

THE OCTAGON



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Lehigh Valley Section of the American Chemical Society

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Next Meeting:

835st Meeting of the LVACS

*Thursday, September 20, 2012
Lafayette College*

Date: Thursday September 20, 2012

Event Location: Faculty Dining Hall, Marquis Hall, Lafayette College

Reception: 5:30, cheese, fruit, fresh garden crudites

Dinner: 6:00 PM

Meeting: Business Meeting at the conclusion of dinner

Talk: 7:30, Hugel Science Center, Jaqua Auditorium (Rm 103)

Menu: Buffet entrees - grilled Szechuan marinated flank steak, chicken mascarpone, and wild mushroom risotto w/spinach & sundried tomato; sides - green beans with carrots and red peppers, roasted potatoes; dessert - marble chocolate chip cake

Cost: \$25, students and retirees \$15

Contact: Debbie Bastinelli at 610-330-5213 or bastined@lafayette.edu by September 14

Map and Directions: <http://www.lafayette.edu/visit/maps-directions/>
<http://www.lafayette.edu/visit/maps-directions/campus-map/>

Speaker: Dr. Dana Ferraris
John Hopkins Brain Institute

Dr. Ferraris received his BS degree in chemistry from Lafayette College in 1994, his Ph.D. degree in chemistry from Johns Hopkins University in 1999 and his M.B.A. from Carey Business School in 2009. Over the past 10 years, Dr. Ferraris has held a variety of leadership positions in the pharmaceutical industry at Guilford Pharmaceuticals, MGI Pharma, and the Eisai Research Institute, where he most recently served as a Principal Scientist in Medicinal Chemistry. Dr. Ferraris has extensive drug discovery experience in oncology and CNS disorders. Dr. Ferraris' research efforts have resulted in two investigational drugs currently in development for the treatment of cancer. Dr. Ferraris joined Johns Hopkins University as a Principal Scientist in Medicinal Chemistry in 2009. He oversees medicinal chemistry activities at the BSi NeuroTranslational Drug Discovery Program with a primary mission of translating discoveries in basic science into novel therapeutics.

Title: *Current Landscape of Drug Discovery Research: Challenges and Opportunities*

Abstract:

As the cost to discover and develop a new drug eclipses \$1B, the pharmaceutical industry has been struggling to fill their pipelines with enough successful new medicines to maintain growth and replace revenues from older products going off patent. A system-wide decline in revenues has forced them to cut operational costs, seek mergers and acquisitions, lay-off of thousands of researchers and close research sites around the globe. A new trend in drug discovery research has found many of these ex-pharmaceutical scientists joining universities in an effort to initiate drug discovery research within academia. The academic approach to drug discovery has found scientists pursuing more high risk projects for less prevalent diseases, using more physiology based approaches and less target based approaches, discovering better biomarkers and models to characterize diseases leading to a more effective way to treat patients. The funding mechanisms for this research seems more prevalent from governmental, philanthropic and industrial sources. The end result is a fundamental shift in the way that drug discovery research is conducted.

Message from the Chair

While the Chemistry Olympiad gathered the next generation of bright and hard working scientists in Washington, DC, and as similarly hard-working athletes from all over the globe dazzled us with the results of their training and dedication in London, the Lehigh Valley section of the ACS was buzzing with activity.

One of the main conclusions of our strategic planning events earlier this year was that the LVACS web site needed to expand dramatically to communicate the many events and opportunities in our section. Members of the Executive Committee and Committee Chairs gathered at Cedar Crest College in July for a workshop hosted by Jeanne Berk on how to make and upload a web page. Our

web manager and editor of the Octagon, Michelle Jones-Wilson shared her invaluable experience with us, patiently leading the excitable group through the morass of bits, bytes and unwieldy ftps. The results can be found at <http://www.lvacs.net>. Please visit! You can find information about meetings, grants, who your officers are, what our committees are doing, the activities of our student chapters, notes from our councilors, and how to get involved.

Summer also brings those long, balmy evenings to our section, and members gathered on just such an occasion to socialize and support the Lehigh Valley Iron Pigs at Coca Cola Park. A huge thank you to Chester Crane, Lindsey Welch and Bill Miles for organizing this memorable event with colleagues, a superabundance of refreshments, great sport, and FeRROUS and FeFe! First pitch was admirably executed by the grandchild of our very own Treasurer, Roger Egolf. Couldn't make it? Try next year! This was my first and I loved every moment of it.

As some of our students get ready for their first undergraduate research presentations at the National Meeting of the ACS in Philadelphia on August 20, 2012, we are celebrating the 75th anniversary of ACS Student Members! Do you know your closest student chapter? Have you considered supporting these young members in the future, or have you done so in the past? We would love to hear and share your stories! Greglynn Gibbs, our Chair of Public Relations, is facilitating the interactions of student chapters with LVACS.

Ending with a very exciting item... LVACS was nominated for a ChemLuminary Award for Outstanding Performance by a Local Section (Medium Large)! Congratulations to Past Chair Nigel Sanders for conducting the Section so successfully last year, and many thanks to everyone who contributed towards the events that led to that nomination. Yes, summer is in full swing, and the Section is thriving! I look forward to hearing from you to add your unique contributions to the LVACS.

Lorena Tribe, Chair LVACS

Apply for a Travel Award to the ACS International-Domestic Student Summit

International and domestic students studying in the U.S. are invited to apply for a travel award to attend the upcoming ACS International-Domestic Student Summit in Raleigh, NC from November 11-17, 2012. Approximately twenty graduate and/or undergraduate students will be chosen to participate in the Summit to discuss promoting cross-cultural understanding, increasing international skill flow and collaboration, and utilizing the unique resource that 700,000 international students studying in the US provide. Winners receive roundtrip economy airfare, lodging, meals, a soft-skill workshop, and SERMACS registration. For more information and to learn how to apply before the August 31, 2012 deadline visit the Summit ACS Network group and then contact your ACS Local Section.

2012 Foundation in Chemistry Award

Congratulations to Kristen Leskowich, the winner of this year's Foundation in Chemistry Award. Kristen, a graduate of Northern Lehigh High School, will be attending Lehigh University, majoring in chemical engineering. In addition to her academic achievements, she has been a president of her class, a Rotary Speech contest winner, and a soccer player. As part of her Advanced Independent Study in Chemistry, she has developed and written several experiments employing Vernier probeware for her chemistry teacher, Dr. Deanna Quay.

We had many outstanding applications this year from across the Valley. The Section wishes the best to all of the students who are pursuing majors in the chemically related disciplines.

LVACS - ACS ChemLuminary Finalist!

LVACS was informed in June by ACS President Bassam Shakhashiri that our section had been selected as a finalist for the 2011 ChemLuminary Award category "Outstanding Performance by a Local Section (Medium Large)." This is a significant honor for our section and speaks to the high level of achievement we have achieved as a section in key impact areas important to ACS such as community outreach, education, member improvement

and collegiality in our science and allied fields. Remarked Carol Baker-Libby, LVACS councilor, upon hearing of the award: "WOW... outstanding performance by medium large local section for 2011!! This is a BIG deal, a coveted recognition.... congratulations to you all for nominating and getting noticed."

The ChemLuminary Awards event, held in conjunction with the 244th National Meeting in Philadelphia on August 21st, 2012, will include a slide show and posters highlighting all of the nominees' 2011 activities during a pre-ceremony reception. If you were not able to attend the meeting, we'll be presenting the poster at our first section meeting of the year, Thursday, September 20th, 2012 at Lafayette College. The 2011 report is available at the end of this issue.

2012-2013 LVACS Meetings

October: Moravian College - details TBA

November: November 29th, Lehigh University
"The Chemistry and the Business of the Global Flavors and Fragrances Industry",
Kimberly Kellow and Louis Lombardo

January: January 22nd Webinar
"Pulling proteins apart on a computer: How and why?", Rigoberto Hernandez, PhD.

February: Muhlenberg College- details TBA

March: High School Teachers' Night at DeSales – March 22, 2013

April: Student poster session at Cedar Crest College – details TBD

May: TBA

Summer: Iron Pigs Baseball - date TBA



***Longtime ACS Member
and former LVACS chair
Thomas B. Lloyd Passes***

Thomas B. Lloyd, 90, of Bethlehem, died on July 9, 2012. Born: Born in Reedsville, WV,

he was a son of Hazen C. and Dolvena Buchanan Lloyd. Personal: He was married to the late Barbara S. Lloyd for 59 years. He is survived by his loving companion of seven years, Fran Dreisbach of Easton. Although cancer took his life, he kept his sense of humor, intelligence, and wit until the end. He was a research scientist at Lehigh University for 21 years, involved in surface and material chemistry and environmental science, and he mentored many graduate students. He published extensively. Listed in Who's Who in America, he was Chairman of the Lehigh Valley section of the American Chemical Society (1952) and President of the Engineers' Club of the Lehigh Valley (1960). He organized the Fowkes Institute of Surface Chemistry scholarship program at Lehigh, and was pleased to bestow the award on many bright young chemistry students. Prior to 1983, he worked 30 years in research supervision with the New Jersey Zinc Company in Palmerton, after seven years on the chemistry faculty of Muhlenberg College, Allentown. He received a BS degree from Washington & Jefferson College, served in the U.S. Navy (CBs) during World War II, and earned MS and PhD degrees from Western Reserve University in physical chemistry. His boyhood was spent in Ellsworth, PA, and he graduated as valedictorian of his class at Ellsworth-Cokeburg H.S. in 1939. A world traveler, he visited England, Spain, Mexico, Australia, Thailand, India, Afghanistan, Turkey, Greece, Italy, Czech Republic, Nicaragua, Ukraine, Egypt, Argentina, and Brazil. He loved to work in his vegetable gardens, and to swim in the ocean. He gave generously to dozens of

charities. His children fondly remember his many stories, sayings, and jokes, and his commitment to saving and re-using everything. Memberships: As president of the Palmerton Area School Board, he was active in establishing the Carbon County Vo-Tech High School, the Lehigh-Carbon Community College, and building the Palmerton Area High School. Active in the Episcopal Church, he was superintendent of St. John's Church school (Palmerton) for 25 years and served on the vestry. He served on many diocesan committees, including the Standing Committee for 15 years, the first Commission on Ministry, the World Mission Committee, and he founded the Peace Commission. At Nativity Church, Bethlehem, he was a long-time member of the Adult Education Committee, and a volunteer and supporter of New Bethany Ministries. A committed believer in peace and justice, he was active in the work for peace of the Lehigh-Pocono Committee of Concern (LEPOCO) for 45 years, chairing the fundraising effort and serving on the Steering Committee. He received peace awards from both LEPOCO and The Episcopal Diocese of Bethlehem Peace Commission. He and his wife Barbara hosted several notable people in their home, including professor and author Howard Zinn and Nobel Peace Prize winner Adolfo Perez-Esquivel. He was a long-time board member of Allentown Community Concerts, and had a deep appreciation of music. Survivors: He is survived by son, Thomas B. Lloyd, Jr. and wife Anne of Front Royal, VA; daughters, Judith Lloyd and husband David Wallace of Brunswick, ME, and Althea Lloyd and husband Jurg Jenzer of Brattleboro, VT; and honorary son, Oscar Calix of El Salvador. He is also survived by sisters, Marjorie Pinkney of Bethel Park, PA, Virginia Reich of Harlingen, TX, Mary Louise Keller, of Los Alamos, NM; sister-in-law, Irene Shinsec of Palmerton; six grandchildren, two great-grandchildren and many nieces and nephews. He was predeceased by his brother, Hazen Lloyd, Jr., of Palmerton.

LVACS Officers - 2010

Chair: Lorena Tribe
218 Luerssen Building
Penn State - Berks
Tulpehocken Road, P.O. Box 7009
Reading, PA 19610
lut1@psu.edu

Immediate Past Chair: Nigel Sanders
Specialty Minerals Inc.
9 Highland Avenue, Bethlehem, PA 18017
(610) 861-3457 nigel.sanders@mineralstech.com

Chair Elect: Tara Baney
118 Cobblestone Dr, Gilbertsville, PA 19525
tsbaney@gmail.com

Treasurer: Roger Egolf
Penn State Lehigh
Center Valley, PA 18034
(610) 285-5110 rae4@psu.edu

Secretary: Kelley Caflin
PO Box 7 Portland, PA 18351-0007
kelley.caflin@us.army.mil

Councilor: Carol Baker Libby
Moravian College,
Bethlehem, PA 18018
(610) 861-1629 cblibby@cs.moravian.edu

Councilor: Pamela D. Kistler
Cedar Crest College, Allentown, PA 18104
pdkistle@cedarcrest.edu
(610) 437-4471 x 3508

Alt. Councilor:
T. Michelle Jones-Wilson
East Stroudsburg University
East Stroudsburg, PA 18301
(570) 422-3703 mjwilson@po-box.esu.edu

Alt. Councilor:
John Freeman
East Stroudsburg University
East Stroudsburg, PA 18301
(570) 422-3446 jfreeman@po-box.esu.edu

Octagon Editor & Webmaster:
T. Michelle Jones-Wilson (see above)
lvacs@ptd.net

Submissions to the Octagon

LVACS members, we want to know about what you do! Please submit pieces of interest to the chemistry community for publication in the Octagon. Articles about chemistry or science in the Lehigh Valley are always welcome. Let us know about upcoming events, educational opportunities or job openings.

The Octagon is published eight times per academic year, September through May. Each issue generally arrives three weeks before a section meeting. Thus the deadline for submissions is approximately one week earlier. Please email the editor at lvacs@verizon.net for specific questions about deadlines for any issue. Email submissions to lvacs@verizon.net

A note about formatting:

Please submit text as simple .txt files, or you may paste the text into an email. If you use later versions of MS word please do not submit documents as .docx files. I cannot always read all content in .docx formatted files. It would be best to use the "save as" option, generally found under the file menu, to save the document as .txt. Also images embedded (pasted) in MS word (particularly later versions) are problematic to extract and put in the newsletter while retaining good image quality. Whenever possible, please submit images in a standard format such as .jpg, .jpeg, .gif, .tiff or .bmp as individual files, rather than embedded within a document. If the placement of images is critical you could submit two versions (one embedded so that I can see where you would like images placed) and the other as separate files so that I may maintain figure resolution.

LEHIGH VALLEY ACS SECTION – 2011 ANNUAL REPORT

IYC 2011 was a very full year for the LVACS. Starting with ACS leadership training (2 officers), we were able to plan and carry out special IYC and NCW outreach events (7 in all) as well as work the themes into our regular meeting program. The member events (9 in all) were diverse in themes, ranging from fundamental chemistry lectures to informal poster sessions to applied chemistry demonstrations to chemical education to chemistry for fun and purely social events. The executive board had three planning meetings and two progress meetings (5 in all). Chair Nigel Sanders also led the section through a much-needed complete revision of our 30-year old bylaws, passed in November and certified in January 2012. Our secretary, Kelley Caflin, put LVACS on the Facebook map this year as well.

Chair Nigel Sanders and Chair-elect Lorena Tribe attended the leadership institute, bringing back many new ideas including tying more section events into venues of local social/historical significance.

To kick off LVACS' IYC, Bill Miles, past Chair, participated in "Making Oxygen" and "Making Snow" demonstrations for the public at a special IYC outreach event sponsored by the Philadelphia ACS section and the Franklin Institute in Philadelphia. Lorena Tribe, Chair-elect, organized three Science Cafés around the water theme of IYC in the spring while serving as section coordinator for IYC. Lorena brought speakers from Albright College and the Berks county conservation district to discuss "Water Stewardship and Conservation." at three public-centered locales: Café Harmony, the GoggleWorks and Barnes & Noble, all in the Reading, PA area. Bill Miles sponsored a Science Café at the B&N in Bethlehem Township in April with Diane Husic of Moravian College challenging the audience with "Climate Change is Not a Spectator Sport."

Section meetings in spring 2011 featured a diverse range of topics from industry (Nigel Sanders, Specialty Minerals, "Calcium Carbonate: An Ancient 'High Tech' Material - from Blackboard Chalk to Invisibility Cloaks!" at Muhlenberg College) to military/government (Paul Anderson, US Army, Picatinny Arsenal, "Design of Experiments and the Development of Explosives for the Warfighter" at Cedar Crest College) to well-known academic researchers (ACS past president Joe Francisco, Purdue, "From Earth's Atmosphere to Planetary Engineering of Mars: An Adventure in Chemistry" at Moravian College). Other highlights of the April meeting were our annual student poster night, which featured the research of about 50 local college students and our annual presentation of 50 and 60 year ACS anniversary certificates. We studied beer-making chemistry at our final spring meeting in May at a local microbrewery, the Allentown Brewworks.

Once again we celebrated summer with an outing to cheer on our local AAA minor league ballclub, the Lehigh valley IronPigs and their uniquely chemical mascots Fe₂ROUS and FeFe. Libations came in specially designed 2011 IYC glasses supplied by the section.

The fall brought an excellent young chemist from Princeton University, Paul Chirik, to Lafayette College for our September section meeting speaking on "Base Metal Catalysis." October's meeting, at PSU/Berks (the re-schedule of the snowed-out January meeting), was a tutorial on new trends in undergraduate educational methods. Ike Shibley and Katie Amaral of PSU/Berks demonstrated how "Blended Design" – combining traditional face-to-face approaches with on-

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Thursday, May 26 2011 – 7 PM

Free and open to the general public.

Barnes & Noble Bookellers Reading
Broadcasting Square Shopping Center
2751 Papermill Road, Wyomissing, PA
19610
(610) 236-0100

The stewardship of water

Presentation by

Christian S. Hamann, Ph.D.



Introduction by

Lorena Tribe, Ph.D.
IYC 2011 Coordinator – LVACS



A Science Café in celebration of the
International Year of Chemistry



Annual Iron Pigs Outing!



Allentown Brewworks



Hampton Winds, NCC

Science Café – 2011 IYC Water Theme

National Chemistry Week



Calcium Carbonate: An Ancient 'High Tech' Material from Blackboard Chalk to Invisibility Cloaks!



Lehigh U – International Poster Night

Speaker Steven D. Young and former ACS President Paul S. Anderson

LEHIGH VALLEY ACS SECTION – 2011 ANNUAL REPORT

line and classroom interactive media – has improved the students' success rate in elementary Chemistry from 50% to 70%. The older members got to “go back to the classroom” with a taste of ‘clicker’ questions! The November meeting took us to an interesting venue: Hampton Winds, the on-campus restaurant of the Culinary Arts School of Northampton Community College for a dinner prepared by the gourmet chefs of tomorrow. Ryan Fealey of another of the section's community colleges, Bucks County CC, talked about “Synthesis and Electrochemical Studies of ruthenium (Ru) and iridium (Ir) complexes containing multiple metal centers” using the Rotating Ring Disc Electrode (RRDE) technique.

The LVACS celebrated National Chemistry Week led by David Aurentz of PSU/Berks, LVACS NCW coordinator and Greglynn Gibbs, PSU/Berks Research Technologist. The Penn State Berks Chemical Society, the student chapter of the ACS, held a “Family Fun Night with Chemistry” for children and parents in partnership with the Reading Public Library, Reading, PA on October 20th. “Chemistry, Our Health, Our Future” was also the subject of a NCW event supported by an ACS mini-grant and conducted in cooperation with the Girl Scouts of Eastern Pennsylvania at the PSU/Berks campus on October 22nd.

The IYC 2011 year ended with an innovative December meeting: a joint session with the local section of the American Institute of Chemical Engineers (AIChE). Past ACS president Ned Heindel of Lehigh University received an ACS grant to sponsor a truly international poster session to start the meeting off. Students from eight countries (India, Ghana, Kenya, Poland, Syria, France, China, Greece) presented posters themed on the chemistry which they associate with their home countries: in history and today. An example was a poster by Berenika Kokoszka, a native of Poland, which introduced us to the most famous Polish-born chemist, Madame Marie (Maria) Curie Sklodowska, and told us about the diversity of ‘elemental’ (mineral ore) wealth which underlies much of Poland. Paul S. Anderson (yet another past ACS president!), introduced a world-class industry speaker, Dr. Steven D. Young, retired VP of Basic Research and former Head of the Department of Medicinal Chemistry of Merck-West Point. Steve, currently a consultant and Acting Head of Chemistry for BeiGene LTD, an innovative oncology-focused biotech company located in Beijing, China, completed our IYC 2011 “World Tour” in this unique meeting with “The Globalization of Medicinal Chemistry in 2011.” He described how the advent of off-shore pharmaceutical scale-up and manufacturing has changed the game at major pharma companies like Merck, leading to a re-focusing of internal chemical talent on primary drug discovery.

Throughout the year, section members devoted time to the education of future chemists. In November, Chair-elect Lorena Tribe visited the Wyomissing Area Junior/Senior High School to lead students through the IYC Global Experiment as part of their Career Fair. In December, Chair Nigel Sanders visited Bethlehem's Broughal Middle School to present an interactive lecture and demonstrations to 65 sixth-grade students who had just studied Matter, the Elements and the Periodic Table. His subject matter focused on chemistry of the simple, ubiquitous mineral limestone (CaCO_3), its biological origins, the diversity of calcium carbonate forms in natural systems and how the chemistry of calcium carbonate impacts its many uses in industry and consumer goods.

Nigel D. Sanders, 2011 LVACS Chair