

The Crucible

ACS Pittsburgh Groups Spread Holiday Cheer!

This year the Women Chemists Committee and the University of Pittsburgh Student Affiliates were able to provide a little holiday cheer to those who have given so much. 250 stockings were filled and delivered to inpatient and outpatient veterans in the Oakland VA Hospital. Thank you to all who contributed in donations and/or time to make this annual Adopt-A-Vet(eran) program possible!



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Society for Analytical Chemists of Pittsburgh



February Meeting

Monday, February 2, 2015

8:00 PM

Duquesne University

*“The Ultimate Limits of Miniaturization in Science,
Engineering, and Medicine”*

Paul S. Weiss, Ph.D.,

University of California, Los Angeles

Abstract: The great promise of single-molecule/assembly measurements is to understand how critical variations in structure, conformation, and environment relate to and control function [1]. New approaches to imaging and analysis are keys to elucidating these associations. I will discuss current and upcoming advances and will pose the challenges that lie ahead in creating, developing, and applying new tools for biology and medicine. These advances include fusing spectroscopic imaging modalities and freeing up bandwidth in measurements to record simultaneous data streams and to expand our dynamic range. Recent advances in sparsity and compressive sensing can be applied both to new analysis methods and to directing measurements so as to assemble and to converge structural and functional information. Early examples will be discussed.

[1] Electrons, Photons, and Force: Quantitative Single-Molecule Measurements from Physics to Biology, S. A. Claridge, J. J. Schwartz, and P. S. Weiss, *ACS Nano* 5, 693 (2011).

Biography: Paul S. Weiss holds the Fred Kavli Chair in NanoSystems Sciences, and is a distinguished professor of chemistry & biochemistry and of materials science & engineering at the University of California, Los Angeles. He received his S.B. and S.M. degrees in chemistry from MIT in 1980 and his Ph.D. in chemistry from the University of California at Berkeley in 1986. He was a postdoctoral member of technical staff at Bell Laboratories from 1986-88 and a visiting scientist at IBM Almaden Research Center from 1988-89. Before coming to UCLA in 2009, he was a distinguished professor of chemistry and physics at the Pennsylvania State University, where he began his academic career in 1989. His interdisciplinary research group includes chemists, physicists, biologists, materials scientists, mathematicians, electrical and mechanical engineers, and computer scientists. Their work focuses on the ultimate limits of miniaturization, exploring the atomic-scale chemical, physical, optical, mechanical, and electronic properties of surfaces and supramolecular assemblies. He and his students have developed new techniques to expand the applicability and chemical specificity of scanning probe microscopies. They have applied these and other tools to the study of catalysis, self- and directed assembly, and molecular and nanoscale devices. They work to advance nanofabrication down to ever smaller scales and greater chemical specificity in order to operate and to test functional molecular assemblies, and to connect these to the biological and chemical worlds. Two current major themes in his laboratory are cooperativity in functional molecules and single-molecule biological structural and functional measurements. He has over 300 publications, holds over 20 patents, and has given over 500 invited, plenary, keynote, and named lectures.

Dinner Reservations: Please email the SACP Administrative Assistant, Valarie Daugherty at daugherty@pittcon.org by Monday, January 26, 2015 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 Valarie 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.



The Spectroscopy Society of Pittsburgh



February Meeting

Wednesday, February 18, 2015

Duquesne University – Laura Falk Hall located in Mellon Hall

Technology Forum Speaker's Presentation 5:30 PM

Social Hour 5:30 PM • Dinner in the City View Café (6th Floor) 6:30 PM

Business Meeting 8:00 PM • Technical Program Speaker's Presentation
8:15 PM

TECHNICAL PROGRAM - 8:15 PM

Alexander Star

Associate Professor of Chemistry and Bioengineering
University of Pittsburgh

TECHNOLOGY FORUM - 5:30 PM

Duquesne University – Laura Falk Hall located in Mellon Hall

"The New Health Conversation"

Peter Greenlaw, Author

Peter Greenlaw is the world's foremost health science investigator on toxins and aging. He's the author of "Why Diets are Failing Us."

More than ten years ago. Peter learned that he had cardiovascular problems, high blood pressure, and was at very high risk for a heart attack. His doctor's scary advice was to lose 40 pounds, go on a vigorous exercise and diet program, and use Lipitor. If not, he would not see his kids graduate from high school. At the time he was only 57 years old. What would you do? I think this is a time when most men would look for a way to extend their life and be healthier.

Peter was introduced to a nutritional system that changed his life called Isagenix. Using this system, he lost 20 pounds. To his astonishment he went from a 42-inch waist to a 34-inch waist—a size maintained for the past nine years. In all, he lost more than 30 pounds and has kept them off ever since. More importantly, he continues to be free of the need for prescription drugs—a major triumph. Peter Greenlaw has been called "the researcher of the researchers." Spurred by his own experiences, he has devoted 10 years of life to the study of environmental toxins and their effects on disease, obesity, and health. He has conducted more than 1,000 lectures on this subject all over the world. He has been interviewed numerous times on radio and television. Peter's goal is to change the world by educating all of us on the problems posed by environmental toxicity and what you can do about it. He is also involved with Isagenix, one of the leading companies in cellular cleansing.

Peter will also do a book signing of his newest book "The TDOS Syndrome".

Dinner Reservations: Please register on-line at <http://www.ssp-pgh.org/monthly-meeting-rsvp/> to make dinner reservations NO LATER THAN Thursday, February 12, 2015 at noon. Dinner will cost \$10 (\$5 for students) and checks can be made out to the SSP. If you have any dietary restrictions, please indicate them when you RSVP.

Parking Instructions: 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.

Applications for Student Travel Awards Now Being Accepted

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. To apply for the funds, one should simply complete the application (available on our web site at www.pittsburghACS.org) and return it by the relevant deadline to:

Pittsburgh Section ACS
Travel Grants
Attn: Dr. Michelle Ward
Room 107 / Chevron Science
Center
219 Parkman Avenue
Pittsburgh, PA 15260

Each year, the Pittsburgh Section of the ACS will award up to four \$500 grants to aid our undergraduate/graduate student members in presenting papers or posters at ACS Meetings. Awards will be made based on the scientific merit of the paper/poster to be presented and financial need. The deadlines for receipt of applications are 06/01/2015 (for travel to be completed by 12/31/2015) and 12/01/2015 (for travel to be completed by 06/30/2016.)

Our Section is looking forward to helping increase the participation of local students in ACS conferences. If you have any questions, please do not hesitate to contact Dr. Michelle Ward, muscat@pitt.edu or 412-624-8064.



WWW.PGHWCC.ORG

WITH DR. SETH HORNE
9AM-12PM

SATURDAY, FEBRUARY 28TH



DEPARTMENT OF CHEMISTRY ♦ UNIVERSITY OF PITTSBURGH

219 PARKMAN AVENUE ♦ PITTSBURGH, PA 15260

COST: \$5 / FREE TO MEMBERS / OPEN TO THE PUBLIC!

The oral communication of research results is an integral part of the job for practicing scientists, whatever their field. It may be tempting to believe that good science will always speak for itself; however, the ability to clearly convey the substance and importance of a particular set of data plays a huge role in how those results are received. The purpose of this workshop is to provide a primer on some of the essential skills necessary to give effective research talks.

Topics covered will include:

- ✓ Structuring a presentation based on different formats, lengths, and target audiences
- ✓ Framing a problem and placing work in context
- ✓ Slide design with an emphasis on what makes a good vs. bad figure
- ✓ General tips for success and common pitfalls to avoid
- ✓ Considerations unique to posters and poster talks for scientific meetings

REGISTRATION DEADLINE: FEBRUARY 20TH

To register, please send the form below and a check made out to "Greater Pittsburgh WCC" to Dr. Michelle Ward / 219 Parkman Ave / Room 107 / Pittsburgh, PA 15260.

You may also RSVP and submit payment via the Upcoming Events page on our website: www.pghWCC.org.

GIVING EFFECTIVE SCIENTIFIC PRESENTATIONS

Name: _____

Affiliation: _____

Email: _____

SAVE THE DATE!



SCIENTIFIC WRITING WORKSHOP

Saturday, February 28th 1-3 PM

Room 150 Chevron Science Center
219 Parkman Avenue ♦ PGH, PA
15260

*Cost: Cost: \$5 / free to members
Open to the public!*



**For more information, see the Upcoming Events page of our website:
www.pghWCC.org.**

Save the date

SSP Continuing Education Committee
is planning to organize



a facility tour to the Pittsburgh Water & Sewer Authority
on April 18 (Saturday), 2015.

Details and the registration form will be uploaded to <http://www.ssp-pgh.org>

C3 Couture, Cosmetics, & Chemistry



The Greater Pittsburgh Area WCC will be sponsoring an event on Saturday, March 28th for Girl Scouts to earn their “Science of Style” badge.

This event is also open to 7-10th grade students in the Greater Pittsburgh Area who are interested in attending and expanding their understanding of science.

When: March 28th from 9am-12pm

Refreshments available starting at 8:30am

Where: Chevron Science Center

(Department of Chemistry, University of Pittsburgh
219 Parkman Avenue, Pittsburgh PA 15260)

Cost: Free

(advanced registration required)

The Greater Pittsburgh Area WCC will lead local girl scouts, and local students, through 5 different stations, which were designed to meet the mandated requirements to earn the *Science of Style* badge.

Girls will complete projects such as creating lip balm, perfume, and homemade shrinky-dink pendants (amongst others) – all the while learning the science behind cosmetics and fashion.

NOTE: There are a limited number of spots available for this workshop. Anyone interested in attending should register by March 16th using the link available on the Upcoming Events page of our website: www.pghWCC.org.

Contact Michelle Ward (michelle.ward@pitt.edu) with any questions.

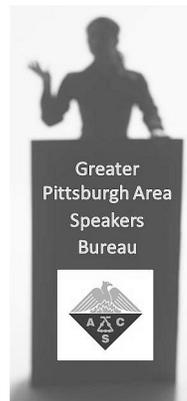
John Jackovitz Named A Society For Applied Spectroscopy 2014 Fellow

Congratulations to Pittsburgh Section ACS member John Jackovitz for being named a Society for Applied Spectroscopy 2014 Fellow.

The Fellows Award recognizes individual members for their outstanding service to the field of spectroscopy. This year's awardees are: Karl Booksh, Mary Kate Donais, Rina Dukor, John Jackovitz, Sergei Kazarian, Igor Lednev, Richard McCreery, James Rydzak and Ricardo Aroca.



Attention: Speakers Wanted



The Pittsburgh Section of the American Chemical Society is establishing a local speakers bureau and we would like for you to consider joining.

The speakers bureau will be available on our web site and will facilitate the connection between those organizing symposia and speakers from our area.

If you would like to be listed in the Bureau, please provide the following information:

- Name
- Affiliation
- Contact Information:
 - Mailing Address
 - Website (if applicable)
 - Email address
 - Phone
- Keywords/categories related to expertise (up to 5)
- Current CV/Resume (in pdf format)

Any questions should be directed to Michelle Ward
(muscat@pitt.edu or 412-624-8064)



Society for Analytical Chemists of Pittsburgh



March Meeting

NO

SACP March Meeting due to Pittcon® 2015 Conference and Exposition

**Pittcon 2015 will be held in
New Orleans, Louisiana
March 8 - March 12, 2015**



SACP Continuing Education Committee Presents:

PhET

(Physics Education and Technology-It is not only Physics)

PhET simulations provide fun, free, interactive, research-based science and mathematics. Each simulation is ensured educational effectiveness. All simulations are open source and free to all students and teachers.

Activities

Hand on Experiences

Workshop Facilitator:
Julia M. Chamberlain

Date: Saturday, March 28, 2015
Time: 8:30AM – 1:00 PM (free lunch included)
Location: Sewickley Academy
315 Academy Ave.
Sewickley, PA 15143

****ACT 48 credits available****

To register, complete the form below, and send it with a check of \$10.00 (pay to the order of SACP) to Ms. Valarie Daugherty, c/o SACP, 300 Penn Center Blvd., Suite 332, Pittsburgh, PA 15235, no later than March 23, 2015.

Name _____ Phone No. _____

School _____ E-mail address _____

ACT 48 credits needed? (Circle one) Yes No



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412.622.3114 info@carnegielibrary.org
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*Resources made possible by the Pittsburgh Section -
American Chemical Society - Endowment Fund of
Carnegie Library of Pittsburgh.*



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Tattoo-Like Sensor Can Detect Glucose Levels Without A Painful Finger Prick

"Tattoo-Based Noninvasive Glucose Monitoring: A Proof-of-Concept Study"
Analytical Chemistry

Scientists have developed the first ultra-thin, flexible device that sticks to skin like a rub-on tattoo and can detect a person's glucose levels. The sensor, reported in a proof-of-concept study in the ACS journal Analytical Chemistry, has the potential to eliminate finger-pricking for many people with diabetes.

Joseph Wang and colleagues in San Diego note that diabetes affects hundreds of millions of people worldwide. Many of these patients are instructed to monitor closely their blood glucose levels to manage the disease. But the standard way of checking glucose requires a prick to the finger to draw blood for testing. The pain associated with this technique can discourage people from keeping tabs on their glucose regularly. A glucose sensing wristband had been introduced to patients, but it caused skin irritation and was discontinued. Wang's team wanted to find a better approach.

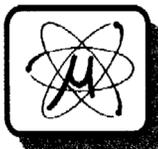
The researchers made a wearable, non-irritating platform that can detect glucose in the fluid just under the skin based on integrating glucose extraction and electrochemical biosensing. Preliminary testing on seven healthy volunteers showed it was able to accurately determine glucose levels. The researchers conclude that the device could potentially be used for diabetes management and for other conditions such as kidney disease.

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Spectroscopy Society of Pittsburgh

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



To join call Shana: 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

Facebook Page: Pittsburgh Section of the American Chemical Society

Linked In: Pittsburgh Section of the American Chemical Society

Business Directory

Services

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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!

Crucible Deadline

The deadline for items submitted to The Crucible is the 1st of the month prior to publication.

For example, all items for the March 2015 issue must be to the editor by February 1, 2015.

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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Career Opportunities

SEARCHING FOR THAT SPECIAL JOB?

There are many companies and organizations searching for chemical and biochemical personnel to fill important jobs in their organizations.

- Companies for laboratory and management positions
- Universities & Colleges for teaching positions and laboratory personnel
- Hospitals for technical and research personnel

There are several web sites that may help you search for these open positions.

- www.mboseervices.net/recr_disp.php
- <http://pubs.acs.org/chemjobs/>

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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, February 2

Society for Analytical Chemists of Pittsburgh

"The Ultimate Limits of Miniaturization in Science, Engineering, and Medicine"

Paul S. Weiss, Ph.D., University of California, Los Angeles

Duquesne University, Pittsburgh, PA

Wednesday, February 15

The Spectroscopy Society of Pittsburgh

"TBA"

Alexander Star, Associate Professor of Chemistry and Bioengineering, University of Pittsburgh

Duquesne University – Laura Falk Hall located in Mellon Hall, Pittsburgh, PA

The Spectroscopy Society of Pittsburgh - Technology Forum

"The New Health Conversation"

Peter Greenlaw, Author

Duquesne University – Laura Falk Hall located in Mellon Hall, Pittsburgh, PA

Saturday, February 28

Women Chemists Committee

Giving Effective Scientific Presentations

Department of Chemistry, University of Pittsburgh, 219 Parkman Ave., Pittsburgh, PA 15260

Saturday, February 28

Women Chemists Committee

Scientific Writing Workshop

Room 150, Chevron Science Center, 219 Parkman Ave., Pittsburgh, PA 15260

Saturday, March 28

Women Chemists Committee

C³ Couture, Cosmetics & Chemistry

Chevron Science Center, Department of Chemistry, University of Pittsburgh, 219 Parkman Ave., Pittsburgh PA 15260

Saturday, March 28

SACP Continuing Education Committee Presents PhET

Sewickley Academy, 315 Academy Ave., Sewickley, PA 15143