THE OCTAGON

Volume 85, No. 11, October 2002 Lehigh Valley Section of the American Chemical Society

In This Issue:

759 th LVACS Meeting:

Date: Tuesday, October 15, 2002
Location: Kutztown University
Reception: 5:30 PM - 6:30 PM; South Dining Hall
Dinner: 6:30 PM; South Dining Hall
Menu: Salad, Moroccan chicken, rice pilaf, vegetable medley, Strawberry cheesecake.
Meeting: At conclusion of dinner; South Dining Hall
Cost: $20.00 for members, $10.00 for students.
Contact: Donna Moore, (610) 683-4447 by 4:00 pm Oct. 9. Please your provide name and affiliation.
Directions: South Dining Hall is located on the campus. If you are coming on Rt. 222 from the east, get off at the Kutztown exit onto Main Street. You will go through four stop lights. At the fifth stoplight, which is at the top of the hill and the entrance onto the campus, make a left onto Normal Avenue. At the first stop sign take a right onto Baldy St. At the first intersection, turn right onto South Campus Drive. Drive by the Field house and turn left onto Court Lane. There should be plenty of parking in the lot. If you are coming on Rt. 222 from the west, get off at the Kutztown exit that is about a mile past Moselem Springs. At the second stop light, turn right onto Normal Avenue and follow the directions from above.
Please see the website for complete directions and a campus map. http://www.esu.edu/lvacs/meetings.html

Speaker: **Dr. Jeff Saven**

Talk: **"Combinatorial protein libraries: approximate approaches to protein design"**

Born in Manhattan, KS, Dr. Jeffrey G. Saven obtained his B.A. degree in Chemistry from New College of the University of South Florida in 1988. As an NSF Graduate Fellow, he earned his Ph.D. degree in Chemical Physics from Columbia University. However, the bulk of his dissertation research was done while working with Dr. James L. Skinner in the Department of Chemistry at the University of Wisconsin, Madison, where he studied applications of statistical mechanics and simulation to condensed phase spectroscopy. He was an NSF Postdoctoral Fellow at the University of Illinois, Urbana-Champaign, where he studied protein folding with Dr. Peter G Wolynes. Dr. Saven has been an Asst. Professor in the Dept. of Chemistry at the University of Pennsylvania since 1997. His honors include a Research Innovation Award and an NSF CAREER Award. He is also a Cottrell Scholar and an Arnold and Mabel Beckman Young Investigator. His research interests include the theory and simulation of molecular folding and combinatorial design.

For a recent review of his current work please see
J. G. Saven, Designing protein energy landscapes. Chemical Reviews, 2001. 101(10): p. 3113-3130.
J. G. Saven, Combinatorial protein design. Current Opinion in Structural Biology, 2002. 12: p. 453-458.

2002-2003 Meeting Schedule:

(Please *pencil* these dates on your calendar)
September 12, East Stroudsburg University
October 17, Kutztown University
November 20, Lehigh University
January 22, Muhlenberg College
February 20, Lafayette College
March 14, DeSales University
April 15 or 16, Moravian College
May (TBA)

LVACS Officers:

Chair: Joe Sherma
Lafayette College, Easton, PA 18042
shermaj@mail.lafayette.edu 610-330-5220

Chair Elect: Paul Bouis
Mallinckrodt Baker Inc., Phillipsburg, NJ 08865
paul.bouis@tycohealthcare.com 908-859-9443

Secretary: Tara Baney
Merck Research Laboratories, Dept. 864,
10 Sentry Parkway, BL1-4, Blue Bell, PA 19422
tara_baney@merck.com 484-344-3346

Treasurer: John Freeman
522 Raub St., Easton PA 18042
jcf2@fast.net 610-923-358

Councilor: Roger Egolf
Penn State LV Campus, Allentown, PA 18051
rae4@psu.edu 610-285-5110

Councilor: Pamela D. Kistler (2000-2001)
Cedar Crest College, Allentown, PA 18104
pdkistle@cedarcrest.edu
610-437-4471 Ext 3507

Alternate-Councilor: T-Michelle Jones-Wilson
East Stroudsburg University
East Stroudsburg, PA 18301
mjwilson@po-box.esu.edu 570-422-3446

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

LVACS Elections:

Please see Ballot on Page 7
Nominees for Chair-Elect - (to serve one-year term starting January 2003)

Steven Weiner - Assistant Professor of Chemistry
Muhlenberg College
sweiner@hal.muhlberg.edu; 484-664-3665
B.A., Brandeis University, Ph.D., Brown University
Postdoctoral, University of Michigan
Professional interests: Computer modeling and visualization of proteins in the undergraduate biochemistry curriculum. Substrate specificity and kinetics of cysteine proteases.
Statement: The local ACS section can serve to strengthen the community of chemists and should reach out to the future generations of chemists by getting undergraduates involved in its activities. I would support and advise those who want to establish or maintain an active and vital student affiliates chapter. By streamlining communication between members of the Section, this should have a positive impact on future programming. Through the meetings and other events, new relationships can be forged between our future chemists and our professionally experienced members.

Chip Nataro - Assistant Professor of Chemistry
Lafayette College
nataroc@lafayette.edu; (610)-330-5216
B.S., Messiah College; Ph.D., Iowa State University;
Postdoctoral, University of Vermont
Professional interests: Currently, students in my lab are preparing transition metal complexes with 1,1'-bis(di (aryl or alkyl)phosphino)metallocenes. Once prepared, we are studying the compounds electrochemically. We also plan on investigating the heat of protonation of the starting phosphines. My teaching interests include inorganic, general and environmental.
Statement: I would like to see travel grants for students presenting at ACS national meetings be available. I would also like to see a student research symposium for schools in the valley. Clearly my main focus as chair would be closely tied with my favorite aspect of my position at Lafayette, undergraduate students.

CAS & ACS Publications Make Early 20th Century Research Available Online

Chem. Abstracts records from the early 20th century will be linked to the ACS Journals Archive, permitting researchers to identify articles of interest in ACS journals back to the first issue of CA in 1907, then link to the full-text articles from ACS. The combined power of these two massive resources will be boost their value for researchers, who have eagerly sought the enhancement. In effect, two complementary ACS projects have been brought together to provide scientists the benefit of advanced information retrieval with the availability of a vast electronic collection of original journal literature. For more information, call 614-447-3731 or send email to help@cas.org.

September Meeting Minutes:

The 758th meeting of the LVACS was called to order by Chair Dr. Joe Sherma at 7:35 PM on Thursday, September 12, 2002. East Stroudsburg University hosted the meeting on their campus. Incidentally, this is the first time in approximately 10-15 years the LVACS held a meeting at this location. The many items discussed prior to the lecture are as follows: Dr. Sherma welcomed all the attendees to another year of LVACS activities. He noted the fabulous improvement in the Octagon, due to the hard work and dedication of Dr. Michelle Jones-Wilson. He also thanked ESU for their technical- and resource-support to allow the website to exist. There was much agreement in this statement arising from the audience. If anyone has any additional suggestions, comments, articles, etc., please contact Dr. Jones-Wilson. Please also contact her if you wish to have the Octagon sent to you via e-mail rather then traditional mail. The website address is http://www.esu.edu/lvacs/. Please take a look at the site for a plethora of valuable information. The Treasurer's Report was tabled until October. The May minutes were approved; however, the April minutes need to be published in the October Octagon for approval. Dr. Sherma then asked the attendees for the answer to the September Octagon's "Question of the Month:" Four Scientists were dual Nobel Laureates. Who were they? 1. Linus Pauling 2. Marie Curie 3. Fredrick Sanger 4. John Bardeen

Next, Dr. Sherma noted the October Octagon will contain election ballots for the upcoming year. Dr. Carol Libby, Chair of the Election Committee, briefly listed the nominees so far for the election (also see the website for detailed information): Chair-Elect: Steven Weiner and Chip Nataro; Secretary: Tara Baney;
Treasurer: John Freeman; Councilors: Pam Kistler and Michelle Jones-Wilson. No additional nominations were announced at this meeting. If anyone is interested in running for an office or nominating someone, please contact Carol Libby as soon as possible. Dr. Jones-Wilson stressed to the attendees to read the instructions for voting carefully. Dr. Sherma reminded us that the nominees for Chair-Elect for 2004 need to be from industry, since those from 2003 are from academia.

Dr. Sherma noted the terrific job done by Dr. Paul Bouis regarding the by-laws. The revised document is on the web, under the heading "Proposed Changes to by-laws'." Please review and direct questions and comments to Dr. Bouis. The chain of events for complete approval is such: The National ACS, the Local Executive Committee, and the Body of Members. Once this is performed, then the by-laws will be officially updated. Dr. Sherma asked for a brief commentary of the National ACS meeting held in Boston. Dr. Pam Kistler and Dr. Roger Egolf volunteered, and detailed information is located in the October Octagon, as well as linked to the minutes on the website.

Dr. Jones-Wilson introduced our speaker for the evening, Dr. William Cherry, MD, PhD. The title of Dr. Cherry's talk was "History and Medical Implications of Chemical/Biological Warfare." Dr. Cherry began by explaining why an anesthesiologist with a PhD in Chemical Quantum Mechanics is interested in discussing chemical and biological warfare. He stated two main interests: 1. A great interest in public health. For example, while in graduate school he was asked what he would do if a large chemical spill occurred in his town/city/etc. His initial response was to "get away." This, Dr. Cherry explained, is the worst thing a person can do. If many people decided to run/drive away, the roads would be blocked, inhibiting rescue and Hazmat personnel to arrive at the incident efficiently. In addition, being outside exposes a person to the chemical that spilled. The best defense is to find a room or building with re-circulated air. His second interest is acetylcholinesterase. This is the enzyme acted upon by anesthetics to paralyze a patient when preparing for surgery. Acetylcholinesterase is an excellent target molecule for those interested in chemical and biological warfare. Dr. Cherry notes that in his profession, this paralysis needs to be completely reversible. To those in warfare, it does not. Dr. Cherry next gave the attendees an awesome history of chemical, biological, and product-oriented warfare agents. He began by stating "We've been throwing chemicals at each other for thousands of years." Sulfur and irritants were the first types of chemical weapons, and during WWI, bromine-substituted toluenes and carboycyclic acids surfaced. Then came mustard gas, first used by the Germans. Dr. Cherry explained that mustard gas is actually a viscous fluid with a boiling point of ~140? C, and is a blistering agent. He then detailed the simple synthesis, and noted other chlorine compounds that were used by dispersion in air. Although no one really knows why the blistering occurs, Dr. Cherry explained the major effect to the body is DNA alkylation. The N7-guanine is alkylated, leading to crosslinking, and this gives blisters all over the body. Mustard gas does not kill, but the menacing manner in which the blisters occur incapacitates the victim. In war, this allows the opposing forces to take control. The Germans originally developed nerve gases, which are also actually liquids, as insecticides. Nerve gases are phosphate esters with a good leaving group. The early naming conventions (pre-1940) are "GA - GF;" the G representing German. Later "weapons" were more potent, developed by the US and Britain, and those were named "VX." Dr. Cherry reminded us of the incident ~5-8 years ago in Japan when sarin was released in a densely populated subway. He also told us that after WWII, it was discovered that the Germans stockpiled (in mortar shells) about 3000 tons of sarin, and never used them. No one knows why. In terms of toxic doses, Dr. Cherry showed the attendees the following: Mustard Gas 23 -1000 g/min m^3, GB 20-80mg/kg, VX 7 - 70 mg/kg. Note that these doses depend on the route of administration. One needs a fairly large dose (gram amounts) to fall fatally ill.

Next, Dr. Cherry discussed acetylcholine, a very important serine-based neurotransmitter, which breaks up esters, and how it relates to nerve gases. Acetylcholinesterase is one of the fastest enzymes known. He detailed a nerve/muscular junction, and explained polarizing and re-polarizing to allow transmission (and ceasing) of biochemical information. The audience also saw the acetylcholine junction, which is very important in the autonomic system. This lead to a description of the sympathetic and parasympathetic sections of the autonomic nervous system, and detailed receptors and fibers associated with acetylcholinesterase function. Dr. Cherry explained the clinical symptoms of exposure to such agents as GB and VX, and noted that the army has been extensively studying the mechanism. Dr. Cherry moved onto a discussion of biological weapons, first asking why use such a manner of destruction. He showed the audience a list of costs, noting biological weapons are cheap, and in many cases, much more effective. History also shows us, from 1340 when people threw plague-infested bodies at others in order to transmit the disease, 1754 when people were wrapped in small pox-infested blankets, to the most recent Anthrax attacks in the mail. He detailed a bacterial weapon (Anthrax), viral (West Nile Virus), and a product from a bio-organism (Botulinus). The audience was engrossed with the chemical and clinical information presented. After his talk, Dr. Cherry answered many questions, and was presented with a gift to express the section's appreciation. The meeting was adjourned at 9:06 PM.
Respectfully Submitted, Tara S. Baney Secretary, LVACS 15-September-2002

Secretary's note: See the following website for a 3-D rendering of acetylcholinesterase, as well as detailed biochemical information. http://srv2.lycoming.edu/~newman/courses/bio43799/ acetylcholinesterase/

April Meeting Minutes:

(The Editor apologizes for the late publication of these minutes in the Octagon)

The 756th meeting of the LVACS was called to order by Chair Dr. Joe Sherma at 7:47 PM on Wednesday, April 10, 2002; Student Awards Night. Lafayette College hosted the meeting on their campus, showcasing Marquis Hall and the Jacqua Auditorium of Hugel Hall. The items discussed prior to the lecture are as follows: Dr. Sherma congratulated the students' and noted the individuals would be announced later in the meeting. John Freeman gave the Treasurer's Report; we have $11,693.38 in the budget, $1545.53 in the Scholarship Fund, and $31,378.95 in our Merrill Lynch account. Dr. Sherma mentioned the highlights from the Executive Committee meeting, held just prior to the dinner and main meeting. The Foundation of Chemistry Scholarship is under revision, and will be completed by the end of the summer. Ideas for improvement include specifying which institution the student will attend, and noting a major in the chemical field, not solely studies in chemistry/chemical engineering. Academics and scholarship will be a stronger focus, and financial need a secondary criteria. The committee is interested in comments and ideas from the members on additional scholarships. Also, the committee discussed the detailed revision of the by-laws, synthesized by Dr. Paul Bouis. The chain of events for complete approval is such: The National ACS, the Local Executive Committee, and the Body of Members. Once this is performed, then the by-laws will be officially updated. In addition, the National Division of Polymer Chemistry is interested in working together with our local section. Some ideas are hosting a polymer topics group, assisting with speakers for future meetings, and contributing stories for the Octagon. If anyone is interested in pursuing this further, please contact Dr. Sherma. Next, the members heard from last year's Foundation in Chemistry Award Recipient, Kathryn Sullivan. She expressed her gratitude for the scholarship. She is a chemistry major and thoroughly enjoys the work and challenges. Afterwards, Dr. Paul Bouis spent some time discussing job opportunities and statistics for chemistry and chemical engineering majors. He noted that in years past many believed in a "single employer;" today's job arena is significantly different, and one can change employers frequently. Dr. Bouis displayed and referenced a number of C&E News articles, graphs, and tables. Noteworthy are the 20-August-01 (salary survey) and 12-November-01 (employment outlook) issues of C&E News, and the valuable job resources through the ACS (see our local website http://www.esu.edu/lvacs/ for additional information). Those willing to do applications work can find a job in virtually any field. In addition, forensic science is a growing field of choice for chemists' at all educational levels.

Next the ACS Award winners were announced. A faculty member at their respective institutions introduced the following students: Albright - Audrey Smeltzer, Alvernia - Ken Hamilton, Cedar Crest - Mary Staaby, DeSales - Joseph Kozole, East Stroudsburg - Timothy Kline, Kutztown - Francisca Ham, DeSales - Joseph Kozole, Lafayette (Chemistry) - Megan Brennan, Lafayette (Chem.Eng.) - Angelina Kulbick & Matthew Falzone, Lehigh - Jennifer Warner, Moravian - Julie Jones, Muhlenberg - Andrea Cerrone. All students were applauded for such a wonderful achievement.

Prior to the main talk on chemical history, Dr. Sherma noted the exceptional connection to chemical history and Lafayette College. This institution holds the distinction of having the first ACS student affiliate organization, approved in 1937. Additional events in the ACS history can be found at http://pubs.acs.org/cen/125th/html/7913events.html.

Charles Nutaitis introduced our speaker for the evening, David Brock. The title of Mr. Brock's talk was "Varieties of

Chemical History." Mr. Brock began his talk with a background discussion of the Chemical Heritage Foundation (http://www.chemheritage.org/). Quoting directly from the site, "The Chemical Heritage Foundation (CHF) seeks to advance the heritage of the chemical and molecular sciences by operating an historical research library; discovering and disseminating information about historical resources; encouraging research, scholarship, and popular writing; publishing historical materials; conducting oral histories; creating exhibits; and taking other appropriate steps to make known the achievements of chemical and molecular scientists and engineers and of related sciences, technologies, and industries." Two mechanisms utilized for the preservation of chemical history are the Othmer Library and the Beckman Center for the History of Chemistry. Both of these institutions can be accessed through the above website.

Mr. Brock led the audience on a "tour" of chemical history, with numerous pictorial examples. He explained in detail how chemistry and chemical engineering has influenced many, almost all, aspects of life and society. The list of our "tour" stops is as follows: Information, Environment, Economy, Energy, Material Culture, Agriculture, Warfare, Health, and Life Sciences. Intermixed were examples from digital computing requiring an in-depth knowledge of polymer synthesis, to the Industrial Revolution, petroleum, fuel cells, etc. Mr. Brock noted the advances in harvesting crops, genetic engineering, and other agricultural advances. In addition, the major changes in health care and screening techniques are valuable pieces of information that need to be kept and reviewed in such institutions as the Othmer Library and Beckman Center.

Mr. Brock concluded by explaining the various ways to acquire this historical information, such as chemical and historical literature, oral histories (extremely rare and valuable), advertisements and catalogues, & doctoral and imagery archives. At the end of his talk, Mr. Brock answered some questions, and was presented with a gift to express the section's appreciation. We were directed to some literature about the Foundation that we could take home with us. The meeting was adjourned at 9:10 PM.

Respectfully Submitted,
Tara S. Baney, Secretary, LVACS, 30-April-2002

Councilor's Report:

ACS National Meeting, Boston, Massachusetts
August 18 - 22, 2002

Acknowledgment – Portions of this report was provided by the councilors from the division of the History of Chemistry, Mary Virginia Orna and Ben Chastain. They are not responsible for the content of this report since we have added and removed material.

Elections - Elections to the elected committees of the Society took place. Elected to the Committee on Committees were William H. Breazeale, Jr., Peter K. Dorhout, Nancy B. Jackson, Mamie W. Moy, and Wanda W. Rauscher. Elected to the Council Policy Committee were Eric C. Bigham, Martha L. Casey, Janan M. Hayes, and Sharon P. Shoemaker. Elected to the Committee on Nominations and Elections were Peter A. Christie, Valerie J. Kuck, Bonnie Lawlor, James W. Long, and Sara J. Risch.

Reports from the Presidential Succession - President Eli Pearce reiterated (but also changed the emphasis on) the main themes of his presidency, which were diversity, communication, electronic services, and interdisciplinary research in the spring, but have shifted to diversity, globalization, and employment opportunities. With respect to diversity, President Pearce reported that women now comprise 25% of the ACS and that 50% of new members are women. However, not as much headway has been made with respect to underrepresented minorities, which collectively only comprise 2% of the Society. He promised to work on relationships and interactions with these groups. The impact of globalization is under study in cooperation with the American Institute of Chemical Engineers and other allied groups. With respect to employment opportunities, he elaborated on some new initiatives: a Legislative Action Network and a Mathematics and Science Partnership program- President-Elect Elsa Reichmanis reported that she is guiding the Society in increased high-level interaction with government agencies dealing with science and science policy. Her focus is on communication with the public, with the government, and with fellow scientists. She is publicizing chemistry as the enabling science that has the most impact on our daily lives.

Other Reports- The ACS severe operating budget deficit this year continues and, in fact, is even worse than reported at the spring meeting. Consequently, the ACS is allocating all of its resources only along the lines of its ten strategic thrusts – and if a program does not fall into one of these categories, it will not be funded or funding will be withdrawn. The original petition to increase the level of Divisional and Local Section funding was withdrawn and a substitute was offered for consideration. Because of the major negative impact on the finances of the Society, a Task Force involving members of the committees on Divisions, Local Sections, and Budget & Finance will be appointed to try to come up with an acceptable plan.

There was a great deal of controversy over this proposal, and other counter-proposals were also put forward to Councilors. This proposal would greatly increase the allotment given to Division and also raise the allotments for Local Sections a smaller amount. The downside is that it would be quite expensive to implement. The society already has a budget deficit, and the Board will not approve new expenses without a way of funding them. The proposal could potentially cause dues to rise an additional ten dollars. The Council voted in favor of a petition to enlarge Society committees (Budget and Finance, and Education) to a maximum of twenty members. *The Committee on Meetings and Expositions* - reported that the Boston meeting was attended by 17,121 persons. The committee also reported on some decisions taken for the future: the registration fee for 2003 meetings was set at $275. They also made the decision that from now on, all meeting rooms will be supplied with an overhead projector, an LCD projector for multimedia presentations, and a screen. They will no longer automatically supply 35 mm slide projectors unless by special request.

Councilor Reports -Pamela Kistler serves as a member of the Membership Affairs Committee and its Member Services subcommittee. Roger Egolf is an associate member of the Membership Affairs Committee and a member of its Virtual Services Committee.

Respectfully submitted,
Roger A. Egolf, Pamela D. Kistler
Lehigh Valley Section Councilors

The Email Octagon - A pdf file

Many members have taken advantage of the email version of the Octagon, available as a pdf download from our website. The advantages of the email version are early arrival and significant savings for the section. In addition, you can get the full color version of the Octagon. Email subscribers receive an email message when the Octagon is posted on the section's website, www.esu.edu\~lvacs. The email contains a link directly to the Octagon pdf file. There is no need to click through the website to find the issue. When a member chooses the link, the pdf file is automatically downloaded into a pdf file reader. A pdf file is a compressed file; this format allows large documents to be posted on the web as small files, while retaining the integrity of the original larger file. The most common pdf file reader is Adobe Acrobat Reader which is a free program that is provided as a "plug-in" to most web browsers. Many systems come with the Acrobat Reader installed. If your system doesn't have the reader installed, you will be prompted to download the software. Most often the address for download is provided in the prompt, but if not, Adobe is available free at http://www.adobe.com/products/acrobat/readstep2.html.

Editors Message:

Thank you to all of you who have emailed me expressing satisfaction with the new Octagon. I continue to encourage those of you with web access to take advantage of the email Octagon. It takes just a minute to download (even over my ancient modem!) and you can get LVACS information more quickly and in color! If you are unsure how to access a pdf file, there is an article in this month's Octagon with the details. If you would like to be an email subscriber, just send me an email at mjwilson@po-box.esu.edu with the subject line - Email Octagon - and I will add your name to the distribution list. Email addresses will remain strictly private. Please visit our website at www.esu.edu\lvacs. You will find expanded menus for section dinners as well as detailed directions to each campus with maps and often parking information. Convenient links to officers' email addresses are also available. As always if you have any information about Chemistry in the Valley please send it to me for incorporation in the newsletter or the website. I had so much member participation this month I ran out of room! The only way it can grow is with your help!

National Chemistry Week

October 20 26, 2002

For further information, contact:
ACS Office of Community Activities at 1-800-227-5558, ext. 6097.

Simply download and install the Acrobat reader following the instructions on the screen and you are ready to read any pdf file. The pdf Octagon looks exactly like the US postal version with one exception - the logo is in color! Also any links to information on the world wide web are active in a pdf file. So you can simply click and connect rather than typing in an address from the paper copy of the newsletter. If you haven't considered email subscription, give it a thought. If you would like to email subscribe, send me an email at mjwilson@po-box.esu.edu with the subject line Email Octagon. Of course all email addresses will be kept strictly private. And as always, if you have any questions just send a note or give me a call.

Elections for 2003 Officers of the Lehigh Valley Section of the American Chemical Society

Ballot

Please Choose one Candidate for each office. Please Cut the ballot from your newsletter or photocopy

Chair Elect

___Chip Nataro

___Steven Weiner

Secretary

___Tara Baney

Treasurer

___John Freeman

Councilor

___Pam Kistler

Alternate Councilor

___T. Michelle Jones-Wilson

Please follow the instructions for voting carefully.

1. After indicating your choices, seal your ballot in a plain envelope. Write the word ballot on the envelope. Sign the envelope.

2. Fold the envelope and insert in another envelope, affixed with appropriate postage, addressed to:

Tara Baney
LVACS Secretary
Merck Research Laboratories
Dept. 864
10 Sentry Parkway, BL1-4
Blue Bell, PA 19422

3. Ballots must be postmarked before October 31, 2002

This process will insure your anonymity and avoid duplicate ballots. Thank you for taking the time to vote!

Email subscribers - please print page 7 of the pdf file and follow the instructions above.

This Month in the History of Chemistry:[1]

October 4:*Sputnik I, the first artificial satellite, launched by Soviet Union, 1957.

October 5:*Chemical Society of Union College, a precursor of the American Chemical Society, founded in 1861.

October 6:*Humphry Davy, working at the Royal Institution, isolated potassium, 1807.

William Remington of Boston received US patent 82,877 for nickel electroplating, 1868.

October 10:*Ernest O. Lawrence invented cyclotron, 1930.

October 14:*Alfred Nobel receives his first of 355 patents, this a Swedish patent for preparing nitroglycerine, in 1863.

*Jacobus van't Hoff presented analogue of ideal gas law for the osmotic pressure of dilute solutions to Swedish Academy of Sciences, 1886

October 15:*First oral contraceptive, a steroid hormone norethindrone, developed by Carl Djerassi and co-workers at Syntex, 1951.

October 16:*William T. G. Morton demonstrated use of ether as an anesthetic at Massachusetts General Hospital, 1846.

October 18:*A ban of the artificial sweetener cyclamate is announced by the US Food and Drug Administration, 1969. (It has been resubmitted for FDA approval, but the application is in abeyance.)

October 20:*US administrators of Bilibad Prison in the Philippines change rice rations from white back to brown rice, 1902. The turnaround in the hitherto increasing incidence of beriberi provides a clue in the discovery of vitamins.

October 21:*John Dalton read a paper containing his first list of atomic weights to the Literary and Philosophical Society of Manchester, 1803.

*Alfred Nobel born 1833: invented dynamite; established Nobel Prizes and Nobel Foundation. Nobelium (No, element 102) is named after Nobel.

October 24:*Nylon stockings are first sold, 1939, in Wilmington, Delaware.

*Alonzo Dwight Phillips receives US patent 68 for friction matches (whose heads contained chalk, phosphorus, glue, and brimstone), 1836.

October 26:*Trust agreement creating the Petroleum Research Fund signed 1944.

October 27:*Gustav Kirchhoff announces invention of spectroscope, 1859.

*Antoine Lavoisier and wife Marie Paulze survive a munitions explosion, 1788.

[1]Thanks to Carmen Giunta, for his Classic Chemistry website http://webserver.lemoyne.edu/faculty/giunta/

News: The Society for Applied Spectroscopy

Some LVACS members may also be interested in the meetings of the Reading Section of the Society for Applied Spectroscopy. Meetings are once a month between September and May in the Reading area. Attached is our planned schedule for the 2002 - 2003 meeting season. Meetings are usually held at the Carpenter Technology R&D Center. There is a social hour (5:30 - 6:30 pm), hot buffet dinner (6:30 - 7:30 pm, cost: $15.00), a brief business meeting, and the technical speaker (8:00 - 9:00 pm). For information and/or reservations interested parties should contact Tom Dulski:

Carpenter Technology Corp. R&D Center
P.O. Box 14662 Reading, PA 19612 - 4662
Phone: (610) 208 - 2691 FAX: (610) 208 - 3256
E-mail: Tdulski@cartech.com
no later than 48 hours before the scheduled date.

2002 – 2003 Meetings

September 19, 2002 – "Measurement Uncertainty in Analytical Chemistry Laboratories – Pain or Panacea?" Dean A. Flinchbaugh (Flinchbaugh Consulting)

October 24, 2002 – "Current and Advanced AES Capabilities" Brad Cooley (Thermo ARL)

November 21, 2002 – "Supercritical Fluids: the Wave of the Future?" Dr. James Sheirer (Albright College)

December 12, 2002 -- "Analytical Pyrolysis" Charles Zawodny (CDS Analytical)

January 23, 2003 – "High Performance X-ray Fluorescence Spectrometry: Quantitative Procedures and SRM® Applications" Dr. John R. Sieber (NIST)

February 20, 2003 – To Be Announced

March 20, 2003 – To Be Announced

April 17, 2003 – SAS National Tour Speaker

May 15, 2003 – "ICP-AES: Classical Optics with Array Detection and Direct Solid Sampling" Sergei Leikin (Spectro Analytical Instruments)

SciFinder 2002 Offfers New Enterprise-wide Information Solutions

Scientists in a variety of research fields will find new capabilities matching their interests in SciFinder 2002, the newest release of the award-winning desktop research tool from Chemical Abstracts Service (CAS). Among the most important additions are analysis features for stereochemistry, new links to synthetic chemistry information and reactions and current-awareness features for bioscience information. SciFinder 2002 is scheduled to become available this fall with an extensive array of new and improved features, including new analysis tools for stereo chemistry, experimental properties for over 825,000 substances, more reactions from 1907-1985 documents, new Panorama and new Keep Me Posted and Get Reference features for sequences. More information about SciFinder can be found at http://www.cas. org/SCIFINDER/scicover2.html.

A Nobel Prize in Chemistry:

In 1961 The Nobel prize for Chemistry was awarded to Dr. Melvin Calvin for his work delineating the role of carbon in photosynthesis. Dr. Calvin was born in St. Paul, Minnesota in 1911 of Russian emigrant parents. He received the B.S. degree in chemistry in 1931 at the Michigan College of Mining and Technology, and the Ph.D. degree in chemistry from the University of Minnesota in 1935. He spent the academic years 1935-37 at the University of Manchester, England. He began his academic career at the University of California at Berkeley in 1937 and served on the faculty until his death in 1997.

The following is excerpted from the introduction, by Professor K. Myrbaumlck, of Dr. Calvin's Nobel Prize address. "Photosynthesis is the absolute prerequisite for all life on earth and the most fundamental of all biochemical reactions. For more than a century, however, progress in the understanding of the chemistry of photosynthesis was very slow, partly for want of suitable experimental methods. . . Success was achieved as a result of sharp-witted, skillful and persistent work, to some degree facilitated by the availability of certain model experimental methods that allow investigations which, in older times were simply impossible. Two such methods may be mentioned: the method of the isotopic labeling of molecules, introduced by de Hevesy, and the chromatographic methods, developed by Martin and Synge. By an ingenious combination of these and many other methods, Calvin succeeded in tracking the path of the carbon atom from carbon dioxide, taken up by the plant, to the finished assimilation products. . . A question that had occupied scientists for more than a century, was "what is the primary product of the assimilation; what first happens to the carbon dioxide taken up by the plant?" Calvin demonstrated that the primary reaction is not, as had been assumed previously, a reduction of carbon dioxide as such, but a fixation of carbon dioxide to a substance in the carbon dioxide acceptor, occurring in the plant. Calvin was able to show that the product formed in this fixation reaction is an organic compound known as phosphoglyceric acid. . . Calvin's identification of the primary assimilation product with phosphoglyceric acid led to the very important conclusion that there is an intimate connection between photosynthesis and carbohydrate metabolism as a whole.

Calvin's subsequent investigations mapped out the path between the primary product and the end products of assimilation, the various carbohydrates. What had formerly been assumed to be a reduction of carbon dioxide was shown to be a reduction of phosphoglyceric acid. For a reduction of phosphoglyceric acid to the carbohydrate level, the plant has to supply both a reducing agent and a so-called energy-rich phosphate. It is for the production of these co-factors that plants utilize light energy. This means that light energy is not directly involved in the reactions of assimilation; light energy is used for regeneration of co-factors which are consumed in the assimilation reactions."

Dr. Llyod Robeson Receives Awards

(Contributed by Robert Coraor)

Dr. Robeson Awarded the 2002 ACS Polymer Division Industrial Sponsors Industrial Scientist Award, and Winner of the 2003 ACS Award in Applied Polymer Science

Air Products principal research associate, Dr. Lloyd Robeson, was recently awarded the 2002 POLY Industrial Sponsors Award. The POLY Industrial Sponsors Award is given to recognize outstanding industrial innovation and creativity in the application of Polymer Science conducted by individual scientists or research teams. The award symposium and presentation took place at the ACS (American Chemical Society) National Meeting from 18-22 August.

At the same meeting, Dr. Robeson was also announced as winner of the national 2003 ACS Award in Applied Polymer Science. The objective of this award is to recognize and encourage outstanding achievements in the science or technology of plastics, coatings, polymer composites, adhesives, and related fields. The award presentation will take place at the Awards Ceremony, 25 March 2003, in conjunction with the 225th ACS National Meeting in New Orleans, Louisiana.

Dr. Robeson is a major industrial contributor to the field of polymer blends in the United States. Since joining Air Products and Chemicals in 1986, he has further expanded his scientific contributions into the areas of membrane separations, surface modification, and new polymers for electronic applications. Dr. Robeson's accomplishments include 91 patents, more than 90 publications, and co-authorship of a book. In addition to his published contributions, Dr. Robeson has also contributed to his areas of expertise by serving on numerous technology councils and editorial boards. In 2001, Dr. Robeson was elected to the National Academy of Engineering for his significant scientific and technological contributions in polymer blends and engineering polymers.

Question of the month

Name the chemist (born the son of a blacksmith, began his career as a bookbinder's apprentice) who refused the presidency of both the Royal Society and the Royal Institution?

Come to the October Meeting for the Answer!