

THE OCTAGON



Volume 94, No. 8, November 2011

Lehigh Valley Section of the American Chemical Society

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Next Meeting

828th Meeting of the LVACS
Tuesday, November 1, 2011
Northampton Community College

Date: Tuesday, Nov. 1, 2011

Location: Northampton Community College
Hampton Winds Restaurant

Reception: 6:30- 7:30

Dinner: 7:30 buffet

Meeting: At conclusion of dinner

Talk: At conclusion of business meeting

Menu: Appetizers: Pulled Pork Spring Rolls,
Grape "Bon Bons" w/walnut goat cheese

Buffet Dinner: Cranberry Walnut Salad, Herb
Roasted Chicken Breast, Butternut Squash Risotto,
Savory White Bean Sauce, Assorted
Cookies/Brownies, Beverages: Assorted Soda,
Iced Tea, Ice Water, Coffee, Hot Tea

Directions: Available on the web at
<http://www.northampton.edu/About-NCC/Maps-and-Directions.htm>.

A campus map is available at

<http://www.northampton.edu/Documents/About%20NCC/NCC%202010%20Campus%20Map.pdf>.
The Hampton Winds Restaurant is letter L.

Cost: \$ 25.00 members - students and retirees half price

RSVP: William Magilton, 610-861-5558;
wmagilton@northampton.edu, by Oct. 27

Speaker: Ryan Fealy

Mr. Ryan Fealy received his B. S. in Chemistry and Mathematics from Delaware Valley College, (2003) His M.S. in Analytical Chemistry was obtained from Lehigh University in 2006. He then worked on the Mechanism of Spontaneous Formation of Monolayers on Gold from Alkyl Thiosulfates

He is anticipating his PhD in Physical Chemistry from Bryn Mawr College in December 2012 and is focusing on the Synthesis and Electrochemical Studies of ruthenium (Ru) and iridium (Ir) complexes containing multiple metal centers. Mr. Fealy has taught at Delaware Valley College, Warren County Community College and is currently at Bucks County Community College.

Title: *Synthesis and Electrochemical Studies of ruthenium (Ru) and iridium (Ir) complexes containing multiple metal centers*

Abstract

Multi-metal centered complexes have recently been an interest in light harvesting experiments where exposure to solar energy produces an excited state of the catalyst that could reduce water to hydrogen. Our group has synthesized ligands and their respective Ru complexes that contain 1, 2, 3, or 4 ruthenium (Ru) redox centers in good yield and purity. Their redox behavior, ligand and metal, has been investigated through cyclic voltammetry. Using this technique diffusion coefficients have been measured for each complex using both a stationary and rotating disc working electrode. The monomer has the largest while the other three complexes had a similar lower value. Collection experiments were reported comparing the current produced by reduction to that of oxidation using a Rotating Ring Disc Electrode (RRDE). Values decreased in the range of 24% down to 6% as the number of redox centers increased. Collecting this data ensures us to understand how these species behave in solution with an applied potential. Synthesis of a similar family of complexes changing the metal center to iridium (Ir) has been conducted successfully, and some preliminary results have been collected. The Ru and Ir complexes will be studied photochemically to see which complex is better at producing sufficient hydrogen.

September Meeting Minutes:

- Thanks to Lafayette for hosting
- Current bylaws are 30 years old and outdated- new bylaws have been proposed and approved by ACS – need to vote to accept bylaws- to see proposed Bylaws see Local section website
- Elections are in Nov.
- Some have stated interest in running
- Still time to nominate
- National Chemistry Week- October 16th to October 22
- Check out available ACS webinars

- Dr Wachs of Lehigh University was recognized as a ACS Fellow- Congratulations!
- Foundation in Chemistry Award to Michael Gallucci- From East Stroudsburg attending Lehigh University studying Chemical Engineering- Congrats!
- Please continue to Support Science Cafe
- Potential of grant money
- National Meeting -
 - Culture of Safety in Academic Labs
 - Employment
 - Innovation Chemistry and Jobs- ACS support for small companies
- Thanks to Dr Paul J Chirik for his talk on Modern Alchemy: Base Metal Catalysis, Respectfully submitted, Kelly Caflin, Secretary LVACS

October Meeting Minutes:

Thanks to Lorena for organizing this meeting at Penn State Berks
Bylaws are Posted- Vote on Bylaws is postponed to next meeting since a quorum is not present.
Annual elections are approaching
Bios will appear in Nov Octagon
Still time to nominate people for local office
National Chemistry Week- Section Director: David Aurentz
Please let Dave know the activities within the section- will advertise
Still the International Year of Chemistry
Global water experiment still running- check out the interactive website
Organic Awards : Congrats to Sarah Haas (Essay) and Shellie Miller (overall) of Cedar Crest College

2012 Candidates for Office

Chair Elect

Tara S. Baney, Ph.D. Merck & Co.
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North Wales, PA, 19454-1099
tara_baney@merck.com

Councilor

Pamela D. Kistler, Ph.D., Cedar Crest College

Cedar Crest College
100 College Dr, Allentown, PA 18104-6132
pdkistle@cedarcrest.edu

John Freeman, Ph.D., East Stroudsburg Univ.
East Stroudsburg University, 200 Prospect Street,
East Stroudsburg, PA 18301
jfreeman@po-box.esu.edu

Secretary

Kelley C. Caflin, US Army/Picatinny Arsenal
PO Box 7 Portland, PA 18351-0007
kelley.caflin@us.army.mil
kcc2@lehigh.edu

Lindsey A. Welch, student, Lehigh University
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Treasurer

Roger A. Egolf, Ph.D. PSU-Lehigh Valley
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Center Valley, PA 18034
rae4@psu.edu

Candidate biographies

Chair Elect

Tara Baney

Tara Baney is a Clinical Scientist with the Oncology Franchise at Merck & Co., Inc. She has been with Merck and ACS since 1999. Tara began her career at Merck as a Staff Chemist in Regulatory and Analytical Sciences – Analytical, where she provided worldwide analytical, stability, and regulatory expertise to support the development and manufacture of Ophthalmic and Anti-viral products. She acquired clinical scientific experience as a Medical Program Coordinator (MPC), first in the GI, Ophthalmology, and Neuroscience Group, subsequently moving to the Molecular Profiling Group, where she provided sample and data analysis in focused exploratory studies using RNA expression experiments and serum biomarker studies. Prior to starting her Ph.D. studies through the Merck Doctoral Program (2004 – 2010), she worked in Global Clinical GMP Quality, focusing

on quality audits on outgoing clinical supplies, plus as the Lead Auditor for IVRS UAT systems. She is an active member of the Merck Institute for Science Education. Through her membership in the LVACS, Tara has served as Secretary (2002 – 2004), and Chair (2005).

She has a Bachelor of Science degree in Chemistry, and a Bachelor of Arts degree in Psychology from Cedar Crest College. She obtained her Masters of Science degree in Chemistry from Lehigh University in 1999. During her tenure as an MPC, she acquired a certificate in Clinical Trial Management from Temple University. She completed her biochemistry Ph.D. research at the University of Delaware, graduating in January 2010, where she focused on pseudouridine synthases handling of modified tRNA stem-loops.

In addition, Tara is an Adjunct Professor at Lehigh University, where she developed and is teaching a course called "Chemistry Lab to Clinical Trial" for the Chemistry Department's Regulatory Affairs Distance Education Program.

Councilor

John Freeman

John Freeman is an Assistant Professor at East Stroudsburg University. He has held this position since 2005. He obtained his B.S. in Chemistry from Whitworth College in Spokane WA and his Ph.D. in Biochemistry from Arizona State University. He is a 25+ year member of ACS and a 12 year member in the section. Prior to his time at ESU, he worked in the biotech industry. He served as Treasurer of Lehigh Valley Section for 6 years. He has also served as Chair of the Organic chemistry scholarship committee for many years.

John looks forward to serving in the capacity of Councilor and contributing to the governance of the society.

Pamela Kistler

Pam earned her B.S. in Chemistry and Mathematics from Muhlenberg College; her M.S. and Ph.D. in Solid State Science from Penn State University. She joined the faculty in the department the chemical and physical sciences at Cedar Crest

College in 1989 where she is currently chair. She has served for many years as councilor for the Lehigh Valley chapter of the American Chemical Society and in various roles, including on the policy committee, within the organization at a national level. Prior to that, she served as an instruments specialist at Lafayette College, and as a graduate research fellow in the materials research laboratory at The Pennsylvania State University. She taught at Penn State from 1978-87, and had worked in industry in the Minerals, Pigments and Metals Division at Pfizer Inc. from 1975-77.

Secretary

Kelly Caflin

Kelley Caflin is a chemist for the Department of Defense at the Armament Research, Development and Engineering Center at Picatinny Arsenal, NJ. She currently works in the Energetics and Warheads Explosives Research Branch modifying energetic formulations and developing next-generation materials and explosives for the warfighter. Kelley is an alumnus of Cedar Crest College (B.S. 2003) and Lehigh University (2006 M.S., 2009 PhD). Her PhD research developed a technique for quantitative solid state nuclear magnetic resonance analysis of mixtures utilizing chemometric techniques. Kelley is currently pursuing a master's degree in chemical engineering at Lehigh University. Kelley was a recipient of a National Science Foundation GK-12 Graduate Student Fellowship from 2003-2006. Kelley has been a member of the American Chemical Society since 2003. She resides in Portland, PA with her cats, Argon, Bella, and Nickel.

Lindsey A. Welch

Lindsey Welch is a physical-inorganic chemist who currently holds instructor positions at three Lehigh Valley institutions. She holds a half-time position at Cedar Crest College teaching inorganic chemistry lecture and laboratory as well as physical chemistry laboratory. She teaches physiological chemistry lecture and laboratory at Lehigh Carbon Community College and an experimental chemistry laboratory at Penn State Lehigh Valley, both positions being adjunct. Lindsey earned a B.S. in chemistry from Lycoming College (Williamsport,

PA) in 2006 and will earn a Ph.D. in chemistry from Lehigh University in January 2012. Her doctoral research was based on the surface chemistry of nitrogen containing cyclic molecules on a Pt(111) single crystal and Sn/Pt(111) surface alloys. This work explored the fundamental surface reactions of pyridine, piperidine and cyclohexylamine to understand the how the molecules' degree of saturation affected activation barriers for bond cleavage under ultrahigh vacuum conditions. While at Lehigh University, Lindsey was very active in the Graduate Student Senate and served as their secretary for one year, and as the chemistry unit representative for four years. She has been active in the Lehigh Valley ACS chapter for several years and has helped plan the Iron Pigs outings.

Treasurer

Roger Egolf

Roger Egolf is an Associate Professor of Chemistry at Penn State Lehigh Valley, where he has taught since 1989. Trained as an organic chemist, his main interests are now in the field of the History of Chemistry. He has been active in the ACS, both at the local and national levels since his undergraduate days at Kutztown University where he received a B.S. in Chemistry with a minor in Mathematics in 1985. He then entered graduate school at Lehigh University, earning an M.S. in 1987 and a PhD in 1990, both in Organic Chemistry under the direction of Ned Heindel.

Roger has served the ACS at many levels. Within the Lehigh Valley Section he was Treasurer in 1997 and 2005, Chair Elect in 1998, Chair in 1999, and Past Chair in 2000 and 2001. He has also served the section as Councilor from 2001-2003 and 2009-2010 and as Alternate Councilor from 2004-2008 and 2010. He has also served the Division of the History of Chemistry as Program Chair from 1999-2004, Chair-Elect in 2005-2006, Chair in 2007 -2008, Past Chair in 2009-2010, and is Currently Councilor from that Division (2011-2013). Roger additionally serves on the Heritage Council of the Chemical Heritage Foundation as the representative of the ACS Division of the History of Chemistry.

2011 LVACS Officers

Chair: Nigel Sanders
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Immediate Past Chair: William Miles
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Chair Elect: Lorena Tribe
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Treasurer: Al Martin
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Secretary: Kelly Caflin
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Councilor: Carol Baker Libby
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Councilor: Pamela D. Kistler
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Alt. Councilor: T. Michelle Jones-Wilson
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Alt. Councilor: Roger Egolf
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Octagon Editor & Webmaster:
T. Michelle Jones-Wilson (see above)

Submissions to the Octagon

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

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

A note about formatting:

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

Ballot

2012 LVACS Officers and Bylaws Referendum

Instructions: Please print this page, mark your ballot and insert in a plain envelope. Sign the flap. Insert the signed envelope in a second envelope and send to:

William Miles, Ph.D., Department of Chemistry, Lafayette College, Easton, PA 18042.

Ballots must be postmarked by Nov. 1, 2011.

Chair Elect

Tara Baney

Treasurer

Roger Egolf

Secretary

Kelly Caflin

Lindsey Welch

Councilor

John Freeman

Pamela Kistler

Bylaws Referendum

Accept revised LVACS Bylaws as published in the October 2011 Octagon

Reject revised LVACS Bylaws as published in the October 2011 Octagon