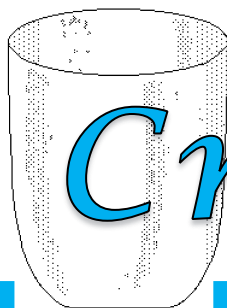


The Crucible



Volume CIII, No. 9

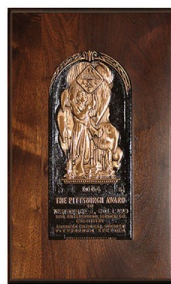
May 2018



Call for Nominations

Pittsburgh Section of the ACS Pittsburgh Award

The Pittsburgh Award was established in 1932 by the Pittsburgh Section of ACS to recognize outstanding leadership in chemical affairs in the local and larger professional community. This Award symbolizes the honor and appreciation accorded to those who have rendered distinguished service to the field of chemistry. The Award consists of a plaque presented annually at a section dinner. Members of the Pittsburgh Section, or in exceptional cases, nonmembers, who have done work worthy of recognition toward increasing chemical knowledge, promoting the chemical industry, benefiting humanity, or advancing the Pittsburgh Section, are eligible for consideration.



The Distinguished Service Award

The Distinguished Service Award was established in 2007 by the Pittsburgh Section of the ACS to expand and replace the predecessor Chairman's Award of the section. Both recognize outstanding volunteer service to the Section. The Award, consisting of a plaque, is presented annually at a Section dinner, which is open to the public. Members of the Pittsburgh Section, past or present, who have provided outstanding service in advancing the Pittsburgh Section, are eligible for consideration.

*Nominations for both awards are solicited from the membership of the Pittsburgh Section. Please include your contact information, the nominee's contact information, any supporting letters, and the nominee's CV. More information about the awards, including information on past winners can be found on the ACS website:

<http://www.pittsburghacs.org/awards/pittsburgh-award/>

<http://www.pittsburghacs.org/awards/distinguished-service/>

***DEADLINE**

Please send all nominations to Pittsburgh Section Chair-Elect, Dr. Bradley Davis, bdavis@waynesburg.edu, by **Wednesday, August 15, 2018**. For more information about the nomination process, contact Bradley at 724-852-3376.

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50-Year, 60-Year, and 70-Year Membership Awards

Each year the American Chemical Society honors those individuals who have achieved 50, 60, or 70 years of continuous membership. Each 50-year, 60-year, and 70-year member receives a certificate and badge for admission to any National ACS Meeting.

**The following 8 Members of the Pittsburgh Section celebrate
50 years of membership in the American Chemical Society during 2018:**

Mr. Edward J. Bauer	Dr. Kenneth G. Migliorese
Mr. John E. Bem	Mr. Lawrence M. Monroe
Dr. William R. Hall	Dr. Richard P. Noceti
Dr. Marvis E. Hartman	Mr. Louis F. Pochet
Bro. Eric Henderson	Dr. Clifford K. Schoff
Dr. Ernest L. Lawton	Dr. James D. Smith

**The following 4 Members of the Pittsburgh Section celebrate
60 years of membership in the American Chemical Society during 2018:**

Dr. Shiao H. Chiang	Dr. Sidney H. Metzger
Dr. Robert B. LaCount	Dr. Henry J. Wells
Dr. Mildred M. Maguire	

**The following 4 Members of the Pittsburgh Section celebrate
70 years of membership in the American Chemical Society during 2018:**

Mr. Robert J. Allison Mr. Lester Berkowitz

The newly named Fifty-Year, Sixty-Year, and Seventy-Year Members
will be honored at a separate awards lunch.

Annual Awards Dinner

Monday, May 14, 2018

Co-Sponsored by

THE SOCIETY FOR ANALYTICAL CHEMISTS OF PITTSBURGH



AND



THE PITTSBURGH SECTION, AMERICAN CHEMICAL SOCIETY



Duquesne University Ballroom
(Student Union – 4th Floor)

Social Hour – 5:30 P.M.

Dinner – 6:30 P.M.

Entrée Choices: Chicken Kiev

or

Stuffed Zucchini with Artichokes, Peppers & Goat Cheese

Cost of Dinner for members and/or guest - \$15.00 per person.

Each member may bring one guest.

Dinner reservations: Please contact Amy Bovino, SACP Administrative Assistant at bovino@pittcon.org or 412-825-3220 ext. 212 to make your dinner reservation. If you have any dietary restriction, please note when you make your reservation.

Parking: For parking, please use the Duquesne University Parking Garage on Forbes Avenue. Please bring your parking ticket to the registration desk for a parking validation sticker.

ACS-Energy Technology Group Meeting

May Meeting

Thursday, May 10, 2018

[An Evaluation of Fracture Growth and Gas/Fluid Migration
as Horizontal Marcellus Shale Gas Wells
are Hydraulically Fractured in Greene County, Pennsylvania](#)

Richard Hammack

In 2012, when hydraulic fracturing was part of the national conversation, there were unanswered questions about how or if hydraulic fracturing might impact underground sources of drinking water, and EPA would not publish their findings on this topic for another four years (Dec 2016). In 2012, the National Energy Technology Laboratory (NETL) collaborated with the University of Pittsburgh, West Virginia University, the US Geological Survey and an anonymous industry partner to determine fracture growth and gas/fluid migration at a hydraulically fractured site in Greene County, Pennsylvania that contained six horizontal Marcellus wells. The results of this 2-year-long [study](#), which were publicly released in 2014, will be presented.

Richard Hammack is a research physical scientist in the National Energy Technology Laboratory's Geological and Environmental Systems Directorate. In this capacity, Mr. Hammack directs multidisciplinary field research pertaining to the safe and efficient development of domestic oil and gas resources and to the safe, permanent storage of CO₂ in underground reservoirs. Mr. Hammack's team partners with industry, state and Federal agencies, and academia to answer questions that the public has about the safety and environmental impact of unconventional oil and gas development that uses multi-level horizontal drilling and hydraulic fracturing to release hydrocarbon resources from previously impermeable rock. In addition, Mr. Hammack's team is currently developing and demonstrating next generation geophysical tools to: 1) map CO₂ in the sequestering formation and 2) provide frequent surveillance of underground drinking water sources for CO₂ and brine incursions. Prior to joining NETL, Mr. Hammack worked as a research geochemist for the U.S. Bureau of Mines where he developed methods for treating a wide variety of wastewaters from the mining, metallurgical, and oil and gas industries. In his early Bureau of Mines career, Mr. Hammack worked as an exploration geochemist and performed mineral assessments on Federal and Tribal Lands. Mr. Hammack holds a B.S. degree in geology and a M.S. degree in geochemistry from the West Virginia University.

Cost is \$26, walk-ins are welcome but reservations with dinner selection are preferred.

Dinner Menu: Soup, salad and choice of: Lasagna, Chicken Romano, Spaghetti w/meatball, Manicotti. Also, included are coffee, tea, or soft drinks.

Please RSVP by Monday May 7, with names of those planning to attend to: ACS.ETG@gmail.com

Check In: 6:00-6:30 PM, **Dinner:** 6:30-7:30 PM, **Technical Presentation** 7:30-8:30 PM

Location: [Lombardozi's Restaurant](#) - Bloomfield, 4786 Liberty Ave, Pittsburgh, PA 15224

Councilor Report on: ACS SPRING 2018 NATIONAL MEETING – New Orleans, LA

Four of ACS Pittsburgh Section Councilors were in attendance in New Orleans.

The meeting attracted approximately 16,585 attendees and an exposition of 370 booths.

The Committee on Nominations and Elections presented to the Council the four nominees for selection as candidates for President-Elect, 2019. The Council selected Luis A. Echegoyen and Thomas R. Gilbert as Candidates for the 2019 President-Elect. These two candidates, along with any candidates selected via petitions, will stand for election in the Fall National Election.

The Committee on Nominations and Elections announced the selection of the following candidates for Director-at-Large for 2019-2021 terms: Frank D. Blum, Lee H. Latimer, Ingrid Montes, and Angela W. Peters. The election of two Directors-at-Large from among these four candidates and any selected via petition will be conducted in the fall.

The Committee on Nominations and Elections announced that Susan M. Schelble will fill a vacancy on the Committee on Committees (ConC) for a full two-year term (2018-2019).

The Committee on Meetings & Expositions reported that the total meeting registration was 16,585. Of these, 8,470 were regular registrations, 877 were exhibitors, 6,432 were students, 301 were exposition only, and 505 guests. The exposition had 270 booths with 231 companies. The meeting had over 13,000 papers presented.

The Council approved Petition on the Composition of Society Committees which will change the requirements for Councilors on Society Committees from at least two thirds (2/3) to a majority, and remove the requirement the Chair and Vice-Chair of a Society Committee must be Councilors.

On the recommendation of the Committee on Committees, that the Committee on Ethics be continued; and that the committees on Publications and on Younger Chemists be continued contingent on approval of the Board of Directors.

The Council voted on the recommendation of the Committee on Budget and Finance to set the member dues for 2019 at the fully escalated rate of \$175. This rate is established pursuant to an inflation-adjustment formula in the ACS Constitution and Bylaws.

In 2017 ACS generated a Net from Operations of \$28.6 million, which was \$4.8 million higher than 2016. Total revenues were \$553.1 million, increasing 5.0% or \$26.4 million over 2016. Expenses ended the year at \$524.5 million, which was \$21.6 million or 4.3% higher than prior year. This was attributable to strong performance from the Society's Information Service units (CAS and ACS Publications) and a continued emphasis on expense management across the ACS.

The ACS ended 2017 with over 150,000 members. While this means that ACS remains the world's largest scientific society, this number represents a continuing decline in overall membership for the sixth year in a row.

The Board of ACS approved a resolution that recognizes and applauds the United Nations for proclaiming 2019 as the International Year of the Periodic Table, and pledged that the Society will do its utmost to recognize and participate in events celebrating this important milestone and achievement.

Respectfully submitted,
Pittsburgh Section Councilors
Richard S. Danchik (Author)
Kim Woznack
Robert Mathers
Ali O. Sezer

Congratulations to our 2018 PRSEF Winners!

On March 23-24, the 79th Pittsburgh Regional School Science and Engineering Fair was held at Heinz Field. The ACS Pittsburgh Section supports 2 project awards. From the Intermediate Category, 8th grader Emma Dziezgowski from St. Thomas More School won for her project "Which Beverage Has the Most Electrolytes?" Her teacher is Cathy Borecky.



Left: ACS Pittsburgh Section Member Larry Fitzgerald.
Right: Intermediate Winner Emma Dziezgowski

From the Senior Category, 9th grader Prateek Adurty from Sewickley Academy won for his "project Bio-fuel Energy Optimization Using Calorimetry." His teacher is Ron Kinser.



Left: Senior winner Prateek Adurty
Right: ACS Pittsburgh Section Chair-Elect Bradley Davis

2018 Tripartite Symposium



Molecular Gastronomy – Science You Can Eat and Drink!

If you didn't come, you missed one of the best Tripartite Symposia in many years on Saturday, April 7 at Carlow University. It was also the tastiest. There were 6 presenters who discussed Modernist Cuisine and Molecular Gastronomy. Each provided tasty samples of their work! There were 85 people in attendance!



There was also an Fe Chef competition. The four four-member ACS Student Chapters selected to compete were Carlow University, Duquesne University, University of Pittsburgh, and Waynesburg University. Each team gave a 5-minute presentation explaining the various molecular gastronomy techniques they used in the dish they prepared.



Thank you to ACS Pittsburgh Section Directors and Carlow University Chemistry Professors Monique Hockman and Dave Gallaher for all their hard work in organizing!

2018 Tripartite Symposium Program



ACS Local Section
Pittsburgh



Molecular Gastronomy – Science You Can Eat and Drink!



Molecular Gastronomy: A Spoonful of Context Helps the Chemistry Go Down

Subha R. Das

Associate Professor, Department of Chemistry
Carnegie Mellon University

Abstract

The ability to alter and customize the texture and appearance of food and edible ingredients has long been possible through advances in food science and technology. Current molecular or modernist cuisine or the popular misnomer, 'molecular gastronomy' that has burgeoned in recent years, is the adoption of ingredients, techniques and equipment typically used in laboratories. These high impact foods and recipes provide a unique opportunity to use the known science of food and ingredients to engage and teach basic principles and even advanced topics in chemistry and biochemistry. The food context provides a motivating opportunity that directs and sustains learning, as students are motivated to learn when they see the usefulness and relevance of what they are learning. Teaching through the real-world context of cooking permits one to apply chemistry and biochemistry to adapt and develop novel recipes and food presentations. The talk will include some demonstrations and highlights from the Kitchen Chemistry Sessions course created by Das.

Biography

Subha R. Das completed his PhD at Auburn University on the synthesis of nucleosides as antiviral agents and was an postdoctoral research fellow at the University of Chicago, working on the molecular mechanisms of RNA based enzymes. Over the years, the long hours spent on research and a deep dissatisfaction with cardboard offerings that passed as pizza in the trenches of academia, led him to hone his subsistence skills to maximize flavor in minimal time. Drawing on this and advances in molecular gastronomy, Das created The Kitchen Chemistry Sessions - courses to teach chemistry through the real-world context of food, cooking and molecular cuisine. An associate professor in the Department of Chemistry at Carnegie Mellon University, Das's research interests lie in the chemistry of nucleic acids and their applications to biochemistry and nanobiotechnology. His laboratory is engaged in biochemical and biophysical analyses of lariat debranching enzyme and splicing that is funded by the NIH and the synthesis and applications of polymer-DNA and RNA hybrids and nanoparticles with novel architectures. His educational goals include communicating and advancing science, particularly chemistry, by making it by making it palatable to a broader audience.



Michael Foglia is Director of Product Development and Innovation at Wigle Whiskey and Threadbare Cider and Mead here in Pittsburgh. Michael graduated from Davidson College in 2011 with a Bachelor's of Fine Arts before earning a Master's in Food Studies from Chatham University in 2016. Michael's Liberal Arts background helps him to navigate the interdisciplinary nature of Product Development. He is looking for love in all the wrong places.



Michael Lynch operates as a Distiller and Distillery Engineer at Wigle Whiskey. Michael graduated from the University of Pittsburgh in 2017 with a Bachelor of Science degree in Chemical Engineering. Michael has always been fascinated with chemical processes and enjoys the blend of mathematics and creativity required to formulate and produce quality spirits. He has recently found love in a wrong place.

Abstract

Whiskey, generally defined as a high-proof spirit distilled from grain and aged in oak cooperage, is one of the fastest growing spirits worldwide. A common way to categorize the diversity of whiskeys is to focus on the region in the world where the whiskey was distilled and aged. The idea that a geography influences the flavors of finished products is known as terroir. The concept of terroir, as it relates to whiskey, is mostly concerned with production methods: the grains that make up the mash bill and the manner in which the spirit was aged.

We designed an experiment to test how microclimates of different farms affect the raw grain and ultimately the finished whiskey. We sourced rye grain from six different farms in the US and Canada and analyzed the raw grain. We then processed the grain into rye whiskey and analyzed the new-make whiskey (straight off of the still) and will analyze each finished whiskey after 2 years of aging. The initial results that we gathered confirm that geography and climate has a major impact on qualitative aspects of the grain. Rye from Minnesota contained 14% more protein than the next closest sample, which came from one of our regular producers in Avella, Pennsylvania. There is also evidence that certain flavor contributors, Isobutanol and Iso-Amyl, are possibly regionally specific.

Casey Renee

Pastry Chef, Ace Hotel



Abstract:

I will explain the importance of hydration when working with hydrocolloids in order to effectively and efficiently manipulate the product. For my demonstration, I will show on stage how I have learned the best way to hydrate and incorporate gelatin into cheesecake to stabilize an aeration. It is something I have never seen in a kitchen before, but I had an end goal that I wanted, and that was the taste of a cheesecake, with the mouth feel and lightness of a mousse.

Biography:

Casey's a Pittsburgh native who was raised in the city's South Hills neighborhood. Though she worked in restaurants growing up, Casey originally pursued a different path professionally after earning a degree in advertising and radio broadcasting from Point Park University. After three years working in advertising she began studies at New York City's Natural Gourmet Institute, graduating in 2011.

While living in New York, Casey dove headlong into the world of professional cooking and joined the team at the lauded Momofuku Noodle Bar. It was here that she was first introduced to the pastry side of the kitchen. In addition to her responsibilities at the restaurant, Casey continued her culinary education with an apprenticeship at Brooklyn butcher shop, The Meat Hook, which is co-owned by butcher/restaurateur and Pittsburgh native, Brent Young. Here, the two fellow Pittsburghers formed a fast friendship. Brent would eventually partner with Ace Hotel to help open Whitfield in Dec. 2015, and recruited Casey as part of the team.

Following Momofuku Noodle Bar, Casey then moved to the Michelin two-starred Momofuku Ko, where she became more involved in pastry. Deciding her passion really lay in sweets, not savory, Casey became a member of the pastry team at the one-star Michelin restaurant, Del Posto, working under the tutelage of acclaimed Executive Pastry Chef, Brooks Headley. She earned the title of Pastry Sous Chef before returning to her hometown to open Whitfield.

Casey's accolades include being a 2015 selection for *Pittsburgh Magazine's* "Outstanding in the Field" culinary honor, and she is a 2017 and 2018 semifinalist for the James Beard Foundation's award for "Outstanding Pastry Chef." When she's not in the kitchen, Casey can be found out exploring the outdoors, or at home relaxing with friends, family and her cat.

Adam Henry

Co-owner and Cocktail Director at Hidden Harbor Tiki Bar in Squirrel Hill

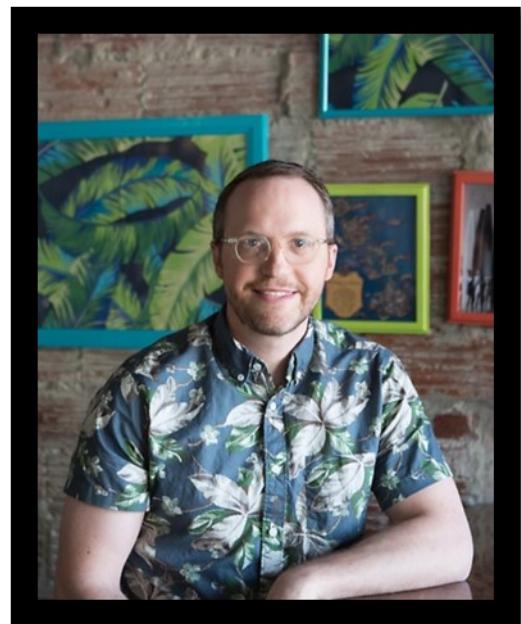
Abstract

Adam will discuss and demonstrate Hidden Harbor's adaptations of select molecular techniques, which largely arose out of kitchens, in the creation of cocktails.

(Specifically, I am tentatively planning on demonstrating the making of cocktail "Dippin' Dots" using liquid nitrogen and the spinning of dehydrated liqueurs into cotton candy, but we will need to discuss logistics for both of these.)

Biography

An attorney by training, Adam was named one of Pittsburgh Magazine's "Brainiest Bartenders" in 2014 for his weekly experiments in tiki and molecular cocktails while moonlighting on weekends at the Independent. At Hidden Harbor, opened in January 2016 and since named one of the 12 Best Tiki Bars in America, Adam's bar team employs molecular techniques like clarification, cryo-muddling, and spherification to deliver fresh reinterpretations of classic tiki and tropical cocktails every Wednesday as part of the bar's special "Weird Science Wednesday" menu.

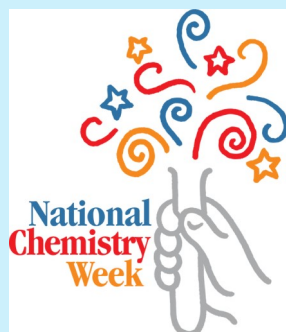


Kevin Sousa

Executive Chef/Owner Superior Motors Restaurant

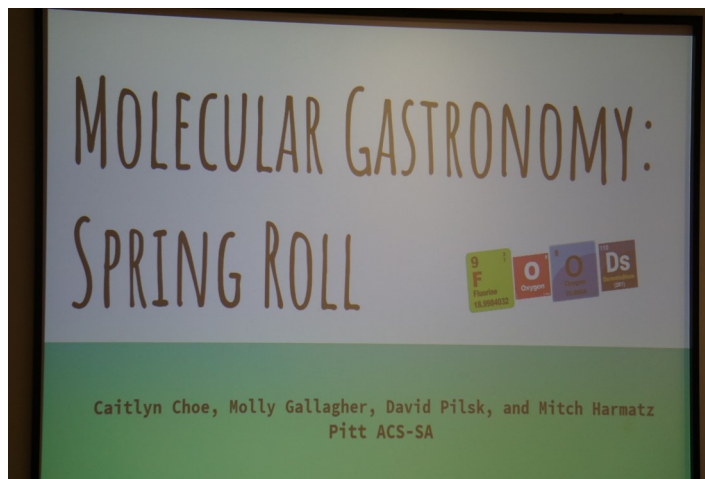
Abstract:

Modern cooking techniques that feature local and seasonal food items will be discussed and demonstrated. Familiar flavors will be presented in modern ways by manipulating the texture and appearance to create an entirely new experience.



National Chemistry Week 2018 will be celebrated the week of October 21-27, 2018 with the theme, "Chemistry is Out of This World" and will focus on chemistry of and in outer space. Here in Pittsburgh we will celebrate our 20th anniversary of NCW celebrations at the Carnegie Science Center on Friday and Saturday, October 26-27. Look for more details in the fall issues of The Crucible.

2018 Tripartite Symposium



Business Directory

Services

Services

Services

Pittsburgh Section Officers

Chair

Brad Davis

724-852-3376

bdavis@waynesburg.edu

Secretary

Matt Baker

5626 Beacon Street

Pittsburgh, PA 15217

mbaker1@andrew.cmu.edu

Treasurer

Amy Rupert

350 Sunset Rd.

Pittsburgh, PA 15237

treasurer@pittsburghacs.org

Crucible Deadline

The deadline for items submitted to The Crucible is the 15th of the month prior to publication. For example, all items for the August 2018 issue must be to the editor by July 15, 2018.

Volunteers Needed!

There are a number of volunteer opportunities in the Pittsburgh ACS section! If you are interested in volunteering, please contact Heather Juzwa at hjuzwa@shimadzu.com!



Society for Analytical Chemists of Pittsburgh CALLING NEW MEMBERS

Dues Only \$20.00, Call the SACP

Administrative Assistant at

412-825-3220 Ext. 212 **Right Now!**

The Crucible

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Stay up-to-date on all the happenings of the Pittsburgh Section ACS

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American Chemical Society

Spectroscopy Society of Pittsburgh

- Professional Networking within the Spectroscopy Community
- Monthly Symposia by Prominent Researchers
- Promoting Science Education



To Join Call Amy: 412-825-3220 ext 212

The Crucible

A newsletter of the Pittsburgh Section of the American Chemical Society

124 Moffett Run Rd.

Aliquippa, PA 15001

Change of Address

If you move, notify the American Chemical Society, 1155 Sixteenth Street, N.W., Washington, D.C. 20036.

To avoid interruption in delivery of your CRUCIBLE, please send your new address to Traci Johnsen, 124 Moffett Run Rd., Aliquippa, PA 15001. Allow two months for the change to become effective.

Pittsburgh Area Calendar

Thursday, May 10

Pittsburgh ACS Energy Technology Group

“An Evaluation of Fracture Growth and Gas/Fluid Migration as Horizontal Marcellus Shale Gas Wells are Hydraulically Fractured in Greene County, Pennsylvania”

Richard Hammack

[Lombardozi's Restaurant](#) - Bloomfield, 4786 Liberty Ave, Pittsburgh, PA 15224

Monday, May 14

Pittsburgh ACS and the Society for Analytical Chemists of Pittsburgh

Annual Awards Dinner

Duquesne University, Power Center Ballroom, Student Union 4thFloor, Pittsburgh, PA