



THE OCTAGON

Next Meeting:

Thursday, October 11
Northampton Community College

**A Century of Gas Warfare in Military
Conflicts and Terrorist Attacks**



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Location: Northampton Community College
Cohen Lounge
3835 Green Pond Rd, Bethlehem, PA 18020
6:00 PM Social Hour
7:00 PM Dinner
8:00 PM Business Meeting and Program

Cost: \$25.00 (includes social hour); \$15 for students and retirees

Menu: Pasta bar buffet with antipasto platter, Marinara sauce, pesto cream sauce, caesar salad, meatballs and chicken cacciatore and red velvet cake.

Directions, <https://www.northampton.edu/about/maps-and-directions.htm>

Parking: Main lot off of Green Pond Rd.

RSVP: To William Magilton at wmagilton@northampton.edu by Monday, October 8.

Please note LVACS in the subject line.



Topic

A Century of Gas Warfare in Military Conflicts and Terrorist Attacks

A century ago, on 21 March 1918, the German army attacked a fortified British position in Flesquieres, France, by saturation gassing of the trenches with sulfur mustard in lieu of explosive munitions or frontal assault by troops. It worked. The British, unable to hold the ground in the face of intense gas warfare, retreated. World War I, often called “The Chemists’ War,” saw dozens of similar toxic gases used by all the combatant nations – England, France, Germany, and the USA – with debatable outcomes in terms of military success. After the war, several multi-signatory international agreements outlawed chemical warfare, but gas toxins have re-emerged in recent years used by terrorist organizations against civilians or in regional conflicts. This presentation traces the use of mustard gas over the last 100 years from World War 1 to the contemporary battle grounds of the mid-East. Recent results will be reported on the development of modern antidotes supported by the US government program, Project CounterACT, in which the presenter is a researcher-participant.

Speaker - Ned Heindel, Ph.D.



Ned D. Heindel is the H. S. Bunn Chair Professor Emeritus of Chemistry at Lehigh University and a consultant on drug development for Azevan Pharmaceuticals. Ned has graduated 40 doctoral students and 165 M.S. students most of whom have entered academia or the health care industry. He has engaged in contract R&D for Astra-Zeneca, Air Products, BMS, Merck, J&J, and Dupont as well as for eight venture capital start-up firms. He served on the boards of the American Chemical Society (ACS), the Council for Chemical Research, the Chemical Heritage Foundation (now Science History Institute), and Centcom Corporation. He is a past president of the ACS. At Lehigh, Ned taught general, organic, and medicinal chemistry, as well as organic mechanisms and three web-mounted graduate courses in a Distance Education M.S. program. Ned is a graduate of Lebanon Valley College (BS), the University of Delaware (PhD), and Princeton University (postdoc). He taught at the University of Delaware, Marshall University, and Ohio University before joining the faculty of Lehigh University. Ned is currently serving as a Senior Research Scientist at Lehigh where he is working on neuropharmaceuticals and on wound-healing accelerants for burns and blisters.



November Meeting ***Thursday, November 13***

Location: Albright College, Department of Chemistry and Biochemistry
13th and Bern Streets, Reading, PA 19612-5234
5:30 - 6:15 PM Social Hour
6:15 - 7:15 PM Dinner
7:30 PM Business Meeting and Program

Cost: \$25.00 (includes social hour); \$15 for students and retirees

Menu: Assorted Dinner Rolls w/ Butter, Mixed Greens Garden Salad w/ Balsamic Dressing
Chicken Breast topped with Goat Cheese, Red Pepper Sauce*
OR Baked Tilapia with Pesto Sauce* Roasted Red Bliss Potatoes, Garlic Seasoned Green Beans

Baked Apple Strudel w/ Bourbon Sauce

*Please specify a choice of entrée, vegetarian entrée by request

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

Parking: <http://www.albright.edu/about/Printable-Map.pdf>

RSVP: To Pam Arts 610-921-7741; partz@albright.edu by November 9. Please note LVACS in the subject line.

Speaker Christine Phillips-Piro, Ph.D., Franklin and Marshall College, Department of Chemistry

Christine Phillips-Piro is an assistant professor of chemistry at Franklin & Marshall College in Lancaster, PA. Her research is focused on the development, characterization, and utilization of UAAs to better understand protein structure and to alter protein function. This work utilizes a number of techniques – including protein characterization, X-ray crystallography, FTIR spectroscopy, and protein functional assays. Christine started her chemistry career at Vassar College where she worked with Profs. Miriam Rossi and Joseph Tanski using small molecule crystallography to structurally characterize molecules with biological activity. Her graduate work in Biological Chemistry at MIT focused on the structural and physical properties of the nickel-binding transcription factor NikR under the advisement of Profs. Cathy Drennan and Collin Stultz. Postdoctoral studies with Prof. Michael Marletta at UC Berkeley focused on the structural and functional characterization of the gas-binding heme protein H-NOX. Christine joined the F&M faculty in 2012.



November Meeting Topic

Protein solvation site-specifically surveyed by unnatural amino acids

The ability to incorporate unnatural amino acids (UAAs) site specifically in proteins greatly enhances the biochemist's toolbox. New UAAs with various functions have been developed to study protein structure and tune protein function. UAAs, containing a small functional group (<5 atoms) that is both sensitive to the local solvation environment and whose IR stretching frequency appears outside the range of functional groups natively found in biology, can be useful tools to probe local solvation environments in proteins. Both cyano- (CN-) and azido- (N₃)-modified UAAs are functional groups that fit these requirements. We have incorporated a number of CN- and N₃-modified UAAs at various positions in multiple proteins and examined these proteins using FTIR and X-ray crystallography. X-ray crystallographic studies indicate that the thoughtful incorporation of these UAAs into a protein does not significantly perturb the structure and allows for direct correlation between IR stretching frequencies and local protein solvation environments. Our work incorporating and utilizing various vibrational reporter UAAs to study local solvation environments in both superfolder green fluorescent protein (sfGFP) and the oxygen-binding heme nitric oxide and/or oxygen binding protein (H-NOX) will be discussed.

Chairs Message

Welcome to the 2018-19 ACS meeting year. I hope that your summer activities rejuvenated and rewarded you. As the section comes into the Fall of 2018 we invite you to participate in several events. Regular meetings: We aim for the third week of the month. Plan on joining us to meet other chemists doing a little networking, and learning about the topic of the month. Then sit back and wait for the topic to hit the big time and say you were there when it was a local. Committees: There are a number of opportunities to serve the section in small ways, Participate in a scholarship committee in the spring, help plan a picnic, get involved in the sections National chemistry week activities in the fall and earth week in the spring. Finally elections: It's not just mid terms for congress your local section holds elections every year. We look for candidates starting in the early fall and the ballot gets posted in late October. Participation by members in governance of the section keeps the section relevant to the needs of the local chemistry community. Getting involved in your section elections allows you to develop the programing in the section, and nationally if you like, to suit your needs, and gives you opportunities to show off your leadership skills. The national society provides leadership training free of charge to members at national meetings and for one member of the Lehigh Valley leadership team at its Leadership development weekend in January. For additional reasons why involvement in ACS helps you check out the my ACS page at <http://my.acs.org/> where members share their story about their involvement in ACS. We look forward to seeing new members in our leadership team.

John Freeman

2018 Chair - Lehigh Valley section of the American Chemical Society.



National Chemistry Week ***October 20***

The Lehigh Valley Section of the American Chemical Society is holding a National Chemistry Week kickoff at the Da Vinci Science Center (3145 Hamilton Blvd Bypass, Allentown, PA 18103) on October 20th from 12:00 PM to 4 PM.

We are looking for the student chapters to plan and design demos and hands on work for grade school and middle school children. If you need suggestions we can work with you to do that. Your group may present multiple demonstrations/experiences. It is expected that you would need 3-5 people per demonstration or a few more if you have hands on experiences. You may bring as many student members that are interested in working on the activities.



The section will provide lunch for the students and an afternoon snack. Please contact John Freeman at jcf2@rcn.com with your clubs intent to participate by October 6 and the number of members participating. by October 15th. Members of the section there families and friends are invited to join us at the Da Vinci Center for an afternoon of chemistry.



LVACS Elections:

Candidates are Needed for these Offices of the Lehigh Valley Local Section of the ACS (election in October/November 2018) If you are interested in running for any local section office, or wish to nominate someone, please inform Any of the current officers particularly the Current Chair John Freeman jcf2@rcn.com or councilor Dr. Kelly Cafilin caflinacs@yahoo.com

Chair-Elect - Serves Jan.-Dec. 2019 Duties of Chair-Elect: Organizes the speaker program for the following meeting year, September 2019-May 2020. Serves as Chair, Jan.-Dec. 2020, . Duties of the Chair are to: lead monthly meetings (January, February, March, April, May, September, October, November) coordinate the preparation of the annual report to the ACS. Ensure that the regular activities of the section are carried on. These include publication of the Octagon, Chemistry Olympiad, Chemistry Week, awarding of Scholarships: Foundation in Chemistry Award (high school scholarship), and the Organic chemistry award. All of these activities have committee chairs in place and only require observing they get completed. Calling meetings of Executive Committee as required minimally two a year. Serves as Immediate past Chair Jan –Dec 2021 Duties of the Immediate Past: Chair the Nominations Committee

Secretary - One-year terms starting Jan. 2019 Duties: Primary responsibility for recording minutes of the regular meetings (January, February, March, April, May, September, October, November). Submits minutes for publication in the section newsletter, The Octagon, and for approval of the membership at next meeting.

Treasurer - One-year terms starting Jan. 2019 Duties: Handles the financial business of the section in a timely fashion, including yearly submitting a budget in November to the executive, a financial update for each meeting payment of all expense items and accurate record keeping

Councilor - Three-year term starting Jan. 2019. Duties: Attends 2 National ACS meetings per year to represent the section at ACS council meetings; travel is partially subsidized by the section. Reports to LV-ACS Executive Committee and general membership on matters of interest and consequence to the section that are presented at the ACS council meetings.

Alternate Councilor - Three-year term starting Jan. 2019. Duties: Represents the Lehigh Valley ACS section at national ACS meetings when Councilor is not able to attend (see Councilor's duties above).

All Officers, Councilors and Alt. Councilors serve on the LV-ACS Executive Committee, which meets as needed at minimum twice a year. Candidates must have an interest in providing professional activities for ACS members who reside or work in our local section thereby increasing Lehigh Valley residents' appreciation of chemistry.



Research Biographies



We are initiating a new column in the Octagon containing research biographies. We hope this column allows chemists in the valley to see others research and potentially find opportunities to collaborate. Our First Biography Features Dr Allison Holliday of Moravian College. If you are interested in seeing your research featured here. Send a note to John Freeman at jcf2@rcn.com

October Research Bio

The Holliday lab at Moravian College is an analytical lab focused on separations research. We use a variety of different separation techniques – gas chromatography, liquid chromatography, capillary electrophoresis, and, through collaborators, ion mobility – to answer environmental and biological questions.

For several years, the main research thread has been using capillary electrophoresis (Holliday lab) and ion mobility (Clemmer lab, Indiana University) to investigate the folding of simple proline-dominated peptides. Since proline peptide folding involves cis-trans isomerism, it is considerably slower than the folding of other peptides, and we were able to follow the folding transition by direct observation of multiple intermediates as a function of time. By following the same transition with capillary electrophoresis and higher resolution ion mobility, we were able to demonstrate that the gas-phase ions observed in ion mobility are directly connected to solution-phase events. Currently, we are looking to expand this analysis by using capillary electrophoresis to look at how interactions with other biomolecules change as the peptides fold.

There are always other projects underway in the Holliday lab in order to pull in interested undergraduate researchers and use available instrumentation. We have published several papers on using solid phase microextraction (SPME) and gas chromatography-mass spectrometry to analyze the defensive secretions of ground beetles as a function of their life cycle stage. We found that the defensive secretion changed as the beetles transitioned from larva to adult, and then as the adults aged; furthermore, during the reproductive period, the defensive secretions of males differed from that of females. Biological experiments with a collaborator established that males and females also differ in their response to the defensive secretion during the reproductive time. This project has now branched out to look at how secretions differ between species of arachnids.

Student interest in forensics has driven a current project to analyze illegal drugs and their metabolites in wastewater samples, and interest in environmental analysis has contributed to an ongoing project to use SPME to extract organic molecules from water for detection using gas chromatography and liquid chromatography.



Councilor's Report

American Chemical Society
256th ACS National Meeting
Boston, Massachusetts
August 19-23, 2018
Actions of the Council



Election Results: Elected Committees of Council

By electronic ballot, the Council elected Ella L. Davis, Lissa A. Dulany, Lisa Houston, and Martin D. Rudd for three-year terms (2019-2021), and Will E. Lynch for a one-year term (2019) on the Council Policy Committee (CPC)

By electronic ballot, the Council elected Allison Aldridge, Christopher J. Bannochie, Mary K. Engelman, Silvia Ronco, and Frankie K. Wood-Black for three-year terms (2019-2021) on the Committee on Nominations and Elections (N&E).

By electronic ballot, the Council elected Rodney M. Bennett, Jacqueline A. Erickson, Judith M. Iriarte-Gross, Donivan R. Porterfield, and Carolyn Ribes for three-year terms (2019-2021) on the Committee on Committees (ConC).

Other Council Actions

Amendments to the ACS Bylaws

Affiliations of SOCIETY Local Sections or Divisions shall become effective upon authorization by their governing body, approval by their respective Council committees governing Local Sections and Divisions, and by confirmation by the Council Committee on Constitution and Bylaws acting for the Council, that the provisions of Section 1 of this Bylaw are met.

An International Chemical Sciences Chapter shall receive no allotment of funds from the SOCIETY and shall not be entitled to elected representation on the Council. A Chapter may assess its members local Chapter dues to be expended for its own purposes in harmony with the objects of the SOCIETY.

Continuation of Committee

On the recommendation of the Committee on Committees, and the concurrence of the Council Policy Committee, Council approved the continuation of the Committee on Chemical Safety, subject to concurrence by the Board of Directors.



Council Continued

Special Discussion

President Dorhout introduced and led a special discussion on what role(s) ACS should play in preventing sexual harassment in the sciences. He highlighted several recent articles, workshops and studies that have called attention to the issue, notably a symposium, "Science of Sexual Harassment" organized during the ACS National Meeting in New Orleans (Spring 2018) by the Women Chemists Committee and Chemical & Engineering News; and a National Academies of Sciences, Engineering, and Medicine consensus study report: "Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine" (2018). He directed Council's attention to existing ACS codes and initiatives to address sexual harassment, and offered items for discussion and possible action:

More signs/information at National Meetings regarding our policies and supporting information

Trained volunteers at national meetings for reporting sexual harassment

A webinar on preventing sexual harassment for local sections or divisions

Highlights from Committee Reports

Nominations and Elections

Ballots for the 2018 fall national election will be distributed October 1-3, with a voting deadline four weeks later, on October 31.

Budget and Finance

The Society is expected to end the year in compliance with each of the five Board-established financial guidelines.

Boston Meeting Attendance

The theme of the 256th ACS National Meeting was "Nanoscience, Nanotechnology, and Beyond." As of Tuesday evening, August 21, attendance was:

Attendees	8294
Students	3671
Exhibitors	1181
Expo only	576
Guest	513
Total	14,235



Council Continued

Membership Affairs

As of August 21, ACS had 149,584 members, which is a decline of only eight-tenths of one percent from the over 150,000 members in 2017. This year-to-date figure represents an increase of over 1,200 members when compared to the last two years. It was noted that five of last seven months have been respectively the best months for membership since at least 2014. The current membership count positions ACS for a strong close to the year, and there is cautious optimism that total membership will rise for the first time since 2011.

Additional Information:

A spokesperson from IUPAC attended several committee meetings and presented information on the project "A Global Approach to the Gender Gap in Mathematical, Computing, and Natural Sciences: How to Measure It, How to Reduce It?"

They are requesting all sections to reach out to their members and ask them to complete the Survey. The USA and Chemistry is currently underrepresented.

To complete the survey and find out more information on this project click on the following link:

<https://gender-gap-in-science.org/>

Submitted by Councilor Kelley Caflin

125th Anniversary Celebration

The celebration of the 125th anniversary of the Lehigh Valley section of the American Chemical Society has been postponed to spring of 2019 at the Da Vinci Science Center in Allentown. A date will be communicated in future correspondence.

We are welcoming input from all our members and as such if you would like to participate in the celebration and volunteer your time please email me at lvacscma@gmail.com. If you need additional information please do not hesitate to contact me.

Celia Williams, Ph.D.



NCW - Voyage to Mars

On Tuesday, October 23rd, as part of National Chemistry Week the Chemistry Club at Cedar Crest College will be hosting the live webinar: Voyage to Mars: Red Planet Chemistry. We invite other clubs and the general public to come join us at 6:45 to be part of this live event. Drinks and snacks will be provided.

Details:

6:45 – 8:00 pm in Oberkotter 1, in the Oberkotter Center for Health and Wellness

Cedar Crest College

100 College Drive

Directions: <https://www.cedarcrest.edu/directions.shtm>

Campus Map: <https://www.cedarcrest.edu/campusmap.shtm>

ACS
Chemistry for Life®

#ACSPIB NATIONAL CHEMISTRY WEEK

VOYAGE TO MARS

RED PLANET CHEMISTRY

LEARN MEET SHARE

ACS PROGRAM-IN-A-BOX

WHERE	Oberkotter 1, Oberkotter Bldg.	TIME	6:45pm (Come early for food!)
WHEN	Tuesday, October 23 rd , 2018	CONTACT	Cedar Crest College Chemistry

LVACS and the Lehigh Valley Phantoms at the PPL Center in Allentown!



Tickets can now be reserved for the Saturday, January 12th Phantoms vs Hershey Bears.

Ticket cost is \$20

Tickets are limited so reserve now!

Contact Kelley Caflin to reserve tickets
caflinacs@yahoo.com or call 908-319-4426



2018 NCW Illustrated Poem Contest Chemistry is Out of This World

The Lehigh Valley Local Section of the American Chemical Society (ACS) is sponsoring an illustrated poem contest for students in Kindergarten through 12th grade.

Contest Deadline: Wednesday, October 31, 2018

Prizes: ACS Swag and other fun stuff

Contact: Dr. Lindsey Welch (lawelch@cedarcrest.edu)

Winners of the Lehigh Valley Local Section's Illustrated Poem Contest will advance to the National Illustrated Poem Contest for a chance to be featured on the ACS website and to win prizes!

Write and illustrate a poem using the NCW theme, "Chemistry is Out of This World." Your poem must be **no more** than 40 words and in the following styles to be considered:

HAIKU - LIMERICK - ODE - ABC POEM - FREE VERSE - END RHYME - BLANK VERSE

Possible topics related to space chemistry include:

Light	Stars	Atmosphere	Spectrum
Planets	Gases	Supernova	Ultraviolet

Entries will be judged based upon:

- Artistic Merit - use of color, quality of drawing, design, and layout
- Poem Message - fun, motivational, inspiring about yearly theme
- Originality Creativity - unique, clever and/or creative design
- Neatness - free of spelling and grammatical errors

Contest rules:

- All poems must be no more than 40 words, and in one of the following styles to be considered: Haiku, Limerick, Ode, ABC poem, Free verse, End rhyme, and Blank verse.
- Entries are judged based upon relevance to and incorporation of the NCW theme, word choice and imagery, colorful artwork, adherence to poem style, originality and creativity, and overall presentation.
- All entries must be original works without aid from others. Poems may be submitted by hand on an unlined sheet of paper not larger than 11" by 14" or scanned and sent via email. Illustrations may be created using crayons, watercolors, other types of paint, colored pencils, or markers. The illustration may also be electronically created by using a digital painting and drawing app on a computer, tablet, or mobile device.
- The text of the poem should be easy to read and may be typed before the hand-drawn or digital illustration is added, or the poem may be written on lined paper, which is cut out and pasted onto the unlined paper with the illustration.
- No clipart or unoriginal images can be used.
- Only one entry per student will be accepted; all entries must include an entry form. If the illustration is created using a digital painting or drawing app, the name of the program must be included on the entry form.
- All illustrated poems and/or digital representations of the poems become the property of the American Chemical Society.
- Acceptance of prizes constitutes consent to use winners' names, likenesses, and entries for editorial, advertising, and publicity purposes.





2018 NCW Illustrated Poem Contest
Chemistry is Out of This World
ENTRY FORM

Please fill out this form and attach it after the poem. All fields are required. Incomplete forms will invalidate the entry.

The deadline for the Lehigh Valley Local Section Contest is October 31, 2018.

Student and Organization Information			
Student Name:			
Student Grade:			
Parent/Guardian Name:			
Parent/Guardian Email:			
Parent/Guardian Address:			
Parent/Guardian City:	State:	Zip:	
School or Sponsoring Group (e.g. Boys and Girls Club or Scout Troop, 4-H, etc.):			
Teacher Name:			
Teacher Email:			
School Address:			
School Address 2:			
School City:	State:	Zip:	
Please send any follow up for the student to the <u>parent</u> <input type="checkbox"/> or <u>school</u> <input type="checkbox"/> address.			
Illustration Type (Check one)			
Hand-drawn art <input type="checkbox"/>		Digitally created art <input type="checkbox"/>	
If the poem was digitally created, please name the software used in the box below:			
Judging Category by Grade (Check one)			
K-2 <input type="checkbox"/>	3-5 <input type="checkbox"/>	6-8 <input type="checkbox"/>	9-12 <input type="checkbox"/>
FOR LOCAL SECTION USE ONLY			
Local Section Name:	Lehigh Valley		
NCW Coordinator Name:	Dr. Lindsey A. Welch		
NCW Coordinator Email/Phone:	lawelch@cedarcrest.edu (610) 606-4666 ext. 3615		



2018 LVACS OFFICERS

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