



The Bulletin
of the
Virginia Section
AMERICAN CHEMICAL SOCIETY

OCTOBER MEETING NOTICE

***Bridgewater College
Bridgewater, Virginia***

Friday, October 23, 2009

SOCIAL HOUR: **5:45 p.m.**
Third Floor Lobby
McKinney Science Center

DINNER: **6:30 p.m.**
The Boitnott Room
Kline Campus Center

PROGRAM: **7:30 p.m.**
Room 100
McKinney Science Center

MENU: Chicken Breast Stuffed with Spinach and Herb Cheese, Vegetable Lasagna, Salad, Seasonal Vegetables, Broccoli Spears, Wild Rice, Chocolate Cake, Beverages

PRICE: Members/Guests - \$15.00; Students, High School Teachers/
Spouses - \$8.00; Retired ACS Members/Spouses, Retired
Teachers/Spouses - \$10.00

RESERVATIONS: Please make reservations by NOON on **Tuesday, September 20**
by calling Kelly Coverstone at Bridgewater College, (540) 828-5399,
or by e-mail to **kcoverst @ bridgewater.edu**

HOST: Dr. Joseph Crockett, (540) 828-5431; jcrocket @ bridgewater.edu

SPEAKER: **Mr. Robert D. Blackledge**

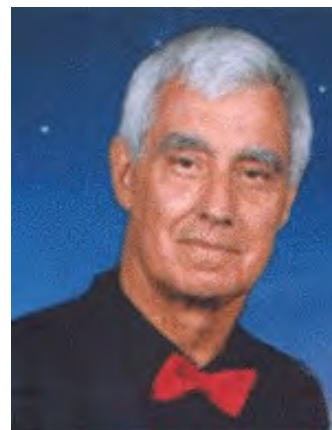
TOPIC: **“The Floyd Landis Sports Doping Case as Evaluated
by a Forensic Analytical Chemist”**

OCTOBER 2009

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		reservations due		meeting		
25	26	27	28	29	30	31

Robert D. Blackledge

Robert (Bob) D. Blackledge received his BS (chem.) from The Citadel in 1960 and his MS (chem.) from the University of Georgia in 1962. Starting with the Florida Department of Law Enforcement's Tallahassee Crime Lab in 1971, Bob has worked in forensic science for over thirty years. Stops along the way included eleven years with the U.S. Army Criminal Investigation Laboratory-Europe, back during the Cold War when we had a crime lab in Frankfurt, Germany. Bob's final stint was as the Senior Chemist with the Naval Criminal Investigative Service Regional Forensic Laboratory-San Diego from 1989 to 2006. The author or co-author of roughly forty journal articles and book chapters, his interests are wide-ranging, but his special passion is trace evidence.



Reports of his research have been published in the FBI's *Law Enforcement Bulletin*, the FBI's *Crime Laboratory Digest*, the *Journal of Forensic Sciences*, *Science & Justice*, *Forensic Science International*, *Forensic Science Review*, *Microgram Journal*, and *Analytica Chimica Acta*. He is the editor for *Forensic Analysis on the Cutting Edge: New Methods for Trace Evidence Analysis*, published by Wiley-Interscience in 2006.

“The Floyd Landis Sports Doping Case as Evaluated by a Forensic Analytical Chemist”

Floyd Landis, a professional bicycle racer from Murrieta, California, won the 2006 Tour de France. However, not many days after the race's conclusion, the Laboratoire National de Dépistage du Dopage (LNDD) "announced" (actually the information was leaked to the press) that a urine sample obtained from Floyd after stage 17 had been found to be positive for a form of synthetic testosterone. If this finding were to be upheld, Landis would be stripped of his title and also banned from participation in the sport. Landis denied any sports doping and his strategy in fighting these charges has been to try to generate public support and to make all of the documentation of the LNDD tests available to the public. GC/MS is used by LNDD for preliminary sample screening, and carbon stable isotope ratio mass spectrometry is used for final confirmation. From the standpoint of a forensic analytical chemist with experience in forensic laboratory accreditation standards, this presentation will examine the analytical data and correspondence from the Landis case in terms of: chain of custody requirements; World Anti-Doping Association (WADA) guidelines and LNDD SOP; and reasonable standards of good laboratory practice.

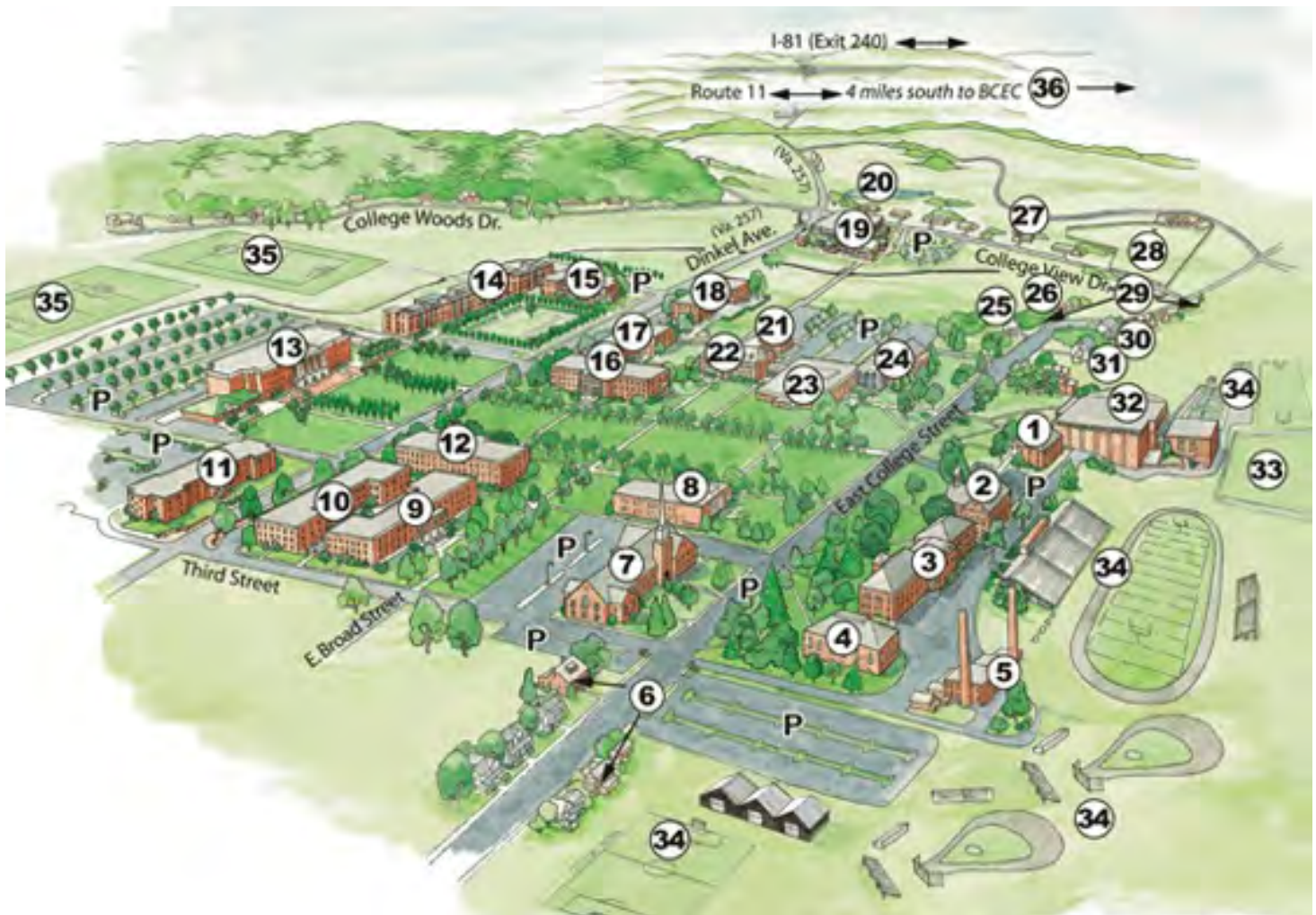
TALK BY NSF CHEMISTRY DIVISION DIRECTOR

Dr. Luis Echegoyen, Director of the Chemistry Division at the National Science Foundation, will speak at Virginia Commonwealth University on **Thursday, October 29**. His topic is "What's New at the Chemistry Division at the NSF." The presentation will be at 11:00 a.m. in the Kapp Lecture Hall, Room 1024, in the Mary E. Kapp Wing of Oliver Hall, 1001 West Main Street in Richmond. Call (804) 828-1298 for more information.

DIRECTIONS

From I-81, take exit 240 for Bridgewater. From the south, you will turn right and head west on route 257; from the north you will turn left on to route 257. Go through the stoplight at route 11 and continue on route 257 for about two miles to Bridgewater. After you pass the Bridgewater College entrance, the McKinney Center is on the right. Just past the sign for the McKinney Center, turn right into the parking lot that is immediately behind the building. Directions to the dinner in the Kline Campus Center will be available at the Social Hour. The map below can be accessed at www.bridgewater.edu/AboutUs/CampusMap. On the map, the McKinney Science Center is building 13 and the entrance to dinner in the Kline Campus Center is between buildings 22 (Rebecca Hall) and 23 (Kline Campus Center).

MAP



McKinney Science Center

Kline Campus Center

***** VIRGINIA SECTION NEWS *****

FUTURE MEETINGS OF THE SECTION

DATE:	November 13, 2009	DATE:	December 4, 2009
LOCATION:	University of Mary Washington Fredericksburg, Va .	LOCATION:	Virginia Union University Richmond, Va.
HOST:	Dr. Roy Gratz	HOST:	Dr. Dorothy Eseonu
PHONE:	(540) 654-1412	PHONE:	(804) 257-5615
E-MAIL:	rgratz @ umw.edu	E-MAIL:	dneseonu @ vuu.edu
SPEAKER:	Dr. Catherine C. Fenselau	SPEAKER:	Dr. Thomas H. Epps, III
TOPIC:	"New Methods for Proteomics"	TOPIC:	"Using Block Copolymers to Create Functional Nano- materials"
			Presentation of Teaching Awards

DATE: January 22, 2010
 LOCATION: **Science Museum of Virginia**
 Richmond
 HOST: Dr. Stephanie Mabry
 PHONE: (804) 788-5280
 E-MAIL: stephanie.mabry @ verizon.net
 SPEAKER: Dr. Foster Agblevor
 TOPIC: "Thermochemical Conversion of Biomass
 to Fuels and Chemicals"

February, 2010 - University of Richmond, Richmond - Powell Lectureship

March 26, 2010 - James Madison University, Harrisonburg - Dan Rabinovitz,
 "Chemistry in Stamps"

April 23, 2010 - University of Virginia, Charlottesville, Dr. Charles Grisham

THE CHAIR'S CORNER

This is the third week of the third year for my attempt to temporarily halt the science education train wreck at one of Virginia's small private high schools. Train wreck is somewhat of a misnomer since no organized, planned science program was developed in the 24 years of the school's existence before I was recruited. No preceding science teacher had spent more than one year at the school and many did not complete a year. The school used a single source curriculum until I talked them into using the ACS program, "Chemistry in the Community." The old text had suitable content, but did not take advantage of the stimulating, problem-solving chemistry that led most of us into the chemical field. With *ChemCom*,



students seem more willing to ask the “why” questions that enable me to take advantage of many more teachable moments than occurred previously. That leaves me with the other three science courses that still plod along with content that I can only occasionally make inspiring. Low pay, poor facilities, and uninspiring curricula makes teaching in many Virginia private schools unattractive to qualified science teachers. Fortunately, some private schools provide the antithesis of the preceding statement and my school is committed to moving rapidly in that direction.

As a retiree, I was asked by a family member to help some students having trouble with chemistry at a local private school. I agreed and had a very enriching experience. Having seen the challenge first hand and with a continuing concern about education, I agreed to take on classroom teaching and no more (you can negotiate with a private school). You may find it rewarding to get involved in helping some local students who happen to be in a private school – with a limit that fits you.

...Ken Chapman
2009 Virginia Section Chair

NATIONAL CHEMISTRY WEEK

October 17, 2009

Theme: “Chemistry—It’s Elemental”



The Virginia Section will celebrate National Chemistry Week on **Saturday, October 17** at the Science Museum of Virginia in Richmond. There will be lots of exciting activities for students and for teachers. **Help is needed!** Contact Dr. Kristine Smetana, the Virginia Section NCW Coordinator, to volunteer on October 17 or for more information on the activities at the Science Museum: **(804) 706-5143; *ksmetana @ jtcc.edu***

Visit the ACS website for more information on national activities, including the NCW Poster Contest for children in kindergarten through 12th grade and a NCW Chemvention Competition for student affiliate chapters: **<http://www.acs.org/ncw>**. This year marks the 22th Anniversary of the National Chemistry Week program.

AWARD FOR ELEMENTARY SCHOOL SCIENCE TEACHING

On December 4, the Virginia Section will presents a new award for the outstanding teaching of science in the elementary school. Do you know a teacher who does an exceptional job of presenting science to his or her students in grades K through 5? Nominations are needed for this new award which includes a check for \$300 and a plaque. Send the teacher’s name and school to Dr. William Rademaker, 2710 Arrandell Road, Midlothian, VA 23114; (804) 794-3752; [wrad @ verizon.net](mailto:wrad@verizon.net).



VIRGINIA SECTION RECEIVES NATIONAL AWARD

The Virginia Section has been awarded a 2009 ChemLuminary Award for Chemists with Disabilities Inclusion. The ACS presents ChemLuminary Awards to local sections and divisions that have done outstanding work. This is the third ChemLuminary Award that the Virginia Section has won.

The Inclusion Award is given by the Committee on Chemists with Disabilities for a program that includes students or the public. The Virginia Section conducted two programs for children with disabilities in grades three through five. The programs were held at a Richmond elementary school.

Some of the students had sensory or motor issues, some were physically impaired, and some had severe learning disabilities. Dr. Kristine Smetana, Professor of Chemistry at John Tyler Community College and Chair of the Virginia Section's Committee on Community Activities, conducted the programs. One program involved water and the water cycle; the other was done to celebrate Earth Day and emphasized the science of light and color. The students did many "hands-on" activities.



The 2009 ChemLuminary Awards were presented on August 18 at the national ACS meeting in Washington, D.C. Dr. Smetana accepted the award for the Virginia Section. The photograph shows her holding the award. On her left is Dr. Bruce E. Bursten, Immediate Past-President of the American Chemical Society. On the right is Ms. Judith Summers-Gates, who works at the FDA and is Chair of the ACS Committee on Chemists with Disabilities. Dr. Smetana is the Virginia Section coordinator for both National Chemistry Week in October and Chemists Celebrate Earth Day in April. In 2008 she accepted the ChemLuminary Award that the Section received for "Creative and Innovative Use of the Chemists Celebrate Earth Day Theme."



ELECTION OF 2010 OFFICERS

This year the Virginia Section will be trying a different approach to our officer elections. In the past we have done paper ballots, which were mailed to everyone in our Section. We changed our By-Laws in 2008 to allow electronic balloting, a less expensive alternative and the most environmentally friendly way of conducting the election.

The Nominations Committee has selected the Survey Monkey program for the balloting for 2010 officers. The Section Roster has been provided by the National ACS and everyone on that roster who has a listed e-mail address will receive an e-mail giving the instructions for voting and a link to the balloting site. Voting will begin on Oct. 15 and will terminate on Nov. 8.

If you do not get an election e-mail or would like to vote by paper ballot, please contact me—my contact information is given below.

As this is a new process for the Virginia Section, we would welcome any feedback on this process so we can make it better next year. Thank you for your support.

Write-in candidates will be accepted on both the electronic and paper ballots.

...Charles E. (Trey) Gregory III, Chair, Virginia Section Nominating Committee
(804) 873-2307; TreyGregory03 @ gmail.com

QUESTIONS FROM THE PAST

This question was asked in the September Bulletin: The Priestley Medal is the most prestigious award given by the American Chemical Society. Seventy-three chemists have received Priestley Medals. **How many of these award winners have presented lectures at Virginia Section meetings?** Can you name some of the Priestley Medal winners who have addressed the Virginia Section? There have been at least eight talks by seven Priestley Award winners:

Carl S. Marvel (1956 Priestley Award recipient) - Oct. 23, 1959 in Waynesboro, "What's New in High-Temperature Resistant Polymers of Organic Compounds"

Farrington Daniels (1957) - Oct. 16, 1953 in Hopewell, "Our Future Sources of Energy"

Joel H. Hildebrand (1962) - April 28, 1956 in Williamsburg, "Science, Pseudo-Science and Anti-Science"

Milton Harris (1980) - May 10, 1957 in Waynesboro, "Chemistry as Related to the Useful Properties of Textiles"

Herbert C. Brown (1981) - Feb. 18, 1994 in Richmond, "Discovering and Exploring a New Continent of Chemistry"

Roald Hoffman (1990) - Feb. 8, 2008 in Richmond, "Antoine and Marie Ann Lavoisier"

Ernest Eliel (1996) - Mar. 15, 1974 in Charlottesville, "The Information Explosion—What Can Be Done about It?" and Feb. 16, 1990 in Richmond, "Whither Chemistry"



Ernest Eliel in 2008

A new question from the past: On March 27, 2009, the Virginia Section and the Virginia Blue Ridge Section held a joint meeting at Lynchburg College (Lynchburg is in the Virginia Blue Ridge Section). The Virginia Section met at least once before at Lynchburg College. **When was that meeting and who was the speaker** whose topic was "Triboluminescence: Squeezing the Light out of Crystals"?

WORDS OF WISDOM FOR OCTOBER: "WHEN THE SOUL IS OPPRESSED, SO IS THE BODY"

CHEMISTRY SEMINARS AT THE UNIVERSITY OF VIRGINIA

- October 2 - **Professor Kimberly Kelly**, "Molecular Imaging and Biomarker Discovery in Pancreatic Ductal Adenocarcinoma"
- October 9 - **Professor Karen Goldberg**, "Reactions of Late Transition Metal Complexes with Molecular Oxygen"
- October 16 - **Professor Andrew Myers**, "Evolution of a Fully Synthetic Route to the Tetracyclines and Its Implementation in the Discovery of New Antibiotics" **(IRELAND LECTURE)**
- October 30 - **Professor Francesco Stellacci**, "On the Role of Nanostructure in Bio- and Organic Solid-Liquid Interfaces"
- November 6 - **Professor Paul Barbara**, "Are the Electronic Properties of Conjugated Polymers Deformable?"
- November 10 - **Professor Pedro Perez**, "Catalytic Functionalization of Unreactive Hydrocarbons"

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/>.

SEMINARS AT VIRGINIA COMMONWEALTH UNIVERSITY

- October 1 - **Steven McIntosh**, University of Virginia, "Solid Oxide Fuel Cell Electrodes—A Materials Chemistry Challenge"
- October 8 - **Shervin Singer**, Ohio State University
- October 22 - **Michael Wagner**, George Washington University, "Size and Shape Control of Nanoparticles, Clusters, Nanorods and Nanotubes Synthesized by Alkalide Reduction"
- October 29 - **Luis Echegoyen**, NSF Chemistry Division, "Buckyball Maracas: Chemical and Electrochemical Properties of Endohedral Fullerenes"
- November 5 - **Gary Glish**, University of North Carolina-Chapel Hill
- November 19 - **Jill Venton**, University of Virginia

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, Richmond. For more information, call (804) 828-1298.

SERMACS-2009

The 61st Southeastern Regional Meeting of the ACS (SERMACS-2009) will be held at the Puerto Rico Convention Center in San Juan, Puerto Rico on October 21-24. The theme is "THINK POSITIVE, THINK GLOBAL, THINK CHEMISTRY." There will be numerous plenary lectures, symposia, workshops, and technical and poster sessions, as well as special programs for undergraduate students and for high school teachers and students and a Chemical Exposition. Nobel Laureates Dr. Harold Kroto and Dr. Roald Hoffmann will give plenary lectures. More information on SERMACS-2009 can be found at <http://sermacs2009.org/>.

CHEMISTRY AT BRIDGEWATER COLLEGE



Bridgewater is a private liberal arts college founded in 1880. From its beginnings, it has always been a residential, coeducational institution. The Department of Chemistry at Bridgewater College is a small but well-equipped department. We graduate 4-6 majors per year with more than half going on to further their education in graduate or professional schools. Other students will go on to industrial positions or to other careers.

Our Facilities:

Located on the third floor of the McKinney Science and Mathematics building, the Chemistry Department's floor plan was designed around a central instrument room which houses our NMR, FTIR, UV/VIS, AA, GC-MS, GC, fluorescence spectrometer, and other instrumentation. Immediately adjacent are four research spaces and two large labs where students can set up long-term projects. We also have two General labs, two Organic labs, a chemistry library, three classrooms, six offices, and a large stockroom with a central chemical storage area.

The Courses:

The Departmental curriculum is intended to foster an increasing sense of independence in the student. As seniors, chemistry majors are required to complete individual projects which permit them to become familiar with advanced chemical methods and instrumentation. During these project courses the students work on their own time, and are given access to all the working labs in the department.

TEACHER AWARDS

The Virginia Section is soliciting nominees for three teaching awards: the Outstanding High School Chemistry Teacher Award, the Outstanding Middle School Science Teacher Award, and the Outstanding Elementary School Science Teaching Award (this is a new award). If you would like to nominate persons for these awards, contact Dr. William Rademaker at (804) 794-3752; **wrad @ verizon.net**. Each award consists of a plaque and a check for \$300.00. The teacher awards are sponsored by Boehringer Ingelheim Chemicals; the 2009 awards will be presented at the December 4 Section meeting, to be held at Virginia Union University in Richmond.

HISTORY OF THE VIRGINIA SECTION - 1993

Dr. W. Allan Powell compiled a history of the Virginia Section that was published in 1996 as "The First Seventy-Five Years" (the Virginia Section received its charter from the American Chemical Society on April 9, 1915; Dr. Powell's account ended in 1990). We are in the process of updating the history. Below is a draft of a narrative account of the Section's activities in the year 1993. We would appreciate comments, corrections, and suggestions on this. Please communicate your thoughts to James Beck, (804) 733-5286; **beckjd1977 @ comcast.net**.

1993

Chair - Patrick G. Barber

Chair Elect - Philip P. Burks, Jr.

Vice Chair - Elizabeth M. Hairfield

Secretary - Larry H. White

Treasurer - Meredith Moses

Councilors - Oscar R. Rodig, William F. Kuhn, R. Gerald Bass

Trustees - William R. Smithey, Jr.; James E. York, Jr.; J. Samuel Gillespie, Jr.

The Virginia Section held eight regular meetings during 1993:

January 22 - Randolph-Macon College, Ashland. John D. Chidley, "Trends in Environmental Remediation"

February 12 - University of Richmond, Richmond. Nicholas J. Turro, "Photoreactions of Organic Molecules Adsorbed on Zeolitic Molecular Sieves" (W. Allan Powell Lectureship)

March 10 - College of William & Mary, Williamsburg. Shelton Bank, "Serendipity in Chemistry—Was the World Really Flat Before Columbus?"

April 23 - University of Virginia, Charlottesville. Mauri A. Ditzler, "Discovery Chemistry: A Laboratory-Centered Chemistry Curriculum"

September 24 - Virginia Commonwealth University, Richmond. Charles E. Thomas, Jr, "The Science in Science Fiction"

October 22 - Mary Baldwin College, Staunton. N. E. (Nate) Houser, "Spandex Fibers"

November 12 - Mary Washington College, Fredericksburg. William Banks, "Diet, Nutrition and Cancer: Why You Should Eat Virginia Broccoli"

December 10 - Virginia State University, Petersburg. Sylvia T. Buffington, "Putting the Pieces Together"

Average attendance at the monthly meetings was 54. A meeting of Student Affiliate members was held in conjunction with the February 12 meeting at the University of Richmond. Thirty students and faculty members from five schools attended. Mr. David O'Neil, a Forensic Scientist at the Virginia State Lab, gave an informal talk that was followed by a question and answer period. Dr. Emma Goldman and the University of Richmond Student Affiliate Chapter hosted the meeting. The April meeting included a poster session that featured student research with 23 posters from seven colleges and universities. A Vendor's Show was held in conjunction with the September meeting; Phil Burks organized the Show.

The Virginia Section continued its longstanding practice of presenting awards to deserving individuals. The Distinguished Service Award was presented to Charles E. Thomas, Jr. Robert W. Jones of Lancaster High School in Lancaster County received the Distinguished High School Chemistry Teacher Award. The Distinguished Middle School Science Teacher Award was given to Patricia W. Zahl of Manassas Park Intermediate School in Manassas Park. Thirteen senior chemistry majors from colleges and universities within the Section were honored; each received a one-year membership in the American Chemical Society and a certificate of achievement. The Section recognized ten fifty-year members of the ACS. The student affiliate chapters at James Madison University and Mary Washington College received commendations from the national ACS. The Section received a Phoenix Award from the national ACS for the best 1992 National Chemistry Week

activity at a museum or library. Dr. Stuart Monroe was recognized as the coordinator of the 1992 NCW program at the Science Museum of Virginia. Bill Wingfield and Mary Randolph Spencer contributed significantly to the success of the activities at the Science Museum.

The Section participated in the **Chemistry Olympiad** with 177 students from 16 different schools taking the first- and second-year examinations. Seven of these students competed in the national Olympiad, with Bryan Meyers of Midlothian High School in Chesterfield County receiving High Honors. John Comerford coordinated the Olympiad. In November, **National Chemistry Week (NCW)** was celebrated with a full week of activities at the Science Museum of Virginia in Richmond. Four demonstration booths were operated for five hours each day. Over 120 volunteers helped to entertain and enlighten over 5,000 Museum visitors about chemistry. There was also a crystal growing contest for elementary and high school students. The NCW activities at the Science Museum were coordinated by Bill Wingfield. Over 3,000 copies of the ACS publication **WonderScience** were distributed at the Museum. During National Chemistry Week, Dr. Gerald Bass, Virginia Section Councilor, appeared live on a Richmond television program where he prepared some “slime” and discussed National Chemistry Week. The Section and Virginia Commonwealth University sponsored a teleconference, **Up with Chemistry**, on the teaching of chemistry. The Section paid the registration fees for participating high school teachers.

As of June 1, 1993, there were 1220 members in the Virginia Section. The budget for the Section showed \$18,700 in anticipated revenues. The Section mourned the loss of Dr. Oscar R. Rodig, who died on August 4, 1993. Dr. Rodig was an active member of the Virginia Section for nearly 40 years. He served as Chair of the Section in 1967 and received the Distinguished Service Award in 1974. He held many positions within the Section and at the national ACS and served continuously as a Councilor from 1969 until his death. Dr. W. Allan Powell completed the history of the Virginia Section from its chartering in 1915 through 1990. The history, to be titled “The Virginia Section of ACS: The First Seventy-Five Years” was to be published in 1994.

CAN YOU IDENTIFY THESE PERSONS?

The photograph is from 2006 when the individuals shown were working at the Science Museum of Virginia for the Section's celebration of National Chemistry Week. Both are educators; one teaches chemistry at John Tyler Community College and the other teaches at Virginia Union University. One has served as Chair of the Virginia Section and the other as Chair of the Section's Committee on Community Activities. Each holds a Ph.D. degree in Chemistry from Virginia Commonwealth University. Their undergraduate degrees are from Wheaton College and East Stroudsburg University.



The “mystery person” shown in the Summer Bulletin is **Dr. Elmer Gaden**, Professor Emeritus of Chemical Engineering at the University of Virginia and recipient of the 2009 Fritz J. & Dolores H. Russ Prize for his significant achievements in bioengineering. An account of the Prize can be found on page 49 of the March 23, 2009 issue of C&EN or online at www.cen-online.org. An accounting of Dr. Gaden's many achievements can be found at <http://www.aiche.org/About/Centennial/Mini/Profiles/Gaden.aspx>.

THE BULLETIN

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Ken Chapman

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