

# THE OCTAGON



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Lehigh Valley Section of the American Chemical Society

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## ***January Meeting Announcement: 800<sup>th</sup> LVACS Meeting: Cedar Crest College***

**Date:** *Tuesday, January 22*

Location: Harmon Hall of Peace, Cedar Crest Campus

**Reception:** 6 - 6:30 pm

**Dinner:** 6:30 -7:30 pm

**Meeting:** At the conclusion of dinner

**Talk:** At the conclusion of the meeting

**Menu:** Not available at publication time. Please see section website for update as available.

**Cost:** \$20.00 members and guests; students and retirees \$10.00. Vegetarian choice available, \$18.00

**Contact:** : Lesley @cedarcrest.edu or 610-606-4666 ext. 3457 by noon, on January 18, 2008 . Please given Name affiliation and phone number or e-mail.

**Directions:** visit the Cedar Crest website at [www.cedarcrest.edu](http://www.cedarcrest.edu)

### **Speaker: Dr. Lawrence T. Sein**

Dr. Sein is Assistant Professor of Chemistry in the Department of Chemical and Physical Sciences, Cedar Crest College, Allentown, PA. Born and raised in Philadelphia, he received his B.S. in chemistry from Charter Oak State College in 1996, M.A. in chemistry from Temple University in 1998, and Ph.D. in inorganic /physical chemistry (also from Temple) in 2000. He completed post-doctoral terms at Thomas Jefferson University and the University of Pennsylvania in computational biophysics. He has been an invited speaker at the Technical University of Eindhoven, the Netherlands; Agricultural University of Wroclaw, Poland; and Princeton University in the

United States. After having taught at Temple University, Philadelphia University, Cabrini College, and Montgomery County Community College, Dr. Sein joined the faculty at Cedar Crest College in the fall of 2005. He teaches courses in inorganic chemistry and the quantum mechanics (Physical Chemistry II) course. He developed a new inorganic synthesis laboratory in 2005, and wrote an inorganic chemistry textbook emphasizing concepts from group theory. His research interests include conducting polymers, computational chemistry, and heterogeneous catalysis. He is co-author on 28 publications.

### **Talk: Aniline Trimers with Hydroxyl Groups**

Polyaniline is a widely studied, versatile material, which conducts electricity when suitably doped. It is also effective at inhibiting corrosion of metal surfaces. Aniline trimers are convenient models for polyaniline, more effective than the polymer at corrosion inhibition, but non-conducting. Assorted functional groups can be readily incorporated into the trimer backbone, and the results studied both experimentally and computationally. The presentation will discuss new work on the incorporation of hydroxyl groups onto aniline trimers, and the resulting effects.

## ***February Meeting Announcement: 801<sup>st</sup> LVACS Meeting: Muhlenberg College***

**Date:** *Thursday, February 28*

**Location:** Muhlenberg College

**Reception:** 5:30 - 6:00pm in Seegers Union room 111

**Dinner:** 6:00pm

**Meeting:** 7:00 pm in Trumbower 130

**Talk:** At the conclusion of the meeting

**Menu:** Chicken Supreme, or Sesame Beef with Asian vegetables

**Cost:** \$20.00 members and guests; students and retirees \$10.00

**Contact:** LuAnn Feist, 484-664-3260; email feist@muhlenberg.edu by noon Feb 25th, with name, affiliation, menu choice and phone number.

**Directions:** visit the Muhlenberg website at www.muhlenberg.edu

**Speaker: Dr. Tom Lectka**

Tom Lectka obtained his B.A. from Oberlin College in 1985. He studied under John McMurry at Cornell, receiving his Ph.D. in 1990. After one year of study in Heidelberg with a Humboldt Fellowship, he became an NIH Postdoctoral Fellow at Harvard in Dave Evans's group. Since 1994, he has been in the Chemistry Department at Johns Hopkins, having been promoted to Professor in 2002. His recent awards include Dreyfus, Sloan, and J.S. Guggenheim Fellowships, and a Merck Faculty Development Award. His interests span problems in asymmetric and polyfunctional catalysis, solid-phase based reactions, and mechanistic chemistry.

**Talk:**

o-Benzoquinones constitute a diverse class of reactive molecules whose asymmetric chemistry has been scantily explored. From pure synthesis to medicine to biology, o-benzoquinones play important and mechanistically interesting roles. In this talk, we wish to present new catalytic, asymmetric reactions of o-benzoquinones, spanning the reactivity spectrum from simple o-quinones to benzoquinone imides and dimines, as well as o-quinone methides. These reactions give rise to useful products such as alpha-hydroxyesters, unusual alpha-amino acid derivatives, and biologically relevant polycyclic skeletons. In many cases, products are produced in almost complete enantiomeric excess, as well as in excellent yields.

**2007-2008 LVACS Meetings**

February- Muhlenberg  
March 21- DeSales-  
High School Teachers Night  
April - Moravian  
Student Awards and Poster Session  
May - East Stroudsburg - Pub Night

**Election Results  
LVACS Officers - 2008**

**Chair:** Julie Ealy  
Penn State University Lehigh Valley  
jbe10@psu.edu 610-285-5115

**Chair Elect:** Chester Crane  
Science App.Int.Corp. (SAIC)  
**Chester.A.Crane@saic.com** 973-366-3200

**Immediate Past Chair and Secretary:**  
Paul Bouis **pbmbi@rcn.com**

**Treasurer:** John Freeman  
East Stroudsburg University  
East Stroudsburg, PA 18301  
**jfreeman@po-box.esu.edu** 570-422-3446

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

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

**Alternate-Councilors:** Roger Egolf  
Penn State Lehigh Valley Campus  
Fogelsville, PA 18051  
**rae4@psu.edu** 610-285-5110  
& T. Michelle Jones-Wilson  
East Stroudsburg University  
East Stroudsburg, PA 18301  
**mjwilson@po-box.esu.edu** 570-422-3703

**Octagon Editor & Webmaster:**  
T. Michelle Jones-Wilson (see above)

**October Meeting Minutes**

The most recent meeting was very well described by T. Michelle Jones-Wilson in the November 2007 Octagon:

The 798<sup>th</sup> meeting of LVACS wasn't a typical meeting. One reason might have been that 30% of those in attendance were a bit young to be members. Twenty eight children and their parents, along with other members (74 in total) met at the Da Vinci Discovery Center of Science and Technology on Wednesday, October 24 from 6:00-8:00; and a great time

was had by all. The evening featured good food and a great NCW logo cake as well as a chemistry magic show put on by the East Stroudsburg University Student Affiliate. We had 6 children make posters for submission to the NCW national competition and almost every child present made slime. (And I think a lot of the college students played with the slime as well). Full access to the museum and its hands on exhibits was available for members and their guests. It was a great evening sponsored by National under an innovative programs grant we were awarded last year.

The meeting was adjourned by Chair Paul Bouis at 8:05 pm.

### ***November Meeting Minutes***

The 799<sup>th</sup> meeting of the Lehigh Valley section of the American Chemical Society was called to order on Wednesday, November 14, 2007 at 7:17 pm by Chair Paul Bouis at Lehigh University.

There was a call for a historical article on the LV ACS section to be included in the January *Octagon*.

The annual election process for the officers of the section was conducted. July Ealy served as Chair-Elect in 2007 and will assume the position of Chair in 2008. Chester Crane was nominated for the position of Chair-Elect. There were no other nominations for the position. The section elected Chester to the position of Chair-Elect for 2008.

The other positions of Treasurer (John Freeman), Councilors (Carol Baker Libby and Pamela Kistler), and Alternate-Councilors (Roger Egolf and T. Michelle Jones-Wilson) will continue through 2008. A request was made for nominations for secretary. With no nominations, the position will be assumed by Immediate Past Chair Paul Bouis.

Treasurer's report: John Freeman – the section has a balanced budget.

The minutes were approved for past meetings as published in *The Octagon*.

Professor Ned Heindel of Lehigh University introduced our speaker for the evening, James J. Bohning. The title of his talk was **Madder on the Monacacy: Eighteenth-century Moravian dye works in Pennsylvania**. More details of his work appear in the November issue of *The Octagon*. Professor Bohning also pointed out that the University Center was once the museum of the University.

Chair Paul Bouis thanked Professor Bohning for a very colorful talk and adjourned the meeting at 8:22 pm. The next meeting will be held at Cedar Crest College in January, 2008.

Respectfully submitted,  
Chester Crane

### ***Chem Shorts for Kids - Thermometer Thoughts***

Kids, how would you like to make your own thermometer? All you will need is some water, rubbing alcohol, a clear, narrow-necked plastic bottle, food coloring, a clear plastic straw, and tape or modeling clay. Here is what you do:

1. Pour equal volumes of rubbing alcohol and water into the bottle. You want the bottle to be at most 1/4 full.
2. Add a couple drops food coloring.
3. Put the straw in the bottle such that the bottom is under the liquid, but not touching the bottom of the bottle.
4. Fix the straw in place using tape or clay. Seal the bottle so that air can not get in or out of the bottle around the straw.
5. Heat the bottle and watch what happens. The easier way is to hold it in your hands for a few minutes.
6. You can cool the bottle by putting it in the fridge.

Congratulations - you just made a thermometer! Just like any thermometer, the liquid expands when warmed. This makes the liquid no longer fit in the bottom of the bottle. As the alcohol expands the colored mixture moves up through the straw. You can watch your thermometer and see how the liquid changes throughout the day. What happens if your thermometer is in shadow or in sunlight? The liquid should go up the straw with heat and down the straw when cooled (hopefully not all the way or the thermometer might not work anymore).

Why does the level of the liquid change with temperature? Because the air in the bottle changes volume with temperature. As air is heated it either expands or exerts more pressure. In trying to expand and in exerting pressure, it fights gravity and pushes some liquid up the straw. Most common thermometers work with exactly these principles.

References:

<http://www.energyquest.ca.gov/projects/thermometer.html>  
and  
[http://experimentopia.org/experiment/build\\_your\\_own\\_the\\_thermometer](http://experimentopia.org/experiment/build_your_own_the_thermometer)

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Please note: All chemicals and experiments can entail an element of risk, and no experiments should be performed without proper adult supervision.

## *This Month in Chemical History*

**Harold Goldwhite, California State University, Los Angeles, hgoldwh@calstatela.edu**

When I was a boy I enjoyed stamp collecting; a pleasure I am sure I shared with many other children at that time. I had a couple of albums and would beg, borrow, buy and barter exotic postage stamps. I learnt quite a bit from this hobby about the far-flung reaches of what was then the British Empire including its many colonies. As I reached my teens that hobby was abandoned; I sometimes wonder whatever became of those albums?

Later in life, when my enthusiasm for the history of chemistry blossomed, I began collecting, in a desultory fashion, postage stamps that had relevance to science, and especially chemistry. I amassed perhaps a few dozen of these – and those stamps I still have. But when, for my last birthday, my wife Marie presented me with a beautifully illustrated and rather comprehensive volume on the subject I realized that I had barely scratched the surface of chemistry on postage stamps. That book is “A Philatelic Ramble through Chemistry” by Edgar Heilbronner and Foil A. Miller published by Verlag Helvetica Chimica Acta, Basel and Wiley-VCH in 1998. It is illustrated with over a thousand examples in full color. The preface includes as epigraph a statement attributed to Ernest Rutherford: “Science is physics; everything else is postage stamp collecting” which may remind us that Rutherford was quite surprised when he won the Nobel Prize for chemistry for his research in radioactivity. Rutherford’s colleague Soddy was the chemist.

The Heilbronner and Miller book “is not a history of chemistry which uses stamps instead of the usual illustrations, but a collection of short essays and comments on such chemistry as can be found on postage stamps and other philatelic items. In other words the choice of topics is dictated by the philatelic material available.” Nevertheless it turns out that postage stamps have represented many, perhaps most, of the major figures who feature in the history of chemistry with some notable exceptions (Robert Bunsen for one). The items chosen for this collection are reproduced in color either in the size in which they were issued or enlarged. It is a great browsing or “coffee table” book. (I have no financial interest in either of the publishers named, by the way.)

To begin at the beginning a Greek stamp shows Democritus of Abdera (ca. 460 – 370 B.C.) who is cited as an initiator of an atomic theory of matter. His ideas lost out to those of Aristotle, also portrayed on a Greek stamp, who developed the four

element theory of earth, air, fire, and water beautifully portrayed in a modern painting on a Swiss stamp. Jumping ahead somewhat the seven metals of the ancients, each associated with a planet in alchemy and astrology, are shown on a handsome collectors set from the Marshall Islands. Alchemy is well represented on postage stamps. For example a first day cover issued at PITTCON in 1990 features the US Postal Service’s “Chemistry” stamp of that year and a reproduction of an engraving made from David Teniers’ well-known painting “The Alchemist” which at that time was in the Fisher Collection and is now at the Chemical Heritage Foundation. Alchemical apparatus including retorts, stills, and furnaces are depicted on stamps from Switzerland, Czechoslovakia, and Portugal among others. The great Arabic alchemists are well represented; Jabir is on a Jordanian stamp, Razi on an Iranian stamp, and ibn Sina on a Libyan stamp. Paracelsus has multiple representations from Germany, Switzerland, Austria, and Hungary.

Of course particular countries tend to honor their own. Thus the 16-17 century chemist/alchemist Van Helmont is shown on a Belgian stamp while Eire honors Robert Boyle, a son of the Earl of Cork. Boerhaave, a distinguished teacher of chemistry in Leiden in the 17-18 century, is featured on a Dutch stamp and one of the rare US scientific commemoratives honors Joseph Priestley who ended his career in the United States.

## *News From National ACS*

### **Registration is now open for the Woodbridge, NJ ACS Short Course Circuit**

- Early Registration Discount Available

Registration has opened for the ACS Short Course Circuit to be held in Woodbridge, NJ, February 11-15, 2008. Register before January 14 to receive a \$100 discount on your registration fee.

The following courses are being offered at the circuit:

- Statistical Analysis of Laboratory Data - February 11-13
- Experimental Design for Productivity and Quality in R&D - February 11-13
- Chemical Engineering for Chemists - February 12-13
- Pharmacokinetics and Pharmacodynamics: Principles and Applications in Non-Clinical Drug Development - February 12-13
- Drug-Like Properties in Drug Discovery – February 12-13
- Essentials of Medicinal Chemistry and Pharmacology - February 12-13



Process Research in the Pharmaceutical Industry: The Design and Development of Practical Syntheses - February 14-15

Effective Supervision of Scientists and the Technical Staff - February 14-15

Recent Developments in Organic Synthesis - February 14-15  
Analysis and Interpretation of Mass Spectral Data - February 14-15

Methods Development, Validation Procedures, and Conformity Assessment in the Analytical Laboratory - February 14-15

Multi-registration and academic member discounts are available. For more information, please visit us at [acs.org/shortcourses](http://acs.org/shortcourses) or call 202-872-4508.

### **American Chemical Society debuts Bytesize Science — a new podcast for young listeners**

The American Chemical Society (ACS) Office of Communications has launched Bytesize Science, an educational, entertaining podcast for young listeners. Like the flying car, Anglia, in the Harry Potter films, Bytesize Science transports kids, teachers, and other listeners into a real-life world realm where science is the enchantment.

Bytesize Science translates cutting-edge scientific discoveries from ACS' 36 peer-reviewed journals into stories for young listeners about science, health, medicine, energy, food, and other topics. It includes content from Chemical & Engineering News, ACS' weekly news magazine.

New installments of Bytesize Science are posted every Monday and available without charge. The archive includes items on environmental threats to killer whales, a scientific explanation for why some people love chocolate, some unlikely new uses for compact discs, and a hairy tale about "hairy roots."

The podcaster for Bytesize Science is Adam Dylewski, an ACS science writer and recent graduate of the University of Wisconsin-Madison with degrees in genetics and science communication. Dylewski spent his college career immersed in science and journalism, writing down-to-earth explanations of vital discoveries as a weekly science columnist for The Daily Cardinal, UW-Madison's student newspaper. Later, he continued to translate science news as a reporter for UW-Madison's Communications office and for The Why Files, an award-winning science news site with a witty, fun edge.

Podcasting is an increasingly popular way of accessing news, information, and entertainment content from the Internet. The

term was derived from Apple's "iPod," a portable digital audio and video player, and "broadcasting." Podcasts allow users to subscribe to a "feed" and receive new files automatically whenever posted to the Internet. Subscribe to Bytesize Science in iTunes. No iTunes? No problem. Listen to latest episodes of Bytesize Science in your web browser

### **Computer and Electronic Discounts for ACS Members**

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### **EXCLUSIVE Hotel Discounts for ACS Members!**

ACS members are guaranteed an additional 10% discount off the best available rate at over 6,500 Wyndham Hotel Group properties around the globe. Whether you are looking for an upscale hotel, an all-inclusive resort or something more cost-effective, we have the right hotel for you... and at the right price. So start saving now. Call our special member benefits hotline and give the agent your ACS discount ID number 62871 at the time of booking.

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Ramada®	1-800-462-8035
Super 8®	1-800-889-9706
Travelodge®	1-800-545-5545
Wingate®	1-877-202-8814
Wyndham Hotels	1-866-854-1604

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