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# THE OCTAGON

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Volume 87, No. 6, September 2004

Lehigh Valley Section of the American Chemical Society

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### *773<sup>rd</sup> LVACS Meeting:*

#### *LVACS and Philadelphia ACS Joint Meeting*

**Date:** Thursday, September 30, 2004

**Location:** Merck & Co., Inc. West Point, PA,  
7627 Grape Vine Drive, New Tripoli, PA

**Social hour:** 5:00

**Dinner:** 6:00 Oasis Dining Area in Building 53 Cafeteria

**Menu:** Buffet style – stations are as follows:

Hors d'oeuvre station: Fruit & Cheese – Fresh sliced fruit and gourmet domestic and imported cheese displayed with an assortment of crackers and dipping sauces

**Dinner stations:** Caesar Salad Bar – Crisp Romaine lettuce presented with Parmesan cheese, garlic croutons and zesty Caesar dressing Pasta Bar – A variety of pastas served with Parmesan cream or marinara sauce. Fresh steamed seasonal vegetables and your choice of shrimp or chicken

Coffee, Water, & Sweets – Freshly brewed coffee served with a variety of miniature pastries. No alcoholic beverages allowed on site.

**Cost:** \$20.00 Members; \$10.00 students and retirees

Should those eligible for a discount pay full price, the difference will be donated to the LVACS scholarship fund.

**Contact:** Libby Harper, Philadelphia Section ACS office, (215) 382-1589; [PhilaACS@aol.com](mailto:PhilaACS@aol.com) by 22-Sept-2004.

**Meeting and Talk:** Building 37 Auditorium (no food or beverage allowed in auditorium)

**Speaker:** Dr. Robert P. Bates, University of Florida

**Talk:** What You Always Wanted To Know about Chemicals in Foods but Were Afraid To Eat

**Abstract:** Foods are complex mixtures of chemicals, but with difference. There is a very important legal distinction between naturally occurring food constituents and other chemicals that end up in food by design or default. Conversely, the much more important matter, chemical

compatibility, dictated by human physiology and nutritional biochemistry and vital to well-being, health, performance, and survival -- is often ignored or misinterpreted by vocal yet chemically illiterate groups. Despite considerable progress in understanding the science and technology of foods, culture and perception have a far greater influence upon food acceptance and regulation than the reality of nutrition and toxicology. Paradoxically, as science uncovers more about the complex interactions of foods with the human body, the less confident and more confused the public becomes regarding the safety, value, and nutritional efficacy of the U.S. food supply. Food additives and now phytochemicals are examples of food consumption concerns that should also stress total diet, lifestyle, and common sense. This presentation will deal with both essential and trivial food constituents and emphasize some of the positive and negative aspects of each. Despite our imperfect and changing knowledge, a better appreciation of the chemistry and metabolism of foods has dramatic potential for improving health and well-being, while ignorance is sure to have the opposite effect.

**Directions:** From The PA Turnpike (East or West):

Take PA Turnpike to Exit 339 (Fort Washington) to Route 309 North. Exit Route 309 at Norristown Road/Springhouse. Turn left at the end of the ramp onto Norristown Road. This becomes Sumneytown Pike. Cross over Route 202. (The William Penn Inn is on this corner.) Continue through Gwynned and North Wales (Sumneytown Pike is called Main Street in North Wales). Go under a railroad overpass. At the next traffic light, make left into the Merck facility, Building 53B Entrance, Merck Gate 1. Proceed towards Visitor's Lot, enter at Main Entrance, and proceed to Security Personnel.

From the PA Turnpike Northeast Extension (Route 476):

Take the Northeast Extension of the PA Turnpike to Exit 31 (Lansdale). Turn left at end of ramp onto Sumneytown Pike. Travel east on Sumneytown Pike through 5 traffic lights. At

the sixth traffic light, make a right into the Merck facility, Building 53B Entrance, Merck Gate 1. Proceed towards Visitor's Lot, enter at Main Entrance, and proceed to Security Personnel.

From Route 202:

Take Route 202 to Sumneytown Pike West. (William Penn Inn is at the corner of this intersection) Travel west on Sumneytown Pike through 4 traffic lights. (Sumneytown Pike is called Main Street in North Wales.) Go under railroad overpass. At the next traffic light, make a left into the Merck facility, Building 53B Entrance, Merck Gate 1. Proceed towards Visitor's Lot, enter at Main Entrance, and proceed to Security Personnel.

From New York - New Jersey:

Travel south on the New Jersey Turnpike to Exit 6, Pennsylvania Turnpike Connection.

Travel west on Pennsylvania Turnpike Connection to Exit 339, Route 309, Ambler. Travel north on Route 309 to the exit for Norristown Road / Springhouse. At bottom of ramp, turn left onto Norristown Road. This turns into Sumneytown Pike. Cross over Route 202. (The William Penn Inn is on this corner.) Continue through Gwynned and North Wales (Sumneytown Pike is called Main Street in North Wales). Go under a railroad overpass. At the next traffic light, make left into the Merck facility, Building 53B Entrance, Merck Gate 1. Proceed towards Visitor's Lot, enter at Main Entrance, and proceed to Security Personnel.

**774<sup>th</sup> LVACS Meeting:**  
**Albright College**

**Date: Wednesday, October 20, 2004**

**Time:** 5:30-social hour

**Dinner:** 6:30-dinner

**Menu:** Assorted Bread Sticks w/ Butter, Pear Salad with Spring Greens, Chicken Marsala\* OR Flounder with Tomato Fennel Sauce\* Wild Rice with Pine Nuts, Stir Fry Vegetables, Chocolate/Raspberry Mousse Parfait, \*Please specify a choice of entrée

**Cost:** \$20.00

Meeting and Talk: 8:00

**Location:** Albright College, Campus Center South Lounge (social hour and dinner) and Merner-Pfeiffer Hall of Science Room 217 (speaker).

**Directions:** Available at

**<http://www.albright.edu/about/directions.html>**

**Contact:** Nancy Kerper by 4:00 P.M. Wednesday October 13, 2004 (610) 921-7720 or **[nkerper@alb.edu](mailto:nkerper@alb.edu)** please specify a choice of entrée.

**Speaker:** Curt Hare Ph.D., Professor Emeritus, University

of Miami; Research Professor, Franklin and Marshall College.

**Title:** Organics in Your Water

**Abstract:** We are probably all aware of the environmental problems associated with pesticides and chlorinated organic molecules. These anthropogenic molecules are now in a general decline but remain on the EPA's priority pollutant list. The interest of environmental groups, particularly the Greens of Europe, is now focused on pharmaceuticals and personal care products (PPCP's). Little attention has been paid until now about the environmental fate of the caffeine in your cup of coffee or the ibuprofen for your headache let alone the female birth control pills, perfumes, antibiotics and other chemical products. The molecules that we wash down the sink and flush down the toilet are now appearing in our streams and may have a future impact on our water supplies.

**Biography:** Curt Hare earned his Bachelor of Science degree in chemistry at the Pennsylvania State University and his Doctor of Philosophy at Michigan State University. Between tours of academics he served in Korea as a lieutenant in the Signal Corps of the 24<sup>th</sup> Infantry Division. Upon completion of his doctorate Dr. Hare accepted a National Science Foundation post-doctoral fellowship at the Institute for Physical Chemistry, University of Copenhagen. After this research in Denmark, he accepted an assistant professorship at the State University of New York, Buffalo. Quickly trading snow for sand, Dr. Hare moved to the University of Miami where he was associate chair of the department for several years. He is currently an *emeritus* professor. For ten years, Dr. Hare was the vice president of TransChemical Corporation, and he was also a past president of the Manatee Sulfur Company. Curt has received numerous awards including Professor of the Year (several times), Provost Excellence in Teaching Award, and the Freshman Teaching Award.

Dr. Hare is an active member of the American Chemical Society, serving as section chair and local chair. He has been active in research and is author or coauthor of 23 peer reviewed publications and two book chapters on spectroscopy and its applications to chemistry. His research and industrial interests include water pollution, air pollution, cancer chemotherapeutics, mineral resources, chemical marketing, chemical industry economics, industrial chemical training, and recycling of waste plastic by conversion to fuel. He has been energetic in the area of chemical education including: 1) an interdisciplinary science program (Project SUCCEED) designed to enhance the abilities of middle school teachers and students funded by the Department of Education and the National Science Foundation and 2) a cooperative program for minority students between the University of Miami and Miami-Dade Community College sponsored by the Howard Hughes Medical Institute and the National Institutes of Health.

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## *May Meeting Minutes:*

DeSales University and the LVACS hosted “High School Teachers’ Night” on Friday, the 14<sup>th</sup> of May, 2004. Acting Chair and current Chair-Elect Tara Baney called the meeting to order at approximately 7:45 PM. This was the 772<sup>nd</sup> meeting of the LVACS. Tara introduced and gave the 50-year membership award from the ACS. Dr. P.L. Thibaut Brian expressed great satisfaction with his career choice while Dr. James Edward Strum dedicated his award to his brother who encouraged him to pursue a life in chemistry. Tara then summarized the meeting of the Executive Committee held earlier that evening. The highlights included the proposed scheduling of a group picnic in August, the joint meeting with the Philadelphia section on September 30<sup>th</sup> to be held at the Merck & Co., Inc., West Point site, and the agreement to try again to get the Women’s Committee functioning. Next the winners of the Foundation in Chemistry and Organic Chemistry were announced by Paul Bouis. Cassandra Mifkovich received the former award, the second year in a row that Jeanne Knepper and Palmerton Area High School had nurtured the winner. Laura \_ received the latter award, the second year in a row that a Lafayette College undergraduate has won.

Candidates to run for the various offices were sought. A Chair-Elect from academia and a replacement for Treasurer John Freeman, who is leaving the area, are needed. The Question of the Month turned out to have an unexpected answer as the announcement of the discovery of Elements 95 & 96 occurred at a kid’s party, prior to the scheduled ACS meeting. Roger Berg, head of the Chemistry Department at DeSales, thanked the high school teachers in attendance for their efforts in preparing their students for the rigors of college chemistry. Roger emphasized the fact that their hard work made the job of college teaches a lot easier. Roger then introduced the speaker for the evening, Dr. Katherine Ramsland. The title of Dr. Ramsland’s talk was “Forensics, Chemistry, and Crime.” Main premise – how science and the court system worked for both their betterment; science has made its way into the courts on a regular basis. An example on Court TV showed chemists involved in a case of ethylene glycol poisoning, determining where the source originated (from antifreeze). Today, such information is on television all day and also in the news.

Origins of crime fighting through forensics started with toxicology. Death by poisoning was popular in the early days. According to the ACS, there are approximately 21,000 registered chemicals. We can only test for approximately 3000 of them for forensic purposes. Began approximately 250 years ago where arsenic was used; called the “inheritance powder.” This was first recorded (first murder trial) with Mary Blandy, who attempted to poison her father with arsenic.

Vidocq’s Brigade de la Sorete had been in custody for stealing a loaf of bread among other offenses. Over time, he essentially became the first undercover agent, working with law enforcement. During this time, the following types of techniques were developed: meticulous records, regular reports, handwriting comparisons, indelible ink, disguises, plaster casts, and firearm evaluations. Such techniques were brought into the trial process; especially those cases considered “sensational” for its time. Joseph Bonaventure is credited with the title of “Father of Toxicology.” He demonstrated how arsenic spread throughout the body. James J Marsh went further, in 1836, by using  $H_2SO_4/Zn$  to extract arsenic from a substance. This is called the Marsh test, and produces the arsenic mirror used in many criminal trials. General premise of these discoveries is the more sense it made to the common person, the more it could be brought into the courtroom as evidence and supporting information. An example of reproducibility of the Marsh test is the trail of Marie Lafarge, who poisoned her husband with rat poison. When the test was conducted on the substance, it did not work. The test itself was not faulty; the person who conducted the test did not do so properly. The technique for the Marsh test is delicate, and once a seasoned chemist repeated the test, the mirror result indicated the existence of the poison. William Wilcox developed quantitative methods to determine how much arsenic was present to be fatal.

Edmund Locard essentially started the first “crime lab” using microscopes, photography, and quantifying the results. Such techniques to add to de la Sorete includes testing for counterfeit coins, looking at the clothing of the victims, extracting any metals within, and performing wet tests. “Everything leaves a trace.” Usually, the perpetrator takes something from the victim or the scene as well.

The Black Widow of London killed 12 people over two decades. It was discovered that high levels of arsenic were found in the bodies of those exhumed. This turned into a significant event as the defense of such trials began to “wise up” and question the nature and exactness of the science. The techniques used for this trial were attacked, and this led scientists to further develop and enhance methods used.

In the 1850’s, vegetable alkaloids became more popular for poisonings, in addition to caffeine, strychnine, opium, and nicotine. Jean Servain Stats, a student at the time, was able to extract such poisons from victims using solvents such as ether. In addition, a homeopathic physician was convicted of poisoning his wife (for the insurance money) using digitalis, commonly extracted from frogs.

Overall, many court cases advanced the science of crime-fighting. Even though there were some false positives, the cases where the perpetrator seemed to “get away” with a murder actually helped the science to move forward. Annie Southerland mysteriously died in 1895. Toxicologists could not determine the cause of death; later determined to be morphine poisoning via eye drops. The tests that existed at the time were not specific enough, thus inspiring scientists to improve the methods of analysis. This brought to us analysis through the GC-MS of modern times.

Although the use of forensics and the tremendous advances in chemistry have allowed us to solve cold cases, the reality is juries like stories. A build up with a conclusion is what juries listen to; unfortunately, much of the science is not comprehended or retained by most jurors. Scientists will not cease advances; as long as defense attorneys challenge science, advances will be made to counteract those challenges.

At the end of her talk, Dr. Ramsland answered many questions, and was presented with a gift to express the section's appreciation. The meeting was adjourned at approximately 9:30 PM.

Respectfully Submitted,  
Paul A. Bouis  
Past Chair, LVACS 08-August-2004

### ***2004-2005 Meeting Schedule***

**September 30** - Merck & Co, Inc.,  
New Tripoli, PA (*joint meeting with Phila section*)

**October 20**- Albright College

**November**- Penn State - Lehigh Valley Campus

**January** - TBA

**February** - Cedar Crest College

**March** - East Stroudsburg University -  
(*Spouses Night*)

**April** - Moravian University -  
(*Student Poster Session*)

**May** - DeSales University -

Editor and Associate Editors of *The Octagon*, to obtain suitable newspaper publicity for the meetings and other activities of the Section.

- The Historical Committee, to seek and compile facts concerning the history of the Section, institutions in the Lehigh Valley and prominent chemists who have been, or who are members of this Section. It should follow developments of a chemical nature within the territory of this Section, and cooperate with historical groups or other scientific and engineering societies.
- The Membership Committee, to maintain and increase the membership of the Section and to promote fellowship among the members and prospective members.
- The Nominating Committee, consisting of five members representing the various areas and interests in the Section, to perform the duties described in the Bylaws and to prepare for presentation at the proper time suggestions for candidates for national office and to propose nominees for awards.
- The Professional Relations Committee, to represent the general membership in professional matters, to increase membership awareness of the power of opinion to influence Society policies on professional matters, to increase communication between members of the Society and the leadership of the Society, and to initiate member action programs in professional relations.

If interested in knowing how you can help, contact any member of the Executive Committee. We are looking forward to seeing you!

### ***Opportunities!!!!***

We have numerous volunteer opportunities available for the following committees:

- The Program Committee, to provide the principal speaker at the regular meetings of the Section. The Chair-Elect shall be ex-officio chair of this committee.
- The Entertainment Committee, to arrange for the place of meeting, the dinner, and the "Over the Coffee Cups" speaker, or other entertainment at the dinner ☺☺
- The Education Committee, to stimulate interest in the study of Chemistry in the secondary schools and colleges of this Section and to cooperate with these institutions in chemical education.
- The Publicity Committee, which shall consist of the

## **Welcome Fellow LVACS Members!**

Welcome to a new year of the Lehigh Valley Section of the American Chemical Society. We, the Executive Committee (EC), are here to remind you that this is YOUR section. As I've written to new members, the LV-ACS is rich in heritage and culture. We currently have over one-thousand paying members, with fascinating, interesting, dramatic, and humorous stories to tell. We want to continue the tradition of providing valuable scientific communication among members. This will translate to greater public awareness, and we are asking for your contribution in this effort.

Not only do we want to hear from you, we want to see you! Join us at meetings; communicate with us via email, snail mail, telephone, even carrier pigeon if it works in a pinch!! Everyone is busy, I certainly understand, as I myself not only have a full-time job at Merck, but I'm also beginning the rigors of school this fall for my PhD in biochemistry (part-time at University of Delaware). Fit in family (Charlie and the cats), fun (shopping), and relaxation (watching the Mets lose), what is left you may ask? Well, we are not asking for 40+-hours per week, nor are we asking for mandatory attendance in class. We are searching for any amount of time you can give. Get creative – did you just read an interesting article in J.Am.Chem.Soc. that others might find useful? Write a paragraph; no need to write a book review (unless you want to). Have a question? Ask your colleagues in your section – place it in the Octagon or provide it to an EC member to ask at our next meeting. Better yet, show up at our next meeting, introduce yourself, and ask away! Amazing what you will discover.....want to start up a committee? Place an “ad” on our website, use the Octagon. If you only have one meeting this year, it's better than never trying at all. Place a wish list of tasks/action items for others to choose from; some can be accomplished remotely, others face to face. We can accommodate a plethora of schedules and situations to fit any need. What do you want from this section? I wish I could read minds (well.....some minds anyway), but alas I cannot. It's up to you to tell us. So, what's stopping you?

Join us August 27th for our Inaugural Welcome Back Picnic at gorgeous Louise Moore Park. Then, plan to listen about chemistry and food at our September 30th meeting at Merck & Co., Inc., West Point. This is a great opportunity to meet our Philadelphia Section colleagues at this joint meeting. In October, visit us at Albright College where Dr. Curt Hare will finally have his LVACS debut (hope the snow holds off this time!). In November, we will

learn about our Section's history. Surely a talk to attend!

How can you NOT get enthused about YOUR section????I look forward to seeing you, meeting you, and interacting with you.

Cheers,

Tara S. Baney, Chair-Elect

Email: [tara\\_baney@merck.com](mailto:tara_baney@merck.com)

Phone: 215-652-7486

### **LVACS Officers - 2004:**

**Chair:** Steve Weiner

Chemistry Department, Muhlenberg College  
2400 Chew Street, Allentown, PA 18104

[sweiner@muhlb.org](mailto:sweiner@muhlb.org) 484-664-3665

**Chair Elect:** Tara Baney

Merck & Co., Inc. West Point, PA 19486

[tara\\_baney@merck.com](mailto:tara_baney@merck.com) 215-652-7486

**Immediate Past Chair:** Paul Bouis

Mallinckrodt Baker Inc., Phillipsburg, NJ 08865

[paul.bouis@tycohealthcare.com](mailto:paul.bouis@tycohealthcare.com) 908-859-9443

**Secretary:** David C. Skee

Mallinckrodt Baker Inc., Phillipsburg, NJ 08865

[david.skee@tycohealthcare.com](mailto:david.skee@tycohealthcare.com)

**Treasurer:** John Freeman

522 Raub St., Easton PA 18042

[jcf2@rcn.com](mailto:jcf2@rcn.com) 610-923-3587

**Councilor:** Carol Baker Libby

Moravian College, Allentown, PA 18018

[cblibby@cs.moravian.edu](mailto:cblibby@cs.moravian.edu) 610-861-1629

Councilor: Pamela D. Kistler

Cedar Crest College, Allentown, PA 18104

[pdkistle@cedarcrest.edu](mailto:pdkistle@cedarcrest.edu)

610-437-4471 x 3507

**Alternate-Councilor:** Roger Egolf

Penn State LV Campus, Allentown, PA 18051

[rae4@psu.edu](mailto:rae4@psu.edu) 610-285-5110

**Alternate-Councilor**

**(Octagon Editor & Webmaster):**

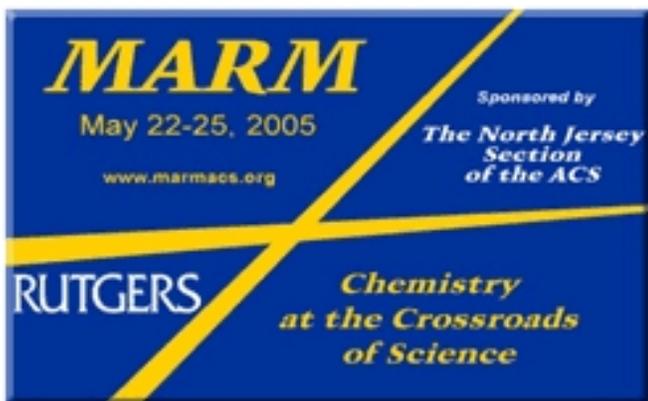
T-Michelle Jones-Wilson

East Stroudsburg University

East Stroudsburg, PA 18301

### ***Desales University Forensic Forum***

The DeSales Forensic Forum is presenting an event open to the community and featuring renowned forensic scientist, Henry Lee. He will speak about some of his most interesting cases at 7:00 p.m. in Billera Hall, the Alumni Courts on October 6, 2004. Check the DeSales Web site for updates or possible changes. Contact information: Dr. Katherine Ramsland, 610-282-1100, X 1445.



### ***Middle Atlantic Regional Meeting (MARM 2005) - May 22-25***

Rutgers University New Brunswick, N. J

Advanced Notice - **Call for Papers and Registration November 15**

Chemistry at the Cross Roads Science our theme for the Middle Atlantic Regional Meeting in 05 will explore the chemist's role in pushing back the frontiers of science. Rutgers University, neighboring sections, society divisions and local allied societies are working as a team with the North Jersey section of the ACS to plan the meeting.

We are inviting Chemists from Maine to Georgia and beyond to attend this Regional Meeting which we hope will be the best regional meeting ever. You are invited to attend this meeting as a presenter and/or an attendee. We have something in this meeting for everyone interested in the chemical sciences from the general public, high school students, chemists and other scientists and retirees

#### **Program Highlights**

\* SUNDAY - Education is the theme education for our youth, teachers and the public.

\* MONDAY - Bench To Pilot Plant  
Biomarkers: Quantification,

PK/PD Correlation and Bioanalytical Issues

Kinases

Freshman Chemistry for Engineering Students

Solid State and Materials Chemistry

GPCRs/Virtual Screening

Marine Environment Chemistry

Pharma Profiling

About the General Chemistry Laboratory

\* TUESDAY - Visions in Chemistry (sponsored by Aventis)

Environmental/Green Chemistry

Ion Channels

Novel Instrumentation and Applications of Mass Spectrometry in ADME Studies

Undergraduate Research

Research Funding Opportunities for Primarily Undergraduate Institutions

Proteases

Applications of LC-MS in Drug Discovery / Development

\* WEDNESDAY - Gov- Affairs Workshop

Celebrating Chemistry

Environmental/Green

Forensic Chemistry Education

Advances in Organic Synthesis

Functional Proteomics and Cell Signaling

Mini-Symposia keyed to local industries interests will be packed into the PM so that our industrial beneficiaries won't have to miss a full day of work. The NJACS Roving Feast, vendor exhibits and poster sessions will provide networking opportunities to share with your peers, while discovering the latest vendor innovations.

Students will get an opportunity to share their research in talks and posters and also learn about the latest in their chosen fields of study from world class scientists, right in their back yard. Of course, the students main interest may be jobs and the ACS Career Services employment center will connect them with many opportunities to meet employers and learn how to sharpen their job searching skills.

Our Committees for Women Chemists, Younger Chemists, Safety and Minority Affairs are planning programs. Then we have the favorites from previous MARM meetings on Industrial Innovations, Chemagination, Delaware Valley Chromatography Forum Student Awards

Please visit our website <http://www.marmacs.org/> for more information. Registration and call for papers both will open on NOVEMBER 15 2004.

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## ***Candidates for the Fall 2004 ACS National Election***

On behalf of the Committee on Nominations and Elections, I am informing you of the slate of candidates that will appear on the fall 2004 ballot. This slate includes several additional petition candidates whose petitions were validated recently.

### **President-Elect, 2005**

E. Ann Nalley, Cameron University, Lawton, Oklahoma  
F. Sherwood Rowland, University of California, Irvine, California  
Isiah M. Warner, Louisiana State University, Baton Rouge, Louisiana

### **Director-at-Large, 2005-2007**

David F. Eaton, Light Insights, LLC, Wilmington, Delaware  
Judith C. Giordan, Visions In Education, Inc., Pleasanton, California  
Howard M. Peters, Peters, Verny, Jones & Schmitt, LLP, Palo Alto, California  
David N. Rahni, Pace University, Pleasantville, New York

### **Director, District II, 2005-2007**

Thomas H. Lane, Dow Corning Corporation, Midland, Michigan  
Diane G. Schmidt, Procter & Gamble Company, Cincinnati, Ohio

### **Director, District IV, 2005-2007**

Eric C. Bigham, GlaxoSmithKline, Chapel Hill, North Carolina  
Paul R. Jones, University of North Texas, Denton, Texas  
Robert L. Lichter, Merrimack Consultants, LLC, Atlanta, Georgia  
John L. Massingill, Jr., Texas State University, San Marcos, Texas

Flint H. Lewis, Staff Liaison to the Committee on Nominations and Elections

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## ***This Month in Chemical History***

*Harold Goldwhite, California State University, Los Angeles, [hgoldwh@calstatela.edu](mailto:hgoldwh@calstatela.edu)*

*Prepared for SCALACS, the Journal of the Southern California, Orange County, and San Geronio Sections of the American Chemical Society*

As my regular readers will know I find that old books with scientific content give a special perspective on the history of science. I recently acquired some issues of a small publication entitled "The Year Book of Facts"; that's the cover title. The full title, in good Victorian fashion, is "The Year-Book of Facts in Science and Art exhibiting the most important discoveries and improvements of the past year..." (Yes, there is even more!). The volume I have before me is for the year 1844 and was edited by "The Editor of 'The Arcana of Science'" (a publication I have yet to locate). The volume is illustrated with engravings and was published by David Bogue of Fleet Street in London. The two engravings that comprise the frontispiece and the vignette on the title page are both of some interest to chemists. The former is a portrait of Dr. Justus Liebig "the celebrated Professor of Chemistry in the University of Giessen..." The latter shows "Mr. Babbage's Calculating or Difference Engine, lately deposited in George the Third's Museum, King's College, London." Mr. Babbage's engine is generally acknowledged as the ancestor of modern digital computers, and you can see portions of it and its successor calculators in the Science Museum in South Kensington, London

Let me turn to the section on Chemical Science that makes up 31 pages of this roughly 300-page book. Dr. Andrews, who I believe is the same Andrews whose experiments on critical phenomena in carbon dioxide are celebrated (at least among historians of chemistry), communicated to the British Association [for the Advancement of Science] a new general principle of thermo chemistry. "When one base displaces another from any of its neutral combinations, the heat evolved or abstracted is always the same when the base is the same..." As I interpret this rather terse and ambiguous statement, I believe it illustrates an early example of Hess's Law, or the first law of thermodynamics.

Mr. R. Hunt reported at the same British Association meeting a survey of the effect of light on a variety of chemical compounds. This was the era of the beginnings of photography. The article refers to "The experiments of Ritter, and others, down to the time of Niepce and Daguerre... the researches of Wollaston, of Davy, of Fox Talbot and above all ... Sir John Herschel." Mr. Hunt added platinum to the list of materials including compounds of silver, gold, mercury, and iron that were already established as photosensitive substances, and also exhibited photographs made with salts of manganese, tin, antimony, lead, cobalt, and arsenic. (I may add that, to my knowledge, of all these materials only platinum became well established as an

alternative to silver in black and white photography, though gold prints were also occasionally employed.)

Dr. Liebig read to the Chemical Society a paper "On the Formation of Fat in the Animal Body." In addition to his fundamental and wide-ranging work in organic and inorganic chemistry Liebig also contributed significantly to agricultural chemistry and nutritional chemistry. Liebig showed by experiments on three young pigs on a farm at Giessen that they added fat to their body weight in great excess over the fat they consumed and that therefore the fat was in some way being produced from starch, since potatoes were their main food.

The interest of the Editor and, presumably, the readers of the "Year-Book" in food chemistry and agricultural chemistry is evident in the large numbers of articles devoted to these subjects. Titles include "Composition of Milk"; "The Lacto scope" (an instrument for measuring the proportion of cream in milk); "Absorption of Nutrition in Food"; "Effects of Sugar in Diet" (still a topic of great interest!); "Nutritive Values of Bread and Flour" etc.

An article that caught the eye of this avid reader of mystery stories is titled "Riench's Test for Arsenic" and is based on a paper by Dr. D. P. Gerrard of New York published in Silliman's "American Journal [of Science]". Gerrard reports failures of Marsh's test for arsenic, widely used in forensic chemistry, at low arsenic concentrations. Riench's test is more sensitive but gives too many false positives. Gerrard demonstrates that subliming the arsenic from the precipitate in Riench's test increases the value and certainty of the test.

Finally, for this month's article, a reassuring (?) note on "Death from Prussic Acid", better known today as hydrogen cyanide. A German paper asserts that death from prussic acid is only apparent (!); "life is immediately restored by pouring acetate of potash and common salt, dissolved in water, on the head and spine." I emphatically warn my readers against trying this remedy.

### ***Question of the Month:***

What famous chemist began his early career making torpedoes that were sold in his father's paints and common chemicals store?

*Come to the September Meeting for the Answer*

### ***Silver Circle Website Launched***

The ACS Silver Circle website was created to provide experienced ACS members and retirees with information on numerous outreach opportunities, ACS news, and links to valuable Web resources. Please visit the page at <http://chemistry.org/silvercircle.html>.

Also underway are suggestions for forming a Silver Circle committee in your ACS local section. If you have ideas to share, please contact: Marisa Burgener  
Senior Chemists Staff Contact [m\\_burgener@acs.org](mailto:m_burgener@acs.org)  
800-227-5558 ext. 4458

### ***National Chemistry Week: Health & Wellness!***



Each year the American Chemical Society's (ACS) National Chemistry Week (NCW) campaign reaches millions of people with positive messages about the contributions of chemistry to their daily lives. It is the one time during the year that chemists, regardless of background,

unite with the common goal of spreading the word that chemistry is good for our economy, our health, and our well-being. The date for the 2004 celebration will be October 17 – 23 with the theme, "Health & Wellness!"

#### **It is not too late for you to join the celebration!**

Some ways that you can contribute to the NCW campaign are: performing chemical demonstrations at a neighborhood school; conducting hands-on activities with children at museums, malls, or libraries; or writing articles or letters to the editor of your local paper.

### ***Bill Carroll Wants Your Ideas!***

2005 ACS President Bill Carroll is compiling information related to two of his presidential agenda items for sharing with members and others next year.

1. Service opportunities. If you have run a program that is a community service through which you were able to reach out with the positive message about chemistry while doing something to benefit the community (painting, clean-up, etc.), Bill would like to hear from you. Please send the details to him at [carroll@acs.org](mailto:carroll@acs.org)

2. Second career high school teachers. Bill believes strongly in the benefits of having trained chemists and chemical engineers entering the teaching profession. If you are one of these teachers and would like to share your experiences, he would be pleased to hear from you. Just drop a note to [carroll@acs.org](mailto:carroll@acs.org)

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### **Career Services at ACS Regional Meetings**

Visit the Career Resource Center at these ACS regional meetings for an array of professional development programs and services. Features may include an employment clearinghouse (RECH), career management workshops and one-on-one resume critiques.

Southwest Regional Meeting  
September 29 – October 2, Ft. Worth, TX

Great Lakes Regional Meeting  
October 17-20, Peoria, IL

Midwest Regional Meeting  
October 20-22, Manhattan, KS

Western Regional Meeting  
October 27-30, Sacramento, CA

Northeast Regional Meeting  
October 31- November 3, Rochester, NY

Southeast Regional Meeting  
November 10-13, Raleigh/Durham, NC

For more information, job seekers and employers may visit the ACS website [www.chemistry.org/careers](http://www.chemistry.org/careers) or call 1-800-227-5558 x6209.

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### **Now Accepting Limited Enrollments for Fall 2004 ACS Webcast Short Courses...**

ACS Webcast Short Courses Provide Convenient, Interactive, State-of-the-Art Training for Chemistry Professionals

Basic Statistical Analysis of Laboratory Data  
October 1-29, 2004

Chemical Engineering Fundamentals-Matters of Size and Scale  
October 20-November 17, 2004

Effective Technical Writing  
October 18-November 15, 2004

Fourier Transform Infrared Spectroscopy  
September 8-17, 2004

Gas Chromatography Basics  
September 22-October 20, 2004

Infrared Spectral Interpretation, I  
September 8-17, 2004

Infrared Spectral Interpretation, II  
June 14-23, 2004

Interpretation of Mass Spectra  
September 14-October 28, 2004

Leadership in Science: Managerial and Technical Skills  
September 14-October 12, 2004

For more information or to register, go to <http://chemistry.org/elearning> or call (800) 227-5558, ext. 4508, or (202) 872-4508 or [shortcourses@acs.org](mailto:shortcourses@acs.org)



Detailed information for these, and other ACS ProSpectives conferences, can be found by visiting [www.acsprospectives.org](http://www.acsprospectives.org)

Process Chemistry in the Pharmaceutical Industry  
February 6-9  
Miami, Florida  
Chairs: Margaret Faul, Amgen; Joseph Armstrong, Merck

Interplay of Chemistry and Biology in Integrative Biology  
March 6-9  
Miami, Florida  
Chairs: Stephen Naylor, MIT; Michael Briggs, Vertex Pharmaceuticals

Advanced Forensic Science Applications for the Food and Drug Industries  
May 1-4  
San Diego, CA  
Chair: Fred Fricke, FDA

Discovery and Selection of Successful Drug Candidates  
May 15-18  
Boston, MA  
Chair: Andrew Combs, Incyte Corporation

(Tentative) Organic Microelectronics (joint with IEEE and MRS)  
July 10-13  
Ogunquit, Maine (tentative)  
Chairs: Tobin Marks, Northwestern (ACS); Henning Sirringhaus, Cambridge University (IEEE), George G. Malliaras, Cornell University (MRS)