2019 Edgar Fahs Smith Memorial Lecture
Dr. Amy Rosenzweig
Weinberg Family Distinguished Professor
of Life Sciences
Northwestern University

ADVANCE NOTICE

APRIL MEETING
Thursday, April 15, 2019
6:00 PM

Student Scholastic Achievement Awards
Presenter: Dr. Loyd Bastin

Department of Chemistry, Widener University
Latham Hall
Chester, PA 19013

See the APRIL issue of the Catalyst for details,
call the Section Office at (215) 382-1589 or email PhilaACS@gmail.com.
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Advertising: Victor Tortorelli, vtortorelli@ursinus.edu
The Philadelphia region has been enjoying a steady increase in the times between sunrise and sunset. The spring season will be here before we all know. During these winter months the Section has been working hard toward making the 2019 calendar year a memorable one and a number of positive things have happened. From January 25-27, seven members of the Section attended the 2019 ACS Leadership Development Institute in Atlanta, GA. (See photo below). These were two very intense and full days of programming that focused on bringing together the upcoming Local Section and Divisional leaders to learn and share best practices in effective leadership. There was an emphasis that the ACS is a volunteer organization and it is through the efforts of our volunteers that great things happen. The Philadelphia Section had broad representation covering the areas of: Local Section Leaders, Career Consultants, Younger Chemists, and a national committee chair. My thanks to all of those who attended; you made the Philadelphia Section ACS proud!

The February Section meeting was another co-sponsored event between the Local Section and the Chemical Consultants Network (CCN); one of the Section’s topical groups. In addition to the networking opportunities, attendees were treated to an outstanding lecture by Dr. Patrick Lam. If you do not know Patrick personally you probably are indirectly familiar with his work from watching television. If you have ever seen a commercial for Eliquis® (Apixaban) that is Patrick’s work from his days at Bristol-Myers Squibb.

On March 21st the Section will be holding the Edgar Fahs Smith lecture, in association with the University Of Pennsylvania Department of Chemistry. This lecture is one of the highlights of the Local Section’s yearly programming. We are pleased to welcome Dr. Amy Rosenzweig of Northwestern University as this year’s lecturer. Details of this event are available on the website and in this issue of the Catalyst. Please pass the word of this event to your friends and colleagues and encourage them to attend this event.

In the not too distant future the Section will be recognizing those who have achieved chemical science awards in pre-college teaching undergraduate teaching. If you know of students or educators who are deserving of this recognition please do not hesitate to nominate them. The calls for nominations are in this issue of the Catalyst.

I encourage the members of the Section to take advantage of the increased hours of daylight to come out and join us as we celebrate and advance the field of chemistry to the greater Philadelphia region.
NEWS ATOMS—Alan Warren

Derrick C. Wood will receive the James Bryant Conant Award in high school chemistry teaching, sponsored by the ACS Chemical Education Division, at the Orlando spring meeting. He is a chemistry teacher at Conestoga High School.

DEATHS

Yuanjie Ye, pharmaceutical chemist, November 3, 2018 at 67. He was employed by Vitae Pharmaceuticals and held several patents on steroid compounds used in the field of dermatology.

Alan Campbell Knight, retired research chemist, November 17th at 96. Following service in the Army in WWII he obtained his doctorate in chemistry and joined DuPont in 1950. He worked on the development of polyethylene and nylon intermediates as well as Teflon® and Lucite®. He retired in 1970.

James G. de Benedictis, retired chemical engineer, January 26, 2019 at 96. After serving in the US Army Air Corps in WWII he completed his education and specialized in industrial water treatment. He held various positions with the Tennessee Valley Authority, Culligan and Puro-lite.

ACS CAREER CONSULTANTS

Would you like to speak to a local ACS Career Consultant? The Philadelphia Section career consultants can provide one-on-one career advice, resume reviews, or mock interviews. Please send an email request toacsphillycareerservices@gmail.com to set up an appointment.
MARCH MEETING

THE PHILADELPHIA SECTION, AMERICAN CHEMICAL SOCIETY
AND
THE DEPARTMENT OF CHEMISTRY, UNIVERSITY OF PENNSYLVANIA

PRESENT THE

2019 EDGAR FAHS SMITH MEMORIAL LECTURE

Biological Methane Oxidation

Dr. Amy Rosenzweig
Department of Chemistry
Northwestern University

Thursday, March 21, 2019
6:00 PM
Carolyn Hoff Lynch Lecture Hall

University of Pennsylvania
Department of Chemistry
34th and Spruce Streets
Philadelphia, PA 19104-6323

Dinner Cost and Registration:
https://www.eventbrite.com/e/edgar-fahs-smith-lecture-tickets-53981603429

BOARD OF DIRECTORS MEETING

4:00 – 6:00 PM
University of Pennsylvania, Chemistry Building
Room 117 (first floor Faculty Conference Room)
**SPEAKER’S ABSTRACT AND BIOGRAPHY**

**Dr. Amy Rosenzweig**  
Weinberg Family Distinguished Professor of Life Sciences in the Departments of Molecular Biosciences and of Chemistry at Northwestern University

**Biological Methane Oxidation**

**Abstract:** Methanotrophic bacteria oxidize methane to methanol in the first step of their metabolic pathway. Whereas current catalysts that can selectively activate the 105 kcal mol\(^{-1}\) C-H bond in methane require high temperatures and pressures, methanotrophs perform this chemistry under ambient conditions using methane monooxygenase (MMO) enzymes. In most methanotrophs, this chemically challenging reaction is catalyzed by particulate methane monooxygenase (pMMO), a copper-dependent, integral membrane enzyme. pMMO is composed of three subunits, PmoA, PmoB, and PmoC, arranged in a trimeric complex. Despite extensive research and the availability of multiple crystal structures, the location and nature of the pMMO copper active site remain controversial and the details of dioxygen activation and methane oxidation have not been elucidated. Studies are further complicated by issues with retaining enzymatic activity and uncertainties regarding the identity of the native reductant and the possible involvement of additional protein components. Progress toward addressing these questions will be reported.

**Biography:** Amy Rosenzweig is the Weinberg Family Distinguished Professor of Life Sciences in the Departments of Molecular Biosciences and of Chemistry at Northwestern University. She received a BA in chemistry from Amherst College and a PhD in inorganic chemistry from Massachusetts Institute of Technology. She is a fellow of the American Academy of Arts and Sciences and a member of the National Academy of Sciences. Her laboratory uses biochemical, biophysical, X-ray crystallographic, spectroscopic, and omic approaches to attack problems at the forefront of bioinorganic chemistry. Areas of interest include biological methane oxidation, metal uptake and transport, and oxygen activation by metalloenzymes.
Herb Bassow Would be Proud!

The 2018 Herb Bassow Memorial Demonstration Day was held at Temple University’s Beury Hall on December 12, 2018 from 9:30 AM to 1:30 PM. It was co-sponsored by the Philadelphia Section of the ACS, and Temple University College of Science and Technology’s Department of Chemistry and TUTeach division. Doctors Jaskiran Kaur and Daniele Ramella from Temple University’s Department of chemistry coordinated the event.

It started with a 90-minute demonstrative show of chemical principles followed by two hours of hands-on activities in the General Chemistry Laboratories of the Chemistry Department. Groups of 20 students from middle and high schools rotated through 5 different activities and lunch. From the freezing powers of liquid nitrogen to the explosive combustion of hydrogen, from the usefulness of colligative properties to the deliciousness of homemade ice cream, and from the delicate perforation of a balloon with a skewer to the pyrotechnic release of the calories of a single gummy bear, students were able to observe the behavior of chemicals rarely seen outside the lab and understand some physical and chemical processes common in everyday life. The interactive demonstrations were led by Jaskiran Kaur, Daniele Ramella, Alan Bronstein, Robert Farber and David Katz. Special thanks go to the almost 30 Temple University undergraduates who volunteered to lead activities and chaperone the groups around Beury Hall. Imploding cans, frozen cranes, lava lamps, balloons on sticks, chromatography T-shirts, flaming vacuums and about 10 lbs of liquid nitrogen ice cream were among the activities students carried out and learned from, under the supervision of Temple University’s undergraduate volunteers.

The event, limited to 300 students due to space limitations, was full. Almost 300 participants from 8 schools in the Philadelphia and Cheltenham school districts, chaperoned by their teachers and some parents, experienced a day of scientific inquiry by safely participating, designing, and conducting thoughtful experiments. The students explored scientific principles while adhering to safety guidelines in a postsecondary environment. Thanks to all the schools who RSVP’d for the events and participated. We hope to see you in similar large numbers once again next year!
CALL FOR ABSTRACTS

YOUNGER CHEMISTS COMMITTEE
19TH ANNUAL POSTER SESSION AND GRAD SCHOOL/CAREER FAIR

Hosted by the American Chemical Society and the Younger Chemists Committee Philadelphia Section

Tuesday, April 9, 2019 6:00 – 9:00 PM
Set up starts at 5:30 PM
The Science and Education Research Center (SERC)
Temple University
1925 N. 12th St., Philadelphia, PA, 19122

For more information or to submit an abstract visit:
https://phillyycc.org/poster-session
or contact Taylor Keller at tmkeller@temple.edu
or the YCC at postersession@PhillyYCC.org
ACS Delaware Section March Event

Dogfish Head Quality Assurance: We Don’t Make the Beer You Drink, We Make the Beer You Drink Better

Ian Farrell
Analytical Chemist
Dogfish Head Brewery

Date: March 16th, 2019
Time: 1:00 - 3:00 PM
Location:
Grey Fox Grille and Public House
140 S State St, Dover, DE 19901
Cost: Free

CLICK HERE TO REGISTER

Originally from Reading, PA, I had an early interest in the sciences, and like most science-minded folks going into college, I wanted to be a medical doctor. After three years of working on unnatural amino acid incorporation into proteins at Franklin & Marshall College, I quickly realized that medicine wasn’t for me, and decided to attend graduate school for chemistry at the University of Pennsylvania. While working under Dr. Barry Cooperman, I helped determine the kinetics of tRNA release from bacterial ribosomes during protein synthesis. After a short stint in the biotech sector making fluorescently labeled tRNAs, and an even shorter stint at SPI Pharma in Lewes, DE, I managed to find my dream job as the “Off-centered Analytical Chemist” at Dogfish Head Craft Brewery where I’ve been for about three years.
2019 CCEW Illustrated Poem Contest
Take Note: The Chemistry of Paper

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

Contest Deadline: April 26, 2019

Prizes: $50.00 for the winner of each grade category
(grades K-2 / grades 3-5 / grades 6-8 / grades 9-12)
Each student who enters will receive a certificate

Contact: Send entries and entry forms to willsmith2@aol.com (email for entry form)

Please send a separate pdf for each entry and entry form. In order to make this project manageable for our volunteer judges, please DO NOT SEND A LONG PDF WITH MULTIPLE ENTRIES AND FORMS ON A SINGLE DOCUMENT.

No submissions outside of pdf format will be accepted.

Winners of the Philadelphia 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 CCEW theme, “Take Note: The Chemistry of Paper.” 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 paper chemistry include:

Bioplastics  Cellularose  Fiber  Lignin
Plastic  Polymer  Pulp  Slurry

Entries will be judged based upon:
Artistic Merit - use of color, quality of drawing, design & 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.
CONTEST OVERVIEW

For this event, high school students are asked to imagine that they are living 25 years in the future and have been invited to write an article for ChemMatters, a magazine for high school students that focuses on the role of chemistry in everyday life. The subject of the article is: "Describe a recent breakthrough or innovation in chemistry (and/or its applications) that has improved the quality of people's lives today." To view a sample ChemMatters magazine visit acs.org, and look under Education:

http://www.acs.org/content/acs/en/education/resources/highschool/chemmatters.html

In addition to the article, students are asked to design a cover for the magazine. The article must be written as if the student is living in the year 2044, looking back at innovations that have occurred since 2019. The innovation must fall into one of the following categories:

- Alternative Energy
- Environment
- Medicine/Health
- New Materials

A few examples of areas where development is expected are: nanotechnology, energy efficiency, pollution prevention, green chemistry, sustainability, intelligent devices for sensing, proteomics, climate models, biopharmaceutical therapies, medical devices and/or implants and new energy sources.

ARTICLES must:

- be written by a team of two or three students; each student may be on only one team.
- be about 1000 words (figure captions are not included in the limit).
- present the chemistry/scientific concepts/ideas/principles behind the innovation.
- describe the innovation and indicate how it has improved people's lives.
- present a "history" of the changes that had to occur over the prior 25 years to develop this innovation.
- include drawings, diagrams, illustrations and descriptions of the chemistry and any technology involved in all key aspects of the innovation.
- cite a minimum of three technical references.
- include a cover design for the magazine. The cover design can be an original computer graphic or a free-hand drawing.

Prizes: $50 for each member of the first place team in each of the four categories. Every student who participates will receive a certificate.

Deadline for submission: MARCH 31st.

Entries must be submitted by email to willsmith2@aol.com.

The Philadelphia Section of the American Chemical Society will select winners to be invited to move forward to Mid-Atlantic Region of the American Chemical Society CHEMAGINATION contest to be held at the University of Maryland, Baltimore County on June 3rd.
You are invited to be a volunteer at ........

The Philadelphia Area Girls 
Enjoying Science™ Mini- 
Conferences for 6th Grade Girls

Help inspire girls’ interest in science and mathematics.

When: Saturday, April 2019  
9:00 AM - 1:30 PM  
Where: Chestnut Hill College  
9601 Germantown Avenue  
Philadelphia, PA 19118

Volunteers are needed to bring an experiment to share with three small groups of girls (4 – 7 students each). Experiment leaders must have a bachelors’ degree in a science. Students are encouraged to be part of the fun and help these experiment leaders.

The Chemists Celebrate Earth Week (CCEW) 2019 theme is “Take Note: The Chemistry of Paper”, focusing on the chemistry of paper. It would be great if you could share an experiment exploring this topic with the girls.

As a result of new PA legislation, all adult volunteers having direct contact with children will need at least two criminal background checks. There is no cost for these checks if you are a long-time PA resident.

For more information and to Register:  
Contact Dr. Kathy Thrush Shaginaw  
(kshaginaw@ccp.edu) and visit  

This program is made possible through generous support from the Philadelphia Section of the American Chemical Society and its Women Chemists Committee (ACS WCC), the Philadelphia Chapter of the Association for Women in Science (AWIS), and the American Association of University Women (AAUW) Makefield Area Branch, PA, Inc., the Science History Institute, WWI Scientific, Fisher Scientific, Merck & Co, Inc., and the employers of the women scientists.
Notice is hereby given that the ACS Philadelphia Section invites its members as well as Regional and Topical Groups to nominate candidates for the 2019 ACS Philadelphia Section Award.

This Award shall be presented “to one member of the Section, or in exceptional circumstances to two members of the Section jointly, who by conspicuous scientific achievement has/have made important contributions to the field of chemistry and thereby aided the public appreciation of the profession.” (ACS Philadelphia Section Bylaw X, §1.) Any member of the ACS Philadelphia Section may be nominated. Recent awardees include Donna M. Huryn (University of Pennsylvania), Anthony W. Addison (Drexel University) and Marsha I. Lester (University of Pennsylvania).

**INSTRUCTIONS FOR SUBMITTING NOMINATION**

1) Nominators should provide a CV of the nominee showing education; employment and/or academic history; a list of publications, presentations and patents; and a record of other accomplishments pertinent to consideration for this award.

2) One or two seconding letters (at least one of which should be from a person in an organization other than that of the nominee) should be requested in support of the nomination.

3) Nominators and seconders should be identified with addresses, e-mail and telephone numbers so that they can be contacted, if necessary, for additional information.

4) Unsuccessful nominees from previous years may be renominated. In fairness to the nominee, however, renominations must be accompanied by an updating of the nominee’s biographical data and a list of accomplishments in order to make the nomination competitive. Unsuccessful nominees who have been considered three years in a row should not be renominated for the fourth year in succession without prior consultation by the nominator with the Chair of the Awards Committee.

Nomination forms are available from the Section office at:

ACS Philadelphia Section  
Department of Chemistry  
University of Pennsylvania  
Philadelphia, PA 19104-6323  
(215) 382-1589; e-mail PhilaACS@gmail.com

The completed packet of nomination materials may be e-mailed to PhilaACS@gmail.com or mailed by April 1, 2019 to the Chair of the Awards Committee at the Section Office address above.
CALL FOR NOMINATIONS
2019 ACS PHILADELPHIA SECTION
AWARDS FOR EXCELLENCE IN PRE-COLLEGE TEACHING

Notice is hereby given that the ACS Philadelphia Section invites its members to nominate candidates for the 2019 ACS Philadelphia Section Awards for Excellence in Pre-College Teaching.

The Awards honor two outstanding science teachers. One Award will be given to a full-time educator involved in teaching science in grades K-8. The second Award will be given to a full-time educator at the secondary level (grades 9-12) who teaches chemistry. Nominees must teach in the geographic territory of the ACS Philadelphia Section (Philadelphia, Bucks, Chester, Delaware and Montgomery Counties in Pennsylvania, and Burlington and Camden Counties in New Jersey).

PLEASE NOTE! Nominations for 2019 will be accepted until March 22, 2019.

INSTRUCTIONS FOR SUBMITTING NOMINATIONS

1) A Nominator Recommendation of not more than 750 words submitted by the nominator according to the guidelines outlined on the Recommendation Form.

2) A current curriculum vitae or resume that includes a list of the nominee’s honors, professional activities, and additional evidence of service to the profession. This must be limited to no more than two pages and the activities listed must have occurred within the past five years.

3) A statement by the nominees of not more than 500 words that describes the nominee’s teaching philosophy or commitment to the profession.

4) At least one, but not more than three, letters of support. One letter, of no more than 400 words must be from the teacher’s current principal or supervisor. Additional letters of support, of no more than 400 words, may be sent by colleagues, members of the ACS who are familiar with the nominee’s achievements, or former students and parents of former students.

5) The total nomination package should not exceed 30 pages.

The nomination package may be e-mailed or sent to:

ACS Philadelphia Section
Department of Chemistry
University of Pennsylvania
Philadelphia, PA 19104-6323
(215) 382-1589; e-mail PhilaACS@gmail.com

The Award Recipient will be honored at our May 2019 Section meeting with a plaque and an honorarium.
CALL FOR NOMINATIONS
2019 ACS PHILADELPHIA SECTION
AWARD FOR EXCELLENCE IN UNDERGRADUATE TEACHING IN THE CHEMICAL SCIENCES

Notice is hereby given that the ACS Philadelphia Section invites its members to nominate candidates for the 2019 ACS Philadelphia Section Award for Excellence in Undergraduate Teaching in the Chemical Sciences.

This award will honor an outstanding, full-time educator involved in teaching an undergraduate course in the chemical sciences (i.e., chemistry, biochemistry). Nominees must teach in an institution that is within the geographical territory of the ACS Philadelphia Section (Philadelphia, Bucks, Chester, Delaware and Montgomery counties in Pennsylvania, and Burlington and Camden counties in New Jersey).

PLEASE NOTE! Nominations for 2019 will be accepted until March 22, 2019.

Nominations should consist of the following:

1) A letter of nomination.
2) The nominee’s resume.
3) Two letters of recommendation.
4) The total nomination package should not exceed 30 pages.

The nomination package may be e-mailed or sent to the Chair of the Awards Committee at:

ACS Philadelphia Section
Department of Chemistry
University of Pennsylvania
Philadelphia, PA 19104-6323
(215) 382-1589; e-mail PhilaACS@gmail.com

The Award Recipient will be honored at our May 2019 Section meeting with a plaque and an honorarium.
Major Symposia
- Combating the Opioid Crisis with Chemistry
- Atmospheric and Environmental Chemistry
- Nanotechnology
- Spectroscopy and Homeland Security
- Photonic Materials
- Optimization Methods in Chemistry
- Food Chemistry
- Outstanding Young Investigators in Organic Chemistry

Undergraduate and Employment Programming
- Career Pathways and Resume Review
- Panel Discussions: Recent Chemistry Grads Share Their Experiences
- Chemistry Jobs - Employers’ Perspectives
- Challenges for International Chemistry Students and Professionals
- A Special Undergraduate Luncheon with Chemistry Trivia and Prizes

Special Women Chemist Committee Programming
- Leadership Workshop: Collaborating Across Boundaries
- Panel Discussion: Science Policy & Government - A Bridge Between Research and the Public, and a Path for Non-Traditional Chemists

Chemagination 
A competition for High School Students

Programming for Post-Secondary Educators
- Technology in the Undergraduate Classroom
- Humanizing Science: The Key Roles of Mentoring and Building Community

Session for Primary and Middle School Teachers
- Bringing Forensic Science Back to Your Classroom
CAREER DEVELOPMENT

Being a part of one of our teams can help you develop organizational and meeting skills as well as help you to network with people from the largest area companies. Public Relations, such as sending out meeting notices and press releases, can help you develop a network and help you get noticed!

All committees are looking for new members and several are looking for “take charge” chairs. Some, like the Teller’s Committee, involve minimal work—one night per year and pizza provided. Others, like positions on Communications or Social Committees, involve one or two hours per month.

Committee details can be found at:

www.membership.acs.org/p/philadelphia
or by calling the Philadelphia Section Office (215) 382-1589.

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<td>Philadelphia ACS Section Meeting, <em>Edgar Fahs Smith Lecture: Biological Methane Oxidation</em> by Dr. Amy Rosenzweig (Northwestern University)</td>
<td>Chemistry Department - University of Pennsylvania Carolyn Hoff Lynch Lecture Hall 34th and Spruce Streets Philadelphia, PA 19104 <a href="https://www.eventbrite.com/e/edgar-fahs-smith-lecture-tickets-53981603429">https://www.eventbrite.com/e/edgar-fahs-smith-lecture-tickets-53981603429</a></td>
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<td>Monday, April 15th 6:00 PM</td>
<td>Philadelphia ACS Section Meeting Student Scholastic Achievement Award Banquet</td>
<td>Widener University See the March <em>Catalyst</em> for details</td>
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Please check the individual websites for additional updated information

All content submissions are due on the 15th day of the month prior to publication