

# THE OCTAGON



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Lehigh Valley Section of the American Chemical Society

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## *819<sup>th</sup> Meeting of the LVACS Tuesday, October 26, East Stroudsburg University*



*A beautiful drive north!  
A terrific fall menu!*

**Location:** East Stroudsburg University

**Tours:** Tours of Hoeffner Science and Technology center begin at 5:30 PM

**Reception:** 6:00 PM, 3<sup>rd</sup> Floor Atrium, Hoeffner Science and Technology Center

Warm apple cider with cinnamon sticks, water with ginger, apple and pear slices, iced tea, coffee, imported and domestic sliced cheese and fresh sliced fruit tray, assorted crackers and flatbreads, autumn roasted vegetable platter drizzled with honey mustard and accompanied with honey mustard dip, assorted sliced breads and crostini

**Dinner:** 6:45 PM, 3<sup>rd</sup> Floor Atrium, Hoeffner Science and Technology Center

**Menu:** Pear and walnut salad with feta cheese and mixed greens, homemade vinaigrette or creamy peppercorn dressing, rustic dinner rolls with handmade butter roses, harvest minestrone soup, roasted autumn vegetables, roasted sweet potatoes with a honey drizzle, pumpkin ravioli topped with a dollop of brown butter sage, pomegranate glazed grilled chicken, pumpkin cheesecake with a dollop of cinnamon whip cream or caramel apple pie.

**Business Meeting:** Business Meeting at the conclusion of dinner, Hoeffner Science and Technology Center

**Talk:** At the conclusion of the meeting, 117 Hoeffner Science and Technology Center

**Cost:** \$25, students and retirees \$12

**Contact:** Michelle Jones-Wilson  
mjwilson@po-box.esu.edu by Thursday, October 20.

**Directions:** directions can be found on the web at [http://www4.esu.edu/aboutesu/welcome\\_ctr/directions.cfm](http://www4.esu.edu/aboutesu/welcome_ctr/directions.cfm).

**Campus map:** <http://www4.esu.edu/today/map/download/MapLargeWithIcons.jpgs>

**Parking:** parking in "the pit", the lot behind the

**Speaker: Dr. Joseph Pigga**

Joe Pigga received his B.S in chemistry from Millersville University in 2001 and his Ph.D. in Analytical Chemistry in 2010. After graduating from Lehigh he joined the Department of Chemistry at East Stroudsburg University as a visiting assistant professor.

**Talk: “Blackberries”** - Counterion Distribution around Hydrophilic Molecular Macroanions: The Source of the Attractive Force in Self-Assembly”

**Abstract:** Polyoxometalate (POM) macroanions are nanometer sized inorganic ions composed of metal oxygen polyhedrals. Instead of existing as discrete ions in solution the large POMs tend to self-assemble with one another to form supramolecular structures called “blackberries”. The unique self-assembly behavior is attributed to the close association between POMs and small counter-cations.

The interaction between water-soluble Keplerate Polyoxometalate (POM) macroanions and small counter-cations is explored by laser light scattering, anomalous small-angle X-ray scattering (SAXS), and isothermal titration calorimetry (ITC) techniques. Small Angle X-ray scattering (SAXS) is used to study the distribution of monovalent cations around 2.5-nm-diameter “Keplerate” polyoxomolybdate {Mo<sub>72</sub>V<sub>30</sub>} macroanions. Small angle X-ray scattering data indicates that most of the counter-ions are “free” in solution at low macroion concentrations.

The association of counter-ions was found to increase with increasing macroion concentration and with decreasing solvent polarity. A close connection between the counter-ion association and the self-assembly of the {Mo<sub>72</sub>V<sub>30</sub>} into the supramolecular structures is observed. Polyoxometalates macroions exhibit a preference for the type of associated counter-cations based upon the counter-ions’ valence and hydration, when multiple types of additional cations are present in solution (even among different monovalent cations).

*820<sup>th</sup> Meeting of the LVACS  
Thursday, November 4,  
Lehigh University*

**Location:** Lehigh University -Mountaintop Campus.

**Reception:** 5:30 PM Stabler Observation Tower, Iacocca Hall-Mountaintop Campus

**Dinner:** 6:00 PM - Dinner is limited to 50 people so please register early and certainly before October 25

**Menu:** Taste of Venice Buffet: Tuscan Bean Soup, Field Greens, Focaccia Croutons, Oven Cured Tomatoes and Roasted Peppers with House Vinaigrette, Chicken Cutlet with Broccoli Rabe and Pepperonata, Tilapia with Basil Scampi Sauce, Penne Al Forno with Spinach, Pecorino and Tomato Cream Sauce, Assorted Rolls with Butter, Assortment of Biscotti& Cannolis , Ricotta, Cheesecake

**Business Meeting:** At the conclusion of dinner

**Talk:** 7:00 PM Iacocca Hall, Room B023, All are welcome for the talk

**Cost:** \$20 Members; \$10 Students and Retirees, Cash or check payable to “Chemistry – Lehigh University”

**Contact:** Please use this link to confirm your attendance <http://bit.ly/aWf41y>. **Please note the October 25th deadline to reserve a place for dinner.** Any questions, please contact JoAnn DeSalvatore at 610-758-3471 or [chemgrad@lehigh.edu](mailto:chemgrad@lehigh.edu)

**Directions:** On the web at <http://tinyurl.com/LVACSDINNER>

**Speaker:** Keith Allison, Technical Project Manager for R&D, Crayola , Easton, PA

Keith Allison is a native of the Allentown area who completed a B.S.(Chem- Magna Cum Laude) degree at Muhlenburg College and an M.S. in analytical

chemistry at Penn State. In high school he displayed a natural talent for drawing/sketching with whatever implement was available (crayons, markers, pencils, pens, charcoal, etc.), but he never developed a fondness for painting. As a youngster he was first enthralled with science and colors when his father would test the pool water with the old-style pH indicator drops. Interests in color, in analysis, and in chemistry drew Keith to a career at what was then called Binney & Smith where he soon became known as "Dr. Crayola" for his frequent presentations on the "Science of a Crayon" to elementary school kids.

### **Talk: "The Colors of Crayola" A Scientific Retrospective**

**Abstract:** From prehistoric times man has been drawing on cave walls, animal skins, and later on paper. Pastes of highly toxic antimony, arsenic, and copper salts along with a few plant pigments were used to produce an image. Products like the contemporary crayon cannot incorporate such toxic metals or even suspicious botanical pigments. This talk will address what pigments, chemicals, bulking media, and solvents are considered as safe in modern marking instruments and how these components have evolved from the cave painter's palette.



### **Science Café at Barnes & Noble**

Wednesday, October 13, 7 PM

The third Science Café will be presented by Professor David Sunderlin of Lafayette College on Wednesday, October 13 at 7 pm. His presentation at Barnes and Noble in the Southmont Center off of Route 33 will be on "A Warm Arctic? Alaska in an Ancient Greenhouse Climate." Professor Sunderlin is an assistant professor in the Department of Geology and Environmental Geosciences.

**Abstract:** Climates have been warm in Earth's deep past. Just after the extinction of the dinosaurs and right at the time of the rise of primates, whales, and

grasses, Earth was in its last major "greenhouse" climate phase. The fossil record of Alaska from this time holds clues to understanding ancient ecosystems at high latitudes. What we find there are palm tree fossils, amber with insects, and large petrified wood indicating warm temperate conditions very different from those there today.

October 13th is National Fossil Day, so Professor Sunderlin will be bringing along amber, leaf fossils and petrified wood samples to B&N. We still have some leftover chocolate from last month's wonderful Science Café, so there will be intellectual and gastronomic treats for all. If you have any ideas for topics and/or speakers for the Science Cafés, please contact Bill Miles (milesw@lafayette.edu). We hope to make the Science Cafés an enduring and highly visible outreach effort of the Lehigh Valley Section of the ACS.

### **September Meeting Minutes**

The 818th meeting of the Lehigh Valley section of the American Chemical Society was held on Monday, September 13, 2010, at Lafayette College. Chair William Miles opened up the business meeting began at 7:10 PM.

John Freeman announced the winners of the 2010 Organic Scholarship contest. Ross Moretti was the overall winner and also tied was co-winner of the essay contest with Jessica Frey (both of Lafayette).

Both Paul Bouis and Les Sperling were recognized for their efforts as ACS Fellows from the Lehigh Valley section.

The annual officer elections are approaching fast. If you wish to nominate someone for an officer's position, please e-mail one of the members of the nominating committee (Tara Baney, Ned Heindel, Carol Libby and William Miles). Al Martin's treasurer's report indicates that the section is financially well. The checking account has \$6,719.30 and the total assets is \$29,336.79. There is also just under \$2,000 available for the High School Scholarship fund.

There were no new councilor's reports. Councilor Roger Egolf announced that the section is looking for input into changes on the due structure. Please e-mail

him if you have any suggestions.

Dr. Jennifer Mass gave the talk of the evening, which was entitled 'When Masterpieces Meet X-Rays: Recovering Hidden and Vanishing Images in Paintings.' The talk focused on the use on X-ray techniques for analyzing paintings and determining the best method for preserving the paintings in their current state.

Respectfully Submitted, Phillip Weiser, Secretary LVACS

### ***National Chemistry Week 2010!***

**October 17–23, 2010**

**Theme: "Behind the Scenes with Chemistry!"**



Chemistry is everywhere, whether prominent as a science fair project or tucked behind the scenes of a movie set or book. Explore the special effects in movies to appreciate that it is not magic, but rather common chemical concepts which explain the mystery behind the "magic" that is shown. For more information on the theme, view the 2010 overview can be found at [http://portal.acs.org:80/portal/PublicWebSite/education/outreach/ncw/CNP\\_025198](http://portal.acs.org:80/portal/PublicWebSite/education/outreach/ncw/CNP_025198)

### ***2010 Nobel Prizes***

**Carbon is the winner!**

Two nobel prizes this year went to work on carbon.

In chemistry: American Richard Heck and Japanese researchers Ei-ichi Negishi and Akira Suzuki for finding new ways to bond carbon atoms together, methods now widely used to make medicines and in agriculture and electronics.

In physics: Russian-born Andre Geim and Konstantin Novoselov for experiments with graphene, the thinnest and strongest material known to mankind.

### ***LVACS has a new look and a new home online***



Please check out our new url [www.lvacs.net](http://www.lvacs.net) the new home of the Lehigh Valley Section of the American Chemical Society.

We also have a fresh look - go take a peek!

### ***Call for Nominations***

**Interested in Running for Office in the LVACS?**

If you are interested in running for the position of Chair, Secretary, or Treasurer of the LVACS, please contact one of the members of the nominating committee (Bill Miles, Ned Heindel, Tara Baney and Carol Libby) by October 10. The Chair ballot will be open to academic candidates this year, in keeping with our tradition of alternating the Chair position between academic and industrial chemists. We will be putting together a ballot for inclusion in the November Octagon.

### ***ACS Career Resources***

**Network with more than 1,000 global scientists, engineers, and human resource professionals at the ACS virtual career Fair**



November 2-3, 9:00am - 6:00pm EST

Over the full 2 days you'll be able to:

- \* Meet and speak with employers located around the globe.
- \* Interactive virtual booth with real-time text and video chat capability



\* Visit interactive booths and speak with company representatives to gain first-hand information about their organizations, open positions, products & services, and work culture.

\* Attend any or all of the 6 live webinars.

\* Visit the Networking Lounge to informally meet other chemical professionals or to join one of the scheduled chat sessions.

\* Tap into valuable information at the Resource Center. You'll find literature from the employers and access to on-demand ACS Webinars and other ACS Career materials.

You can participate in the conference anonymously. Register or learn more at [www.acs.org/vcf](http://www.acs.org/vcf).

### ACS Careers Job Club Webinar Series

Whether you are looking for your first job or seeking to advance or transition in your career, ACS Career resources give you a competitive advantage in your job search. ACS Careers offers members like you invaluable resources from one-on-one career consulting, wage and salary information, and dynamic webinars to hone your job search skills. ACS Careers is the job search resource for chemists and scientists at all levels of experience and education. Please join us for the follow informative webinars and Get a Jump on Your Career!

**Title:** Technical and Leadership Skills to Advance Your Sustainability Toolkit - Advance your career as more companies move to a sustainable business model

**Date/Time:** October 12th from 1:00 to 2:30 pm ET. There will be a 1 hour presentation followed by 30 minute Q&A.

**Register:** <https://www2.gotomeeting.com/register/606241650>

**Guest speaker:** Randi Schoenfelder, Managing Partner Theodolite Human Capital, LLC  
Ann Lee-Jeffs, Manager Product Stewardship, Johnson & Johnson

ACS careers in partnership with Theodolite Human Capital, has conducted a comprehensive study to find out what organizations will need to support their sustainability strategies, and what ACS members will need to retool and advance their careers in the new

green economy. A unique blend of technical and leadership skills will be needed to market and position yourself for growth in this environment. Our speakers will share knowledge and findings, and answer your questions around skills needed to grow your career.

**Title:** Aligning Your Unique Capabilities with the Goals and Strategies of Companies - Learn how companies are using Competency Models in their Workforce Planning

**Date/Time:** November 16th from 1:00 to 2:00 pm ET.  
**Register:** <https://www2.gotomeeting.com/register/761716626>

**Guest speaker:**

Randi Schoenfelder, Managing Partner Theodolite Human Capital, LLC  
Human Resource professionals have increasingly used the competency based approach in all aspects of HR Management, from recruitment and selection, training and development, succession planning and performance management. Using competency models in selection goes beyond basic knowledge, skills and abilities and incorporates business environment and company strategy. The use of competency models in the selection process enables companies to not only hire good people, but hire the people that will most likely be successful in their company. Come find out how high performing companies use competency models, and learn how you can best identify competencies in your own background, and convey them to hiring managers and HR professionals.

### *Countdown to International Year of Chemistry (IYC) 2011: Get Involved Now!*

**We need your ideas!**

Through the IYC-2011 initiative "365: Chemistry for Life," a different aspect of chemistry will be highlighted every day on [www.acs.org](http://www.acs.org).

Submit ideas for a favorite element, compound, discovery, process, chemist, or chemistry innovation at [www.acs.org/iyc2011](http://www.acs.org/iyc2011), by September 17, 2011. Suggestions should fall into one of four categories:

- Energy
- Environment
- Materials
- Health

Selected submissions will receive recognition and an IYC-2011 pin and t-shirt.

### **IYC 2011 toolkits are now available!**

Visit our website to view and download templates, guidelines and ideas for planning and celebrating IYC 2011. Don't see what you need? Let us know at [iyc2011@acs.org](mailto:iyc2011@acs.org).

### **Subscribe to the International Year of Chemistry (IYC) Bulletin Now!**

Sign-up to receive the monthly IYC Bulletin intended for those individuals involved in grassroots promotion, planning and execution of IYC programs, events and initiatives. Visit our website to learn more about our many activities and initiatives celebrating IYC-2011.

### ***Submissions to the Octagon***

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

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

#### **A note about formatting:**

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

### ***LVACS Officers - 2010***

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