2017 Job Search Workshops Provided Benefits to Students and Job Seekers

On February 10, 2017, 19 students attended the Job Searching for Chemical Technicians (JSCT) workshop at Bidwell Training Center. On February 11, 2017, 41 job seekers attended the Job Searching for Chemical Professionals (JSCP) workshop at the University of Pittsburgh’s Chevron Science Center.

At the JSCT workshop, Joseph Jolson presented an overview of the job searching process and information specific to job searching in the Pittsburgh region. The attendees showed high levels of interest, liked the mock interview session, and asked many questions. All participated in the resume review/Q&A session. All were happy with the targeted career information, links to the presentations, and the ACS Career Development Brochure. The JSCP/T committee was thankful that Bidwell Training Center was able to donate breakfast and lunch. Karen Johnson, director of Bidwell’s chemical laboratory technician program and Paula Kubrick, Bidwell’s placement officer attended the workshop.

34 of the 41 attendees at the JSCP workshop were students and 7 were mid-career job seekers. 56% of attendees identified as chemists, 22% as chemical engineers, 15% as material scientists and 10% as biologists. Of the students, 53% were from the University of Pittsburgh, 14% from CMU, 12% from Kent State, 6% from Lycoming and 15% from other area colleges and universities. 23% of the students were post-doctoral associates, 22% were Ph.D. candidates, 16% were M.S. candidates, and 39% were B.S. candidates. Timing of the JSCP workshop was ideal for students anticipating a Spring graduation.

During the morning session, Daniel Eustace presented an overview of the job searching process via Skype and Joe Jolson provided information related to job hunting in the Pittsburgh region. Dan presented from a home office in Massachusetts because of an east coast blizzard. Most attendees signed up for 30-minute resume review and career counseling sessions held after the networking lunch. Attendees were grateful to get targeted career information, links to the PowerPoint presentations and copies of the ACS Career Development Brochure.

Continued on Page 12
For many people, buying a home represents the most expensive purchase they will ever make during their lifetimes. But most owners don’t really have the necessary background to know how the major systems in their homes function. Whether you own or rent, having awareness of the fundamental aspects of “building science” can help you to conquer the cold and hot spots in your abode and to make your domestic spaces healthier, safer, and more sustainable from an environmental standpoint. The talk will address how heat transfer, airflow, and moisture interact with each other in domestic spaces and the common problems that CCI encounters in its work in homes across our region. Additional information will be presented during this talk about some of the related policy challenges and opportunities that are unique to our region.

Jeaneen A. Zappa leads the South Side based nonprofit, CCI (formerly known as Conservation Consultants Inc), as Executive Director. CCI’s 20-person team visits nearly 4,000 regional residences each year, helping households, whose families earn little or low incomes, to be safer, healthier, more energy efficient – and more comfortable -- in their homes and apartments. Zappa’s 25-year professional career traversed the for-profit, public and nonprofit sector. Before joining CCI, she spent more than 15 years in the consumer and business-to-business marketing and communications sphere, with roles at St. Margaret Memorial Hospital, UPMC, The Pittsburgh Press, and technology solutions providers, Vocollect and Descartes. Then, she moved into the small nonprofit sector, joining the Green Building Alliance and later Allegheny County as its first Sustainability Manager.

Zappa holds dual Bachelor of Science degrees from Syracuse University in Magazine Journalism and Marketing, and an M.B.A. from the University of Pittsburgh. She holds the LEED-AP Legacy credential, the Principles of Building Science certificate from the Building Performance Institute, the PA Home Performance 101 course completion, and she is a graduate of the CORO Women in Leadership Program, the Dale Carnegie program.

Please make a reservation by contacting Elliott Bergman at elliott.acstechnology@gmail.com by 5:00 P.M. on Mar. 12, 2017.

Making a reservation in advance allows us to arrange for an appropriately sized meeting room. Walk-ins are still welcome. Our meetings are open to all. Menu includes the all-you-can-eat buffet at a cost of $20 per person. Wine and alcoholic beverages can be ordered at an additional charge from the wait staff.
BUILDING STEM SUCCESS
March 16–18, 2017
University of Pittsburgh,
University Club, 123 University Place

Join experts in chemistry, bioengineering, chemical engineering, and STEM education for workshops and technical and poster sessions and enjoy a special dinner cruise. Attend plenary lectures by Victor McCravy and Dorothy Phillips. Conference events are open to students, faculty, and chemistry and engineering professionals. Students who are NOBCChE members can register for free. Scholarships to cover lodging costs are available.

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STEM Success

NExM 2017
Northeast/Midwest NOBCChE Regional Conference

Sponsored by NOBCChE (National Organization for the Advancement of Black Chemists and Chemical Engineers) and cohosted by Carnegie Mellon University, the University of Iowa, and the University of Pittsburgh

Register Today! nexm2017.chem.pitt.edu

The University of Pittsburgh is an affirmative action, equal opportunity institution. Published in cooperation with the Department of Communications Services. DGS110338-0217
Spectroscopy Society of Pittsburgh

2017 Continuing Education ‘Lab’ Tour – Enhanced Experience at the National Aviary

WHEN: Saturday, April 1, 2017
10:00 am -12:00 pm

WHERE: National Aviary
Allegheny Commons West
700 Arch Street
Pittsburgh, PA 15212

Space is limited to the first 50 SSP/SACP members to register. Each member may bring ONE guest.

Lunch Reception: 12:30 PM at Old Town Buffet (860 Saw Mill Run Blvd, Pittsburgh, PA 15226)

Registration Deadline: March 28, 2017

Registration Fee: $10/person (Make check payable to SSP)
Parking: Limited free parking space at Aviary
Parking reimbursement: only parking meter receipt is acceptable

2017 SSP Continuing Education ‘Lab’ Tour Registration Form

Member Name____________________________ Guest Name___________________________
Member Email____________________________ Member Telephone_____________________
Mailing Address___________________________________________________________________

Are you coming to lunch? ____Yes _____No Is your guest coming to lunch? ____Yes _____No

Mail registration form with payment check (payable to SSP) to:
Ms. Amy Bovino
SSP-Continuing Education Committee
300 Penn Center Blvd, Suite 332
Pittsburgh, PA 15235
Abstract: Three dimensional cell cultures are attractive models for biological research. They combine the flexibility of cell culture with some of the spatial and molecular complexity of tissue. For example, colon cancer cell lines form spheroids, in vitro mimics of poorly vascularized tumors. The spheroids are composed of a central necrotic core, a middle quiescent layer and an outer proliferative layer of cells, similar to a rapidly growing colon tumor. Our laboratory has characterized the distribution of endogenous proteins via MALDI imaging mass spectrometry in colon spheroids and determined that the molecular gradients correlate with the pathophysiological changes in the structure. Currently, we are interrogating the spatial distribution of proteins following the loss of function of the protein E-cadherin, a critical regulator of the metastatic process. Given the flexibility of cell culture, we can manipulate E-Cadherin expression and monitor the spatial changes in protein expression and phenotypic alterations that accompany E-Cadherin knockdown. We have also developed an approach to employ 3D cell cultures to evaluate the penetration of compounds into cellular masses. Most novel drugs are initially evaluated with 2D cultures before moving directly to costly animal studies. 3D cultures provide an ideal testbed to minimize these studies. Working with the chemotherapeutics oxaliplatin and irinotecan, our data supports differential penetration of these clinically relevant drugs. Our future studies include evaluation of drug and imaging probe libraries to evaluate the functional moieties that contribute to penetration of compounds, including the development of novel statistical workflows to evaluate imaging data generated from 3D cell cultures. We are also employing microfluidic devices to enable dynamic dosing, thus investigating the pharmacokinetics and pharmacodynamics of chemotherapy regimes in these attractive model systems.

Biography: Amanda was born and raised in Pittsburgh, PA. She earned her A.B. in chemistry at Cornell University in 1999, where she did undergraduate research in the laboratory of Prof. James M. Burlitch, synthesizing copper phthalocyanine nanoparticles. In the fall of 1999, she began her graduate studies in analytical chemistry at the University of Illinois, Urbana-Champaign, joining the laboratory of Prof. Jonathan V. Sweedler. Her thesis work focused on the development of mass spectrometric and bioinformatic strategies to predict and identify neuropeptides.

Following the completion of her Ph.D. in 2004, Amanda was invited to participate in the annotation of the newly sequenced honey bee genome as a post-doctoral fellow in the laboratories of Prof. Gene E. Robinson and Prof. Sandra L. Rodriguez-Zas at the University of Illinois. The focus of her research was constructing a methodology to utilize detected gene products, both mRNA and proteins, to decipher an unannotated genome.

In August of 2005, Amanda began her position as the Sallie Rosen Kaplen Post Doctoral Fellow at the National Cancer Institute, National Institutes of Health in the laboratory of Dr. Thomas Ried. During her time in the Ried lab, she utilized RNA interference screening techniques followed by microarray analysis to elucidate genes that regulate the viability of colorectal cancer cells.

Dinner Reservations: Please email the SACP Administrative Assistant, Julianne Diddle at diddle@pittcon.org by Tuesday, March 28, 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 Julianne 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.
2017 Tripartite Symposium

SOMETHING IS IN THE AIR: Scent Chemistry

Saturday, May 20, 2017, 8:30 am – 2:00 pm
Carlow University – AJ Palumbo Hall of Science and Technology – Room 107
3333 Fifth Avenue (between Forbes and Fifth on corner of Craft), Pittsburgh, PA 15213

8:30  Registration and Opening Remarks
9:00  Carbon Nanotube-based Gas Sensors toward Breath Analysis
      Alex Star, Ph.D. University of Pittsburgh
9:45  The Role of Scent in Business Today
      Rick Burkhard, Air-Scent International
10:30 Intermission
10:40 Demonstration of K-9 Bartje Detecting Explosives
      Sergeant Chad O’Brien and K-9 Bartje, Pittsburgh Police Department
11:10 Giving Scent a Meaning: How We Train Dogs to Recognize Unique Smells
      Meghan Ramos, Penn Vet Working Dog Center
11:55 An Interdisciplinary Approach to Detecting Ovarian Cancer using its Odor Signature
      George Preti, Ph.D. Monell Chemical Senses Center
1:40  Luncheon and Discussion

OPEN TO THE PUBLIC

Please register by Wednesday May 17, 2017
Registration Fee: $10 - Reception & Parking* Included
(* Parking in lot at 3333 Fifth Avenue.)

Please make check payable to SSP and mail the Registration Form below to:
Heather Juzwa, SSP - Tripartite Symposium
321 Winners Circle
Canonsburg, PA 15317

TRIPARTITE 2017 REGISTRATION FORM

Name: ______________________________________  Affiliation: ______________________________________

Mailing Address: ________________________________________________________________________________

Email: ___________________________________  Phone: _____________________________________________

_____ I am attending the luncheon.  Dietary Restrictions: ____________________________________________

www.pittsburghacs.org
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.
**Rick Burkhard, Air-Scent International**

*The Role of Scent in Business Today*

**Biography:** Rick Burkhard has been in the fragrance industry for over 20 years. As the business manager for Air-Scent International he is engaged with the many levels of ambient scent application. In the early 2000’s Rick became an early adopter and engaged with the sensory marketing portion of the fragrance industry. He has worked with such companies as Bath & Body Works, TimeMist, Yankee Candle Co. Pier1 and ScentAir and shared his knowledge through lectures at Concordia University under Jordan LeBel and Rowan College under Robert Ambrose.

**Abstract:** Olfactory awareness is an impactful way of connecting a person to a situation, item or memory through the sense of smell. The olfactory system is how our brain associates aromas with our surroundings. Attached to our limbic system, it immediately creates impressions – memories – that will always be associated and available for immediate recall.

How do you create brand awareness through Scent Marketing? Utilizing extensive knowledge and fragrance design, aromas can be deployed to set a controlled sensory environment. Whether you are enhancing an apartment, fitness center, advertisement, or product, the potential is endless. Through fragrance development and designed an effective aroma can be utilized to invoke a positive emotional response for any brand.

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**Sergeant Chad O’Brien and K-9 Bartje, Pittsburgh Police Department**

*Demonstration of K-9 Bartje Detecting Explosives*

**Biography:** Sergeant Chad O’Brien has been with the Pittsburgh Police Department for twelve years, including acting as a sergeant the past four and a half years. Sergeant O’Brien has been a member of the Pittsburgh SWAT Team the past nine years and took charge of the K-9 Unit in 2016. Chad has been partnered with K-9 Bartje since January of 2016.

K-9 Bartje is a 7 year old Belgian Malinois who is trained in Explosive and Gun Detection. Bartje is a dual purpose K-9 who is also trained in Patrol, to include but not limited to high risk tracking, building searches, area searches and bite apprehension.

**Abstract:** Sergeant Chad O’Brien will introduce us to K-9 Bartje. He will discuss how they work together and demonstrate Bartje’s expertise in detecting explosives.
Biography: Meghan Ramos is a research coordinator at the Penn Vet Working Dog Center (PVWDC). She has been working and training working dogs at the PVWDC for three and a half years. She is a 2018 Veterinariae Medicinae Doctoris (VMD) candidate at the University of Pennsylvania School of Veterinary Medicine and received her Bachelor of Science in Animal Science from Rutgers University. After veterinary school, Meghan will pursue a Master’s of Translational Research and residency in Sports medicine and rehabilitation.

Abstract: A working dog’s nose has been an essential asset to federal governments, militaries, police departments, and most recently medical research teams worldwide. Research has shown there are an estimated 220 million olfactory receptors in a dog’s nose. Together these receptors are capable of detecting compounds at the lower limits of one part per trillion. This is three orders of magnitude greater than the sensitivity of current instruments, which establishes a dogs’ nose as the best scent detection device known to man. Trainers and researchers utilize the dogs’ ability to detect one specific scent amongst a vast background through an imprinting training technique. Imprinting consists of presenting the scent of interest to the dog in a reward-based clicker and treat method. The dog relentlessly searches for the scent and is rewarded with high value food or an elaborate tug of war session with his handler. Upon successful completion of imprinting, the dog has formulated a strong connection between the scent and the toy or food reward. At the Penn Vet Working Dog Center (PVWDC) every dog undergoes both foundational and career specific scent training. Career specific odors include explosives and narcotics for police K9s, disaster victims and human remains detection for Urban Search and Rescue dogs, or volatile organic compounds associated with cancer and infectious disease for medical detection dogs. A successful working dog career requires meticulous training to enhance the dogs’ natural olfactory abilities, which contributes to the future of national security and medical advancements.

Biography: Dr. George Preti was born and raised in Brooklyn, NY. He received his B.S. in Chemistry from the Polytechnic Institute of Brooklyn in 1966 and his PhD in Organic Chemistry in 1971 from the Massachusetts Institute of Technology, with a specialty in Organic Mass Spectrometry in the laboratory of Professor Klaus Biemann. That same year he joined the Monell Chemical Senses Center in Philadelphia. The Center, a non-profit research institute, is renowned throughout the world as a leader in multidisciplinary, basic research in olfaction and gustation. Dr. Preti is a Member of Monell and an Adjunct Professor in the Department of Dermatology, School of Medicine at the University of Pennsylvania. For more than four decades, his research has focused upon the nature, origin and functional significance of human odors. His current studies center upon human odors which are diagnostic of disease, a bioassay-guided approach to the identification of human pheromones, malodor identification and suppression as well as examining the “odor-print” of humans and the effect of genetics on body odor.
In addition to having published numerous peer-reviewed papers and reviews, Dr. Preti holds more than a dozen patents related to deodorancy, odor-mediated control of the menstrual cycle and the use of odors in diagnosis. His unique area of research has resulted in hundreds of clinician-directed referrals of patients with idiopathic body- and oral malodor production problems. His efforts in this area have revealed a large, undiagnosed population of people suffering from trimethylaminuria, an odor-producing genetic disorder. In addition his research has resulted in frequent citations and coverage in print and electronic media throughout the world.

His research on human and agricultural odors was featured in the New York Times Magazine section on 10/15/00 ("The War on Stink;" see below) as well as described in a feature article about Monell’s research done by Chemical and Engineering News (C&E News): 1/7/02 issue. More recently his laboratory’s research into the volatile organic compounds associated with skin cancer was the subject of articles in the Philadelphia Inquirer (8/21/08), C&E News (9/22/08) as well as electronic and print media around the world. In addition, C&E News described his on-going research into human odor signatures on 10/12/09: “You Stink.”

Several television segments have also described his research into body and oral odors, including appearances on “CBS Sunday Morning” which discussed his research into human primer and modulator pheromones found within axillary secretions (it was the subject of world-wide press coverage) and ABC’s “Primetime-Medical Mysteries” series which featured Dr. Preti and two of the individuals he has diagnosed with Trimethylaminuria, a genetic, odor-producing disorder “CBS This Morning” and Fox News Health report ( http://www.foxnews.com/health/2013/10/07/woman-best-friend-dogs-being-trained-to-sniff-out-ovarian-cancer/) have recently described his current research aimed at identifying the odor signature of ovarian cancer. This unique research effort was also detailed in the New York Times Magazine (http://www.nytimes.com/2013/11/24/magazine/what-does-cancer-smell-like.html?_r=0 ).

Abstract:

Introduction: Ovarian carcinoma is the most lethal of the gynecological malignancies and the fifth leading cause of cancer death in women. The high mortality rate is due to the late stage of detection when therapeutic strategies are limited and morbidity and mortality are high. Diagnosis of ovarian cancer is severely hindered by the lack of reliable early-stage diagnostic tools despite its importance to treatment success. Studies using proteomics, genomics, metabolomics as well as imaging techniques have not yielded successful screening methods to date. To our knowledge, none have attempted what we are doing, viz., examination and use of the volatile organic compounds (VOCs) produced by ovarian carcinoma to enable diagnosis.

Hypothesis: Based on previous studies with trained dogs, we hypothesized that endogenous volatile metabolites emanating from the tumor will provide a reliable, detectable signal of cancer’s presence.

Innovative Approach: To test this hypothesis, we employed a multidisciplinary approach using a) trained canines to demonstrate the presence of volatile organic compounds (VOCs) from the disease, b) organic-analytical techniques (SPME; GC/MS) to identify volatile biomarkers of the disease and c) using the volatile biomarkers to help identify single-stranded-DNA-coated carbon nanotubes (DNA-NT) for incorporation into a nanotechnology-enabled E-nose to “sense” the VOCs and serve as a screening tool.

Results: Our medical-detection dogs have been trained to recognize the odor of ovarian carcinoma from biopsied tissue and are able to distinguish with 90% or higher mean proportion of success pooled and individual plasma samples from patients with ovarian cancer vs. those from healthy controls. Results obtained using both organic-analytical techniques and DNA-NT sensors suggest the existence of reliable quantitative differences in VOCs emanating from pooled and individual plasma samples collected from healthy controls as well as patients with benign growths and patients with various forms of primary ovarian cancer. The nature of the compounds distinguishing the samples as well as differences in the DNA-NT analyses of individual samples from both patient groups as well as controls will be shown and discussed.

Conclusion: Ovarian cancer does have a characteristic odor signature and it is reliably detected by trained canines, GC/MS and the arrays of DNA-NT sensors that we have employed.
2017 Tripartite Symposium

Saturday, May 20, 2017, 8:30 am – 2:00 pm
Carlow University – AJ Palumbo Hall of Science and Technology – Room 107
3333 Fifth Avenue (between Forbes and Fifth on corner of Craft), Pittsburgh, PA 15213

8:30   Registration and Opening Remarks
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       Alex Star, Ph.D. University of Pittsburgh
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       George Preti, Ph.D. Monell Chemical Senses Center
1:40   Luncheon and Discussion

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Thanks go to Paul Brezovec, Don Cescon, Michelle Coffman, Karen Johnson, Joe Jolson, Hub MacDonald, Steve Monaco, Manny Schreiber, Andy Takacs, John Timbario, and Beth Tomasovic; the volunteers who planned the workshop, staffed the registration table, facilitated the morning session, and helped with the resume review and one on one personal consultations. Thanks also go to Evon Nigro and Mary Beth Conroy of the University of Pittsburgh’s Chemistry Department for arranging for use of the Chevron Science Center facilities, making the food arrangements, obtaining the parking validation stickers, and taking care of tables, chairs, flipcharts, easels, food placement, and housekeeping.

Contributions from the ACS – Pittsburgh Section, AIChE – Pittsburgh Chapter, SACP, and SSP covered the cost of the 2-day workshop. As exemplified by the high-level of interest shown by the attendees, our career workshops provide an important service to the community.

Submitted by Joseph Jolson, Coordinator of the Joint JSCP/T Workshop Committee and Chair of the ACS – Pittsburgh Section Professional Relations Committee
Society for Analytical Chemists of Pittsburgh

Dues Only $5.00, Call Julianne Diddle 412-825-3220 Ext. 204 Right Now!

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Facebook Page: Pittsburgh Section of the American Chemical Society

Linked In: Pittsburgh Section of the American Chemical Society

www.pittsburghacs.org
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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!

Crucible Deadline

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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Pittsburgh Area Calendar

**Tuesday, March 14**
Pittsburgh Section ACS Energy Technology Group
“*I’m Too Hot, I’m Too Cold*” Getting Your House to ‘Just Right’- How to Have a Healthy, High-Performing Home
Jeaneen Zappa, Executive Director of CCI/LEED - Credentialed Consultant
Old Town Buffet, 860 Sawmill Run Rd., Pittsburgh, PA

**Thursday, March 16 - Saturday March 18**
NExM 2017
Northeast/Midwest NOBCChE Regional Conference
**Building STEM Success**
The University of Pittsburgh, University Club, 123 University Place, Pittsburgh, PA

**Saturday, April 1**
The Spectroscopy Society of Pittsburgh
**2017 Continuing Education ‘Lab’ Tour - Enhanced Experience at the National Aviary**
National Aviary, Allegheny Commons West, 700 Arch Street, Pittsburgh, PA

**Monday, April 3**
Society for Analytical Chemists of Pittsburgh
*“Imaging Mass Spectrometry of 3D Cell Cultures”*
Amanda Hummon, Ph.D., University of Notre Dame
Duquesne University, Power Center Ballroom Section C, Pittsburgh, PA

**Saturday, May 20**
2017 Tripartite Symposium
**Something is in the Air: Scent Chemistry**
Carlow University - AJ Palumbo Hall of Science and Technology - Room 107
3333 Fifth Avenue (between Forbes and Fifth on corner of Craft, Pittsburgh, PA