



# The Crucible

www.pittsburghacs.org

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September 2017



## 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/>

### NOMINATION DEADLINE - SEPTEMBER 15, 2017

Please send questions regarding the nomination process and all nominations to Pittsburgh Section Chair-Elect, Dr. Kristi Kauffman, [kristi.kauffman@ppg.com](mailto:kristi.kauffman@ppg.com), by September 15, 2017.

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# Society for Analytical Chemists of Pittsburgh



## SEPTEMBER MEETING

**Monday, September 11, 2017  
6:30 PM, Duquesne University**

### *“Insight into the Reactivity of Pterin-Containing Mo Enzyme Models”*

**Partha Basu, Ph.D.**

Indiana University - Purdue University Indianapolis  
Professor of Chemistry

**Abstract:** Pterin containing molybdenum enzymes provide vitality to life processes. Without these enzymes, no phyla of life can sustain. These enzymes catalyze reactions that are important in global cycling of C, N, S, As and Se. In general, the substrate transformation involves transfer of an oxygen atom with concomitant transfer of two electrons. Such oxygen atom transfer (OAT) reactions are also important in industrial processes such as epoxidation of olefins. Using suitable model compounds, we have probed details of reactivity of these molecules. Mass spectrometry has played a pivotal role in deciphering the details. This work led to a two-step process for oxygen atom transfer reactions, and the rate limiting steps can be altered via molecular design. This talk will highlight the use of mass spectrometry in developing an understanding of this fundamental reactivity and dynamics of molybdenum complexes.

**Biography:** Partha Basu grew up in West Bengal, India, completed his undergraduate studies with Honors in Chemistry from Calcutta University. Completed his MS in chemistry with specialization in Inorganic Chemistry. Then he joined a petrochemical company as a process chemist. But decided to go for a PhD. He joined the group of Animesh Chakravorty at the Indian Association for Cultivation of Science. There he was a Council of Scientific and Industrial Research fellow. His PhD research was on metal oxime chemistry, specifically on redox driven geometric isomerism. Upon completion of his PhD, he came to the US and joined John Enemark's group where he got interested in molybdenum chemistry. He started his independent career at Duquesne, where worked on mechanistic details of molybdenum enzymes. He developed sensors for toxic metal ions and published on biotransformation of arsenic. These research endeavors are continuing at IUPUI. In 2016, he moved to IUPUI from Duquesne. He has published more than 100 papers, and holds several patents. He has also coedited a book on laboratory teaching with Mitch Johnson. He has been a recipient of Indian National Science Academy Young Scientist Award, Research Corporation's Research Innovation Award, and National Research Service Award from the NIEHS. He is a fellow of the Royal Society of Chemistry. He has been an active contributor to SACP and SSP activities.

**Dinner Reservations:** Please email the SACP Administrative Assistant, [sacpinfo@pittcon.org](mailto:sacpinfo@pittcon.org), by Monday, September 4, 2017 to make dinner reservations. Should you not have email, please call 412-825-3220, ext 204. Dinner will cost \$10 (\$5 for students) and checks are to be made out to the SACP. If you have any dietary restrictions, please let the Administrative Assistant know when you leave message.

**Parking:** Duquesne University Parking Garage entrance is on Forbes Avenue. Upon entering the garage, you will need to get a parking ticket and drive to upper floors. Bring your parking ticket to the dinner or meeting for a validation sticker. Please contact Duquesne University, if any difficulties should arise.

## Looking for a CV or Resume Booster? Consider Volunteering for the Pittsburgh Local Section!

The Pittsburgh Local Section is looking to fill the following positions on our 2018 Executive Committee:

- o Secretary (1 Year Term 2018)
- o Secretary-Elect (2-Year Term, 2018-2019)
- o 3 Directors (3-year term)
- o 1 Councilor (3-year term)

Want to learn more about the duties of the positions? They can be found in our [online Operations Manual](#).

***Fear not in an unknown position – you have a team of committed volunteers ready to help you succeed!***

If you are interested in being on the ballot or learning more about the positions, please reach out to 2017 Nominating Committee Chair, Dr. Evonne Baldauff at [ebaldauff@waynesburg.edu](mailto:ebaldauff@waynesburg.edu).

## Pittsburgh Section Announces New Travel Grant Application

The Pittsburgh Section of the American Chemical Society has budgeted funds to help encourage undergraduate/graduate student participation in national and regional ACS meetings. The awards are intended to help defray meeting registration and travel-related expenses (lodging, transportation, per diem) for eligible students. [Click here for the application.](#)

## 2016 Pittsburgh Award Winner Dr. Neil Donahue Wins the Esselen Award for Chemistry in the Public Interest



2016 Pittsburgh Award winner Neil Donahue was awarded the Esselen Award for Chemistry in the Public Interest. This award is one of the most prestigious honors provided by the North-eastern Section of the American Chemical Society.

The award annually recognizes a chemist whose scientific and technical work has contributed to the public well-being, and has thereby communicated positive values of the chemical profession.

***Congratulations, Neil!***



# The Spectroscopy Society of Pittsburgh

## September Meeting

**Wednesday - September 13, 2017**

held at Duquesne University



**5:30 PM Technology Forum Speaker's Presentation Power Center Ballroom Section C**

**5:30 PM Social Hour – Power Center Fides Shepperson Suite**

**6:45 PM Dinner – Power Center Ballroom Section C**

**8:00 PM Business Meeting – Power Center Ballroom Section C**

**8:15 PM Technical Program Speaker's Presentation – Power Center Ballroom Section C**

<http://www.ssp-pgh.org/> and click on SSP Monthly Meeting “More Info” link

**Dinner Reservations:** Please register on-line at <http://www.ssp-pgh.org/> to make dinner reservations NO LATER THAN Friday, September 8, 2017 at noon. Dinner will cost \$10 (\$5 for students) and checks must be made payable to the SSP.

**Parking:** The Duquesne University Parking Garage is located on Forbes Avenue. Upon entering the garage, receive parking ticket and drive to upper floors. Pick up a parking chit at the dinner or meeting.

### **TECHNOLOGY FORUM - 5:30 PM**

***Russell L. Cersosimo Jr.***

***Founder, Pennsylvania Medical Cannabis Society (PAMCS), Owner, Keystone Integrated Care***

***Pennsylvania Gets The “Green” Light***

***Insight into the State’s Emerging Medical Cannabis Industry***

Dispensaries and grower/processors have received the “green” light to start operating in Pennsylvania, but where does this emerging industry go from here?

Russ Cersosimo, co-founder of the Pennsylvania Medical Cannabis Society (PAMCS) and co-owner Keystone Integrated Care, a newly formed dispensary group that will be operating multiple locations in southwestern Pennsylvania, will provide detailed insight into the medical cannabis industry now that it is legal in the Commonwealth. Cersosimo will provide a “state of the industry” outlining:

- The evolution of cannabis for medicinal uses
- What medicinal cannabis means for the state of Pennsylvania
- Requirements and methods for rollout to both physicians and patients
- Regulations and standards to ensure patient safety

Cersosimo will shed light on all of the myths and preconceived notions that you might have about cannabis, as well as address any burning questions from attendees in the audience.

**Biography:** Russell Cersosimo Jr. is the co-founder of the Pennsylvania Medical Cannabis Society (PAMCS), Pennsylvania’s largest organization for professionals working in the medical cannabis industry. In addition, Cersosimo is also co-owner of Keystone Integrated Care, a dispensary brand that was awarded a license in June 2017 to operate multiple locations throughout southwestern Pennsylvania.

***Bio and Technical Program on Page 8***



# Society for Analytical Chemists of Pittsburgh



## OCTOBER MEETING

**Monday, October 2, 2017  
6:30 PM, Duquesne University**

### *“Gins of the Fathers: Can Alcoholism be Epigenetically Inherited”*

**Gregg E. Homanics, Ph.D.**

Professor of Anesthesiology, Neurobiology, and Pharmacology & Chemical Biology  
University of Pittsburgh

**Abstract:** Transmission of DNA variants from parent to offspring (i.e., Mendelian inheritance) has been the generally accepted explanation for the familial nature of alcoholism. However, despite decades of intense effort, only a few DNA variants have been identified and they only explain a small fraction of alcoholism heritability. The search for the “missing heritability” has reinvigorated interest in the once discounted theory that traits acquired during an individual’s lifetime can be transmitted across generations. Dr. Homanics will challenge the dogmatic Mendelian view of inheritance by focusing on investigations of transgenerational epigenetic inheritance (a.k.a., soft inheritance). He will address the provocative hypothesis that alcohol or stress exposure produce enduring epigenetic effects that can be passed through the germline, influence the epigenetic program of descendants, and ultimately impact alcohol drinking and behavioral responses to alcohol.

**Biography:** Dr. Homanics received a Bachelor’s degree in Animal and Veterinary Science from West Virginia University in 1984, a Master’s degree in Animal Science from the University of Kentucky in 1987 and a PhD in Animal Science with a minor in Biotechnology from North Carolina State University in 1991. Following completion of his doctorate, he was a postdoctoral fellow in the Department of Pathology at the University of North Carolina at Chapel Hill. In 1993, he joined the faculty at the University of Pittsburgh. For over 21 years, Dr. Homanics has maintained an active, continuously NIH funded laboratory that is focused on understanding the mechanism of action of alcohol. He has published ~150 peer reviewed publications. Dr. Homanics has received the University of Pittsburgh Survival Skills and Ethics Distinguished Mentor Award, the Department of Anesthesiology’s Most Productive Scientist Award, and a MERIT Award from the National Institutes of Health. He is currently Scientific Co-Director of a multi-institution consortium that is focused on causes and treatments for alcohol use disorders (the Integrative Neuroscience Initiative on Alcoholism-Neuroimmune). At the University of Pittsburgh, he serves/ has served on numerous committees including the IACUC, Department of Laboratory Animals Advisory Committee, the Tenured Faculty and Promotions Committee, the Pharmacology Graduate Executive Committee, and Anesthesiology’s Scientific Affairs Committee. He has also served/chaired numerous grant review panels for the National Institutes of Health, the National Science Foundation, the Medical Research Council, and others.

**Dinner Reservations:** Please email the SACP Administrative Assistant, [sacpinfo@pittcon.org](mailto:sacpinfo@pittcon.org), by Monday, September 25, 2017 to make dinner reservations. Should you not have email, please call 412-825-3220, ext 204. Dinner will cost \$10 (\$5 for students) and checks are to be made out to the SACP. If you have any dietary restrictions, please let the Administrative Assistant know when you leave message.

**Parking:** Duquesne University Parking Garage entrance is on Forbes Avenue. Upon entering the garage, you will need to get a parking ticket and drive to upper floors. Bring your parking ticket to the dinner or meeting for a validation sticker. Please contact Duquesne University, if any difficulties should arise.



## *National Chemistry Week is Coming!!!*

Join the Pittsburgh Section of the American Chemical Society as we celebrate National Chemistry Week/ChemFest 2017 with the theme

**“Chemistry Rocks!”**

**Where:** Carnegie Science Center

**When:** Friday, October 27<sup>th</sup> (9 AM to 3 PM)

Saturday, October 28<sup>th</sup> (10 AM to 4 PM)

**What’s Happening:** Over 20 tables of hands-on experiments, activities, demonstrations, and theater shows.

The Pittsburgh Section ACS could use your help to make this year’s NCW celebration a success. Are you interested in volunteering to help with the event? Do you have an organization that would like to sponsor a hands-on activity at the event?

If you, or your organization, are interested in participating in this year’s NCW event, please contact:

Michael Mautino

Phone: 412-413-4792

E-mail: [michael.mautino@covestro.com](mailto:michael.mautino@covestro.com)

For more information about the NCW celebration in Pittsburgh, visit the Pittsburgh Section’s website at <http://www.pittsburghacs.org/outreach/national-chemistry-week/> or look us up Facebook at Pittsburgh ACS NCW. You can also find additional information about NCW on the ACS’s website at <http://www.acs.org/content/acs/en/education/outreach/ncw.html>

**The Pittsburgh Section's 2017 NCW activities are sponsored in part by The Society for Analytical Chemists of Pittsburgh, The Spectroscopy Society of Pittsburgh, PPG Science Education Council, PPG Industries Foundation, Covestro LLC, and the Carnegie Science Center.**

# 30<sup>th</sup> Annual Faraday Lecture



**Bob Becker**

## **"Ordinary Chemistry, Extraordinary Demos"**

*Spectacular demonstrations will delight and enrich students, teachers, and the general public. Come learn about combustion, exploding balloons, flame tornadoes, methane mambo, thermite, breathing helium and SF<sub>6</sub>, and other spectacular scientific phenomena. You will sit at the edge of your seat and will see science in action.*

**MIDDLE SCHOOL & HIGH SCHOOL STUDENTS**

**Tuesday, Wednesday, November 14 & 15, 2017**

**Invitation letters will be sent out early in the school year  
or you can go to the Society websites below.**

**Tuesday, Nov. 14 - 7:30 PM**

**Evening performance, free & open to the Public,  
no tickets required**

**Soldiers and Sailors Memorial Hall**

4141 Fifth Avenue in Oakland, PA

Sponsored by

The Spectroscopy Society of Pittsburgh

The Society for Analytical Chemists of Pittsburgh

[www.sacp.org](http://www.sacp.org) or [www.ssp-pgh.org](http://www.ssp-pgh.org)



## SSP September Meeting Continued from Page 4

Cersosimo's passion for the cannabis industry began in 2014 after befriending the family of Hannah Shuker, an 11-year-old girl with severe intractable epilepsy. After learning about the positive impact medicinal cannabis could have on her condition, Cersosimo made it his life's mission to get medicine into the hands of patients throughout the Commonwealth of Pennsylvania. As a result, PAMCS was born in early 2015 with the mission of fostering a model for education and leadership for the industry.

Through PAMCS' and Cersosimo's personal advocacy efforts, the organization was instrumental in getting medical cannabis legalized in the state of Pennsylvania in 2016. Today, Cersosimo is committed to forging new relationships and improving the flow of information in the rapidly changing field of medical cannabis.

The next chapter for PAMCS includes creating new and innovative technologies that will shape the future for dispensaries, not only in Pennsylvania but across the United States and abroad. PAMCS is currently working on developing HIPAA-compliant medical technology that will help educate doctors, increase patient population, and facilitate quick and efficient medical cannabis research.

In addition to Cersosimo's dedication to PAMCS, he is also a co-founder of Keystone Integrated Care, a dispensary brand that is licensed to operate multiple locations throughout southwestern Pennsylvania. Cersosimo's vision for Keystone Integrated Care is to make it the preeminent dispensary destination for all patients seeking medicine that will provide the relief they so desperately need. Locations are expected to open in early 2018.

Prior to PAMCS and Keystone Integrated Care, Cersosimo began his career as the founder of Webbula, a data-centric technology company. During his time as CEO, Cersosimo generated high-profile clientele including Google, Yahoo, T-Mobile, Neustar, and Epsilon, while also securing partnerships with the largest data providers all over the world. Most recently, Cersosimo served as CEO for marketing firm Optimal Reach Media.

Cersosimo is active in the community and supports several causes that he is deeply passionate about. He is on the Board of Directors of the Tourettes Syndrome Awareness Foundation and also supports the Cystic Fibrosis Foundation, Children's Hospital of Pittsburgh, Campaign for Compassion, and Camp Kon-O-Kwee.

Cersosimo studied Psychology at West Virginia University, where he received his BA.

### **TECHNICAL PROGRAM - 8:15 PM**

**Dr. Bhavya Sharma**

*Assistant Professor / Department of Chemistry*

*University of Tennessee at Knoxville*

### ***Raman Spectroscopy for ViVo Neurochemical Detection***

Many neurological diseases are difficult to diagnose in the early stages of disease progression where treatment would be most beneficial. For various diseases, changes in neurotransmitter concentrations indicate the onset or progression of the disease. Neurotransmitters can also be detected in biofluids, however this involves long sample processing and measurement times. There is a need for the development of sensors for the detection of neurotransmitters in a selective, rapid, label-free, non-invasive manner with little to no sample processing. Our group focuses on the detection of biomarkers for neurological activity in non-invasively collected biofluids and through the skull using surface enhanced Raman spectroscopy (SERS) combined with spatially offset Raman spectroscopy (SESORS). I will present results on the SERS detection of neurotransmitters in the micromolar ( $\mu\text{M}$ ) to nanomolar (nM) concentration range in aqueous solution and SESORS measurements of neurotransmitters through a skull.

Biography: Bhavya completed her Ph.D. in 2011 in Chemistry from the University of Pittsburgh under the guidance of Sandy Asher. In her Ph.D. research, she used UV resonance Raman spectroscopy and excitation profiles to examine electronic transitions in peptides and proteins. She moved onto a postdoctoral research position in Rick Van Duyne's group at Northwestern University where her research interests included biological applications of SERS and Raman spectroscopy. She is now an assistant professor at the University of Tennessee where her group is using SERS and UVRR to identify and study biomarkers of neurological diseases.

# Business Directory

## Services

### PITTSBURGH SECTION OFFICERS

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## Services

### 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 [hljuzwa@shimadzu.com](mailto:hljuzwa@shimadzu.com)!

### Crucible Deadline

The deadline for items submitted to The Crucible is the 15<sup>th</sup> of the month prior to publication.

For example, all items for the October 2017 issue must be to the editor by September 15, 2017.

### The Crucible

The Crucible is published monthly, August through May. Circulation, 2,500 copies per month. Subscription price, six dollars per year. All statements and opinions expressed herein are those of the editors or contributors and do not necessarily reflect the position of the Pittsburgh Section.

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## Services



SOCIETY FOR ANALYTICAL CHEMISTS OF PITTSBURGH

**Calling New Members**

Dues Only \$5.00, Call the SACP Administrative Assistant at 412-825-3220 Ext. 204 **Right Now!**

### 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

### Get Connected!

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

#### Section's Website:

[www.pittsburghacs.org](http://www.pittsburghacs.org)

#### Facebook Page:

Pittsburgh Section of the American Chemical Society

#### Linked In:

Pittsburgh Section of the American Chemical Society

# 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

### Monday, September 11

Society for Analytical Chemists of Pittsburgh

#### **“Insight into the Reactivity of Pterin-Containing Mo Enzyme Models”**

Partha Basu, Ph.D. Indiana University - Purdue University Indianapolis, Professor of Chemistry  
Duquesne University, Pittsburgh, PA

### Monday, September 11

The Spectroscopy Society of Pittsburgh

#### **Technology Forum**

#### **“Pennsylvania Gets the ‘Green’ Light - Insight into the State’s Emerging Medical Cannabis Industry”**

Russell L. Cersosimo Jr., Founder, Pennsylvania Medical Cannabis Society (PAMCS), Owner, Keystone Integrated Care  
Duquesne University, Pittsburgh, PA

#### **Technical Program**

#### **“Ramen Spectroscopy for ViVo Neurochemical Detection”**

Dr. Bhavya Sharma, Assistant Professor, Department of Chemistry, University of Tennessee at Knoxville  
Duquesne University, Pittsburgh, PA

### Monday, October 2

Society for Analytical Chemists of Pittsburgh

#### **“Gins of the Fathers: Can Alcoholism be Epigenetically Inherited”**

Gregg E. Homanics, Ph.D., Professor of Anesthesiology, Neurobiology, and Pharmacology and Chemical Biology, University of Pittsburgh  
Duquesne University, Pittsburgh, PA

### Friday and Saturday, October 27 & 28

National Chemistry Week

#### **Chemistry Rocks!**

Carnegie Science Center, Pittsburgh, PA