ph. D. degree in chemistry from UVA in 1945.

In 1936 he was promoted to Assistant Professor of Chemistry at William and Mary. In 1945 Dr. Armstrong advanced to Associate Professor and then to Professor in 1961. He was responsible for William and Mary's courses in analytical chemistry. He served on most of the faculty committees at the College, as a faculty marshal at William and Mary's Charter Day and commencement ceremonies, and as Secretary to the Faculty of Arts and Sciences. In 1975 Dr. Armstrong was awarded the Thomas Jefferson Award for his "significant service to the College through personal activities, influence, and leadership." Professor Armstrong was the author of several papers on analytical chemistry and the coauthor of the text *Qualitative Analysis and Chemical Equilibrium*. In 1976 he retired from full-time teaching but continued on a part-time basis for the next twenty years, teaching laboratory courses in general chemistry.



Dr. Armstrong was a 68-year member of the American Chemical Society. He was elected Chair of the Virginia Section of the ACS in 1959. In 1972 the section presented him with its Distinguished Service Award, citing his high standards of teaching, his dedication to students, and his distinguished service to the organization. Professor Armstrong was a member of the Alpha Chapter of Phi Beta Kappa at William and Mary for 74 years. In 1996 the first Phi Beta Kappa departmental student award was named after him.



Dr. Armstrong is survived by Martha Barber Armstrong, his wife of 71 years; two sons, R. Miller Armstrong and Alfred B. Armstrong; and five grandchildren.

THE BULLETIN

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CAN YOU IDENTIFY THIS PERSON?



The photograph is from 1991 when the subject was employed at the Philip Morris USA Research Center. He was actively involved in the 43rd Southeast Regional ACS Meeting that was hosted by the Virginia Section and held in Richmond November 12-15, 1991. He served on the Steering Committee and was co-chair of the Publications/Publicity Committee. He solicited advertisements and contributions, wrote news releases, and was responsible for the publication of the program booklet. He also supervised the daily door prize drawings.

The "mystery person" in the February issue was Dr. William Rademaker, recipient of the Section's Distinguished Service Award for High School Chemistry Teaching in 1988 and Chair of the Virginia section in 1999.



