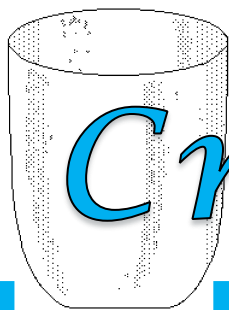


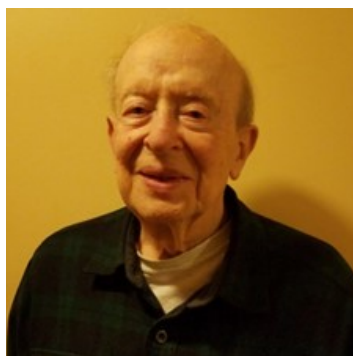
The Crucible



Volume CIV, No. 6

February 2019

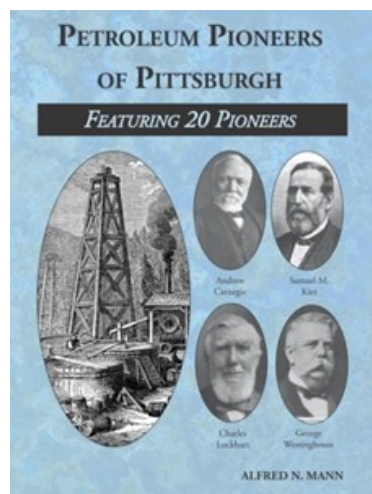
Long-time Energy Technology Group Member Al Mann has Published a Book Petroleum Pioneers of Pittsburgh



Alfred Mann received a B.S. in Chemical Engineering from Cornell University and an M.S., also in Chemical Engineering, from the University of Pittsburgh. He retired in 2006 from the National Energy Technology Laboratory of the U.S. Department of Energy, Pittsburgh, PA, where he served as a support contractor. He was previously employed by Gulf Research & Development Corporation from 1957 to 1983, where he was Director of Process Economics.

He was instrumental in the Pittsburgh Local Section receiving the 2009 National Chemical Historic Landmarks Award from the National ACS for The Development of the Pennsylvania Oil Industry. See more <http://www.pittsburghacs.org/archives/national-historic-chemical-landmark/>

Order forms can be found on [page 4](#) of this issue of The Crucible. Order your copy today!



This work gathers and interweaves the stories and oil/natural gas business ventures of the following Pittsburgh men who helped develop and lead this emerging energy industry from the 1850s into modern times:

Michael L. Benedum, Ebenezer Brewer, Andrew Carnegie, John W. Chalfant, John Eaton, John H. Galey, James M. Guffey, David Hostetter, Samuel M. Kier, Charles Lockhart, Andrew W. Mellon, Richard B. Mellon, Joseph N. Pew, Sr., Thomas W. Phillips, Sr., John Pitcairn, Jr., Joseph C. Trees, Herbert W. C. Tweddle, Jacob J. Vandergrift, George Westinghouse, John Worthington

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Job Searching For STEM PROFESSIONALS

Presented by

The Spectroscopy Society of Pittsburgh
The American Chemical Society, Pittsburgh Section
The Society for Analytical Chemists of Pittsburgh
Bayer School of Graduate Students, Duquesne University

Saturday, February 9, 2019

Pre-Registration is Required for this Free Event

Maurice Lecture Hall in Mellon Hall of Sciences
Duquesne University
600 Forbes Ave, Pittsburgh, PA 15282

Parking is available in Forbes Garage (bring ticket to registration table)

PROGRAM

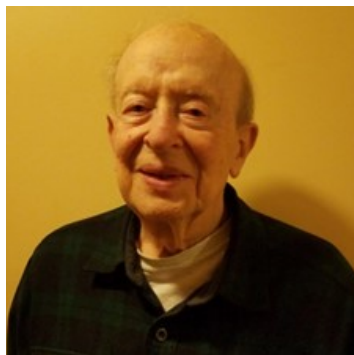
- 8:30 A.M. Registration
- 9:00 A.M. **MANAGING AN EFFECTIVE JOB SEARCH**
Lisa Balbes, Ph.D.
Balbes Consultants LLC
Career Consultant, American Chemical Society
- 12:30 P.M. **Networking Lunch**
- 1:00 P.M. Resume Review and Personal Consultation
- 3:30 P.M. Close

Please bring resume and/or CV to participate in the afternoon program
(Undergraduates without a resume may participate in the afternoon group resume review)

To Pre-Register for the Job Searching for Stem Professionals Workshop

Send an email to Joshua Imperatore at: imperat1@duq.edu

Your pre-registration must be received by Monday, February 4, 2019 and include your full name and complete contact information including address, phone number, email address and whether or not you expect to participate in the resume review. Academic registrants - please include university affiliation and university department. Let us know when you expect to complete your B.S., M.S., Ph.D., post-doc, or other assignment.

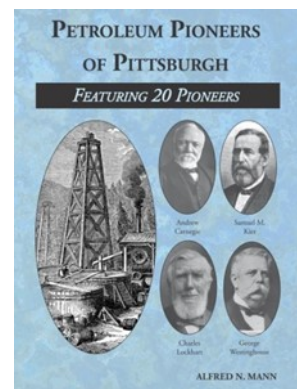


ACS-Energy Technology Group

Thursday, February 21, 2019

“Petroleum Pioneers of Pittsburgh”

Al Mann



Abstract

Al Mann will discuss his new book, [“Petroleum Pioneers of Pittsburgh.”](#) This work gathers and interweaves the stories and oil/natural gas business ventures of the following Pittsburgh men who helped develop and lead this emerging energy industry from the 1850s into modern times:

Michael L. Benedum, Ebenezer Brewer, Andrew Carnegie, John W. Chalfant, John Eaton, John H. Galey, James M. Guffey, David Hostetter, Samuel M. Kier, Charles Lockhart, Andrew W. Mellon, Richard B. Mellon, Joseph N. Pew, Sr., Thomas W. Phillips, Sr., John Pitcairn, Jr., Joseph C. Trees, Herbert W. C. Tweddle, Jacob J. Vandergrift, George Westinghouse, John Worthington

Biography

Al Mann was born in Cincinnati, Ohio in 1929. He received his B. S. Degree in Chemical Engineering at Cornell University in 1951 and his M.S. Degree in Chemical Engineering from the University of Pittsburgh in 1961. He worked as a technologist at Shell Chemical Corporation, Dominguez, California from 1951 to 1957. In 1957 he joined Gulf Research & Development, Pittsburgh, Pennsylvania, where he served as an engineer until 1983. His final position was Director of Process Economics. He later joined the National Energy Technology Laboratory as a contract engineer, working there from 1991 to 2006, focusing primarily on Clean Coal Technology.

As a former President of the East Liberty Valley Historical Society, he is co-author of Pittsburgh’s East Liberty Valley, 2008. Al is a member of Friends of the Drake Well, Titusville, Pennsylvania, and has written a number of articles for the journal Oil-Industry History.

Cost is \$26 (cash or check), 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. Coffee, tea, and soft drinks, included.

RSVP to ACS.ETG@gmail.com by Monday, February 18, with names of those planning to attend, and, your dinner choice.

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

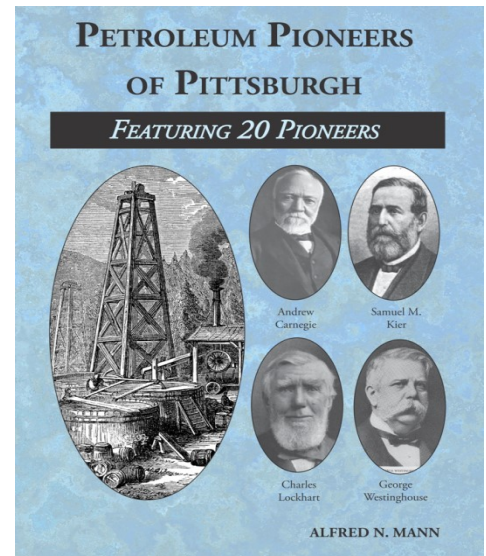
Petroleum Pioneers of Pittsburgh

Alfred N. Mann

Hardcover with dust jacket, 325 pages, 8½ in. x 11 in.

This work gathers and interweaves the stories and oil/natural gas business ventures of the following Pittsburgh men who helped develop and lead this emerging energy industry from the 1850s into modern times:

Michael L. Benedum, Ebenezer Brewer, Andrew Carnegie, John W. Chalfant, John Eaton, John H. Galey, James M. Guffey, David Hostetter, Samuel M. Kier, Charles Lockhart, Andrew W. Mellon, Richard B. Mellon, Joseph N. Pew, Sr., Thomas W. Phillips, Sr., John Pitcairn, Jr., Joseph C. Trees, Herbert W. C. Tweddle, Jacob J. Vandergrift, George Westinghouse, John Worthington



Order Details

Quantity: _____	@ \$55.00/copy	\$ _____	Sales tax
Shipping:	\$5 any quantity, \$0 for on site pickup	\$ _____	
	Sub Total:	\$ _____	\$\$ 7%
Sales Tax:	7% for Allegheny Co. (incl. 6% PA sales tax)	\$ _____	55 3.85
	Order Total:	\$ _____	60 4.20
Payment method:	<input type="checkbox"/> Check <input type="checkbox"/> Cash <input type="checkbox"/> Invoice by mail		110 7.70
Customer Name:			115 8.05
Company Name:			165 11.55
Billing Address:			170 11.90
Shipping Address:			
(if other than Billing Address)	_____		
Customer Email			
Customer Phone			

Orders may be placed by mail, phone or email:

Mail: Alfred N. Mann
 Longwood at Oakmont
 151 Overlook Drive
 Verona, PA 15147

Phone: 412-826-5834 Email: amann23451@gmail.com



Society for Analytical Chemists of Pittsburgh Spectroscopy Society of Pittsburgh



February Meeting

Wednesday, February 13, 2019



5:30 PM Social Hour — Power Center Ballroom

5:30 PM SSP Technology Forum – Power Center Ballroom

6:30 PM Dinner – Power Center Ballroom

Student Affiliate Meeting – Shepperson Suite

7:45 PM Business Meeting – Power Center Ballroom

8:00 PM Technical Program – Power Center Ballroom

SSP TECHNOLOGY FORUM



Dr. Kerri Pratt, University of Michigan

“Novel Applications of Mass Spectrometry to Atmospheric Chemistry”

Recent developments in the field of mass spectrometry are leading to molecular-level understanding of environmental chemistry issues, particularly for air quality and climate change. Our efforts are focused on three main techniques: 1) chemical ionization mass spectrometry, for real-time identification and quantitation of trace atmospheric gases at ppt to ppq levels, 2) nano-desorption electrospray ionization mass spectrometry, for the determination of the molecular composition of atmospheric organic particles, and 3) aerosol time-of-flight mass spectrometry, for the measurement of the size and chemical composition of individual atmospheric nanoparticles in real-time using laser desorption/ionization coupled with dual-polarity reflectron time-of-flight mass spectrometry. I will discuss recent research findings, showing how my research group is applying these novel techniques to advance the field of atmospheric chemistry, particularly with respect to our understanding of the atmospheric compositions and reactions in the rapidly changing Arctic.

BIOGRAPHY: Kerri Pratt is the Seyhan N. Ege Assistant Professor of the Department of Chemistry and Department of Earth & Environmental Sciences at the University of Michigan in Ann Arbor, MI. She is recognized as a rising leader at the intersection of analytical and environmental chemistry, particularly the development and application of novel, field-based mass spectrometry to the critical study of Arctic change. Dr. Pratt received her B.S. in Chemistry from the Pennsylvania State University in 2004, having performed solid-state NMR and MALDI studies with Dr. A. Daniel Jones and Prof. Karl Mueller. She received her Ph.D. in Chemistry from the University of California, San Diego in 2009 with Prof.

[Continued on Page 17](#)



Society for Analytical Chemists of Pittsburgh
Spectroscopy Society of Pittsburgh

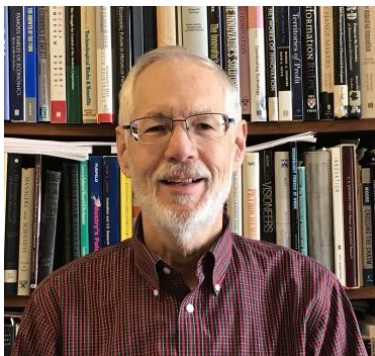


February Meeting
Wednesday, February 13, 2019

SACP Technical Program

Dr. David A. Hounshell

David Roderick Professor, Emeritus, of Technology
& Social Change, Carnegie Mellon University



**“Pittsburgh’s Industrial History Through the Lenses of
Geography, Materials and Knowledge Production”**

Almost from its founding in the late 18th century, Pittsburgh has occupied an important place in the USA’s industrial landscape. Pittsburgh’s location west of the Appalachian Mountains shaped its early patterns of industrialization, and with America’s western migration and innovations in transportation, the region came to rely more and more on its rich mix of natural resources, growing capital, and human capital to rise to national—and international—recognition as an industrial juggernaut. Fueled by its rich deposits of coal, Pittsburgh innovated in energy-intensive materials manufacture such as iron and steel, non-ferrous metals, and glass. Product and system innovations followed, and institutions of knowledge production were created to drive further the development of the region. Inventors, engineers, and entrepreneurs populated the region and became truly legendary figures in the larger story of American industrialization. Although Pittsburgh became known by such phrases as “Hell with the lid off” and “the Smokey City,” business cycles and structural changes in the national economy led to some tough times in the region. But continued investments in and growth of institutions of knowledge production and effective civic leadership proved to be key in the second half of the 20th century in transforming the region from its heavy dependence on “big steel” into a more diverse knowledge-based economy of specialty materials, science-based industries and services, and start-ups and young entrepreneurial firms. This illustrated lecture will end by arguing that geography, materials, and knowledge production remain key factors in the region’s evolving economy.

[Continued on Page 17](#)

DINNER RESERVATIONS: Please complete the **Online Dinner Reservation Form** NO LATER THAN Monday, February 4, 2019. The form is also located under the Meeting Notice on website www.sacp.org. & www.ssp-pgh.org. Should you not be able to access the form, please call 412-825-3220, ext. 212 the SACP & SSP Administrative Assistant to make your dinner reservation. The entrée choices for February are TBD. Please let us know if you have any dietary restrictions. Dinner will cost \$10 (\$5 for undergraduate students). Checks can be made payable to the SACP or the SSP, depending on membership.

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. Should any difficulties arise, please contact Duquesne University.



Our mission is to be leaders in attracting, developing, and promoting women in the chemical sciences.

The goals of the WCC include:

- Attracting women to a profession in the chemical sciences.
- Providing leadership for career development opportunities for women in the chemical sciences.
- Promoting and recognizing the professional accomplishments of women in the chemical sciences.

Membership Dues: \$5 (students) \$15 (professional)



Who should be involved in the WCC?

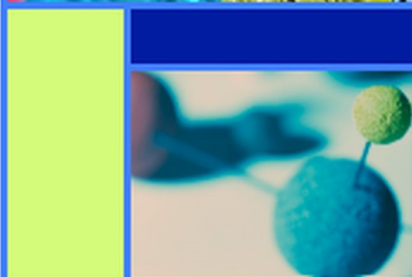
Industrial
Academic
Graduate

Government
Undergraduate
Post-Doctoral

Some of the Planned Events for the 2019 Year include:

- Grant/Fellowship Writing Workshop
- Science Festival at Ronald McDonald House
- National Chemistry Week at Carnegie Science Center
- Negotiation Workshop
- Adopt-A-Vet Holiday Stocking Drive
- Careers in Chemistry Symposium for High School Students
- Networking Dinners / Socials
- Scientific Poster Workshop
- Scientific Writing Skills Workshop
- Girl Scout Workshops
- Breast Cancer Fundraisers
- Achievement & Mentoring Awards
- Professional Development Workshop for Undergraduates
- Celebrating Diversity Panel Discussion

We encourage any gender from any institution that is interested in increasing diversity and excellence in the chemical sciences to become a part of the WCC.



Information about membership and upcoming meetings/programs can be found on our website, Facebook page, and LinkedIn page. See www.pghWCC.org



Pittsburgh Mass Spec Discussion Group

Practical Problem Solving with LC/MS – The Real World *A Pittcon Quality Course in our Backyard*

Tuesday, March 5, 2019

Duquesne University – Power Center (8th Floor)

600 Forbes Ave, Pittsburgh PA 15282

Prerequisite and Target Audience

Recommended for Analysts who have used LCMS previously or who want to see real world problems solved with the use of LCMS. Anyone using HPLC now and considering adding an LCMS detector to see what it will add to their lab, anyone doing chemical research, pharmaceutical analysis, food chemistry, organic synthesis, environmental analysis, QC, structural analysis, etc. will benefit from this course.

Questions Answered

- √ What sensitivity is possible/expected? What causes sensitivity loss? What can be done to improve sensitivity?
- √ Which is the better mobile phase for LCMS, Methanol or Acetonitrile? How long can a mobile phase be used?
- √ What additives can I use and what are the best? How much does concentration of additives/buffers matter?
- √ What is the best HPLC column for LCMS?
- √ How can I make more ions? How can I minimize multiply charged ions?
- √ How can I determine the best settings for collision energy or voltages?
- √ How can I improve quantitation reproducibility?
- √ Is it better to have more resolution or more mass accuracy? What is spectral accuracy?
- √ Does nitrogen purity matter?
- √ What are the limitations of my current hardware?
- √ What software can I use to mine my data more effectively? How do I incorporate data-dependent experiments into my projects?

Cost

Professionals: \$25.00

Students: \$15.00

Parking not included. Coffee and buffet lunch included.

Registration is limited to the first 50 people.

Please RSVP by Tuesday, February 26, 2019.

Make check payable to SSP and mail the registration form below to:
Heather Juzwa, Chair 2018-2019 SSP MSDG, 321 Winners Circle, Canonsburg, PA 15317



Name: _____ Affiliation: _____

Mailing Address: _____

Phone: _____ Email: _____

MS Instrumentation and software currently utilized: _____

Please indicate dietary restrictions.

February 2019/The Crucible

Practical Problem Solving with LC/MS – The Real World

A Pittcon Quality Course in our Backyard

Tuesday, March 5, 2019

Duquesne University – Power Center (8th Floor)

600 Forbes Ave, Pittsburgh PA 15282

9:00 AM – 4:00 PM

Abstract

This is a course in LCMS for people who have done some LCMS previously. It focuses on the practical aspects of LCMS. The key understanding will be the 'what, where, why and how' of LCMS including real world examples at each step. The course will pose various problems that people have and then show ways to solve each question. For example, one of the questions will be 'Why are my results changing when I haven't changed anything?' or 'How much can I improve my sensitivity without having to buy new hardware?'

Numerous practical applications will be used to illustrate key points such as how different classes of molecules ionize or how simple changes in chemistry affects sensitivity. It thoroughly explores how to avoid the pitfalls and problems most common for users of LCMS such as how to prepare a sample for LCMS analysis and how to develop LCMS friendly methods. The course will show how to deal with complex samples, improve sensitivity, and speed up analyses. Identification of common impurities and artifacts will also be covered. It will also explore specific application areas including data mining software.

About our Trainers

The presenters have more than 50 years combined expertise with mass spectrometry. They teach these very course concepts at Pittcon and other conferences.

Bob Classon has several decades of experience with applications for both HPLC and LCMS, having worked at Waters Corporation and Shimadzu Scientific Instruments, Inc.. His focus is on getting better results from your existing instrumentation and improving sensitivity. He has delivered numerous talks, short courses and publications on chromatography and mass spectrometry.

Ross Willoughby has Pittsburgh roots and did his undergrad at the University of Pittsburgh. He was formerly the Vice President of R&D for Extrel, and is a pioneer in hardware design for mass spec. He is co-inventor of Particle Beam LC/MS, and has built LC/MS instruments. Ross has over 50 patents issued on mass spectrometer technology, and is also co-author of the popular book "A Global View of LC/MS."

Practical Problem Solving with LC/MS – The Real World

A Pittcon Quality Course in our Backyard

Tuesday, March 5, 2019

Duquesne University – Power Center (8th Floor)

600 Forbes Ave, Pittsburgh PA 15282

9:00 AM – 4:00 PM

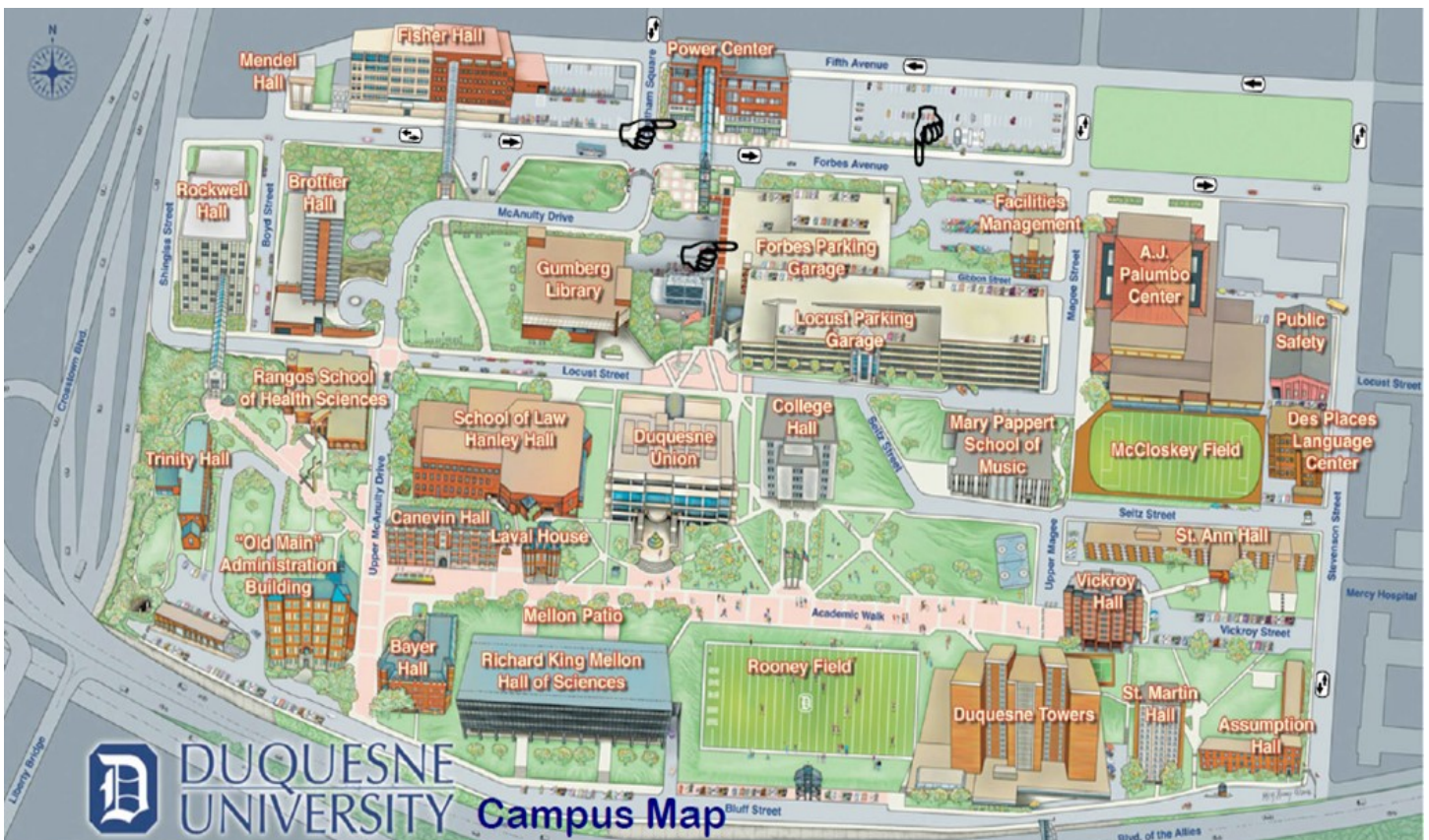
Finding the Power Center

The Power Center is located at 600 Forbes Avenue, Pittsburgh, PA 15282. There is a parking garage adjacent to the Power Center, also at 600 Forbes Avenue.

From the parking garage, take the elevator to the 8th floor level. At this level, go to the right and walk through the enclosed Skywalk to the Power Center Ballroom.

Once in the Power Center, you will be on the 5th floor where the Ballroom is located.

For driving directions to Duquesne University, please go to their website: www.duq.edu, under “About DU” then under Campus Map.





The Visible Difference In Laboratory Science Expositions

Join thousands of chemists and scientists from around the world at Pittcon, an all-in-one event offering a high-caliber technical program, skill-building short courses and a dynamic exposition showcasing the latest scientific instrumentation and services. We are proud to have the ACS as a co-programming partner again for Pittcon 2019. Don't miss the ACS Poster Session, Symposia, Awards Lecture and other presentations lead by your fellow members.

Pennsylvania Convention Center | Philadelphia, PA | March 18 - 21 | www.pittcon.org





2019 Tripartite **CHEMISTS WITHOUT BORDERS**



Saturday, May 18, 2019, 8:30 am – 1:00 pm
Carlow University – AJ Palumbo Hall of Science and Technology
3333 Fifth Avenue, Pittsburgh, PA 15213

- 8:30** Registration and Opening Remarks
- 9:00** Chemists Without Borders: Past, Present and Future
Dr. Bego Gerber
- 9:45** Applying Chemistry to Solve Problems in the Developing World
Dr. Ronda Grosse
- 10:30** Intermission
- 10:40** Studying Abroad in Chemistry: An Opportunity for Undergraduate Chemistry Researchers to have an International Impact in Chemical Education
Dr. Bakarr Kanu
- 11:25** Chemists Without Borders Arsenic Project Development: Confronting the largest mass poisoning of a population in history by providing clean water in Bangladesh
Dr. Steve Chambreau

12:10 Luncheon and Discussion

OPEN TO THE PUBLIC

Please register by Friday, May 10th.

Registration Fee: \$10 - Luncheon & 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 2019 REGISTRATION FORM

Name: _____ Affiliation: _____

Mailing Address: _____

Email: _____ Phone: _____

_____ I am attending the luncheon. Dietary Restrictions: _____



Dr. Bego Gerber

- Chemists Without Borders: Past, Present and Future



Dr. Ronda Grosse

- Applying Chemistry to Solve Problems in the Developing World



Dr. Bakarr Kanu

- Studying Abroad in Chemistry: An Opportunity for Undergraduate Chemistry Researchers to have an International Impact in Chemical Education



Dr. Steven Chambreau

- Chemists Without Borders Arsenic Project Development: Confronting the largest mass poisoning of a population in history by providing clean water in Bangladesh

Chemists Without Borders: Past, Present and Future

Bego Gerber



Hear the remarkable story of some remarkable people making a remarkable difference. What are the foundations of Chemists Without Borders? Why does it exist? How does it work? Why does it matter? Who is affected? What have we learned? Where do we all fit in? What is possible?

Bego Gerber is Managing Director of Business Development International, a lifestyle marketing company, and is an Executive Associate accredited by the Institute for Independent Business. Dr Gerber's expertise ranges from academic medical research to patented new product development in a no-walls start-up and in Fortune 100 R&D; and from idea processing and information management to entrepreneurial lifestyle marketing and the development of B-Quadrant businesses on the Internet. He also spent many years as a passionate court appointed special advocate for abused and neglected children. Bego was educated at Heriot-Watt University in Scotland, has Master's and Doctoral degrees from the University of California, Santa Barbara, and was a postdoctoral fellow at the Johns Hopkins University.

Bego is Chairman and Co-Founder of Chemists Without Borders, and focuses on board development, fundraising, public relations and partnerships.

Applying Chemistry to Solve Problems in the Developing World

Ronda Grosse*, Rolande Hodel, Marya Lieberman, Julian Tyson



Chemists Without Borders is a non-profit organization, comprised primarily of volunteer chemists, with the mission of solving humanitarian problems by mobilizing the resources and expertise of the global chemistry community and its networks. Work to date has involved clean water initiatives, science education in developing countries, and inexpensive tests for analysis of medicines. This presentation will review projects aimed at improving living conditions in South Asia, including measuring heavy metal concentrations in the Bangladesh food supply and renewable energy options for affordable housing in India. Projects in Africa include development of paper analytical devices to provide high quality chemical analysis of pharmaceutical samples and prevent falsified or substandard medications. Recent work in Kenya will be shared. Additionally, AIDSfreeAFRICA has set up a laboratory in Cameroon for drug testing. The status of these initiatives, technical progress, and ongoing opportunities and challenges will be discussed.

Ronda Grosse received her Ph.D. in analytical chemistry from the Ohio State University and her B.S. in chemistry from Bethel University in St. Paul, Minnesota. She has worked as an industrial chemist for 25 years in laboratory and managerial roles at Dow Corning Corporation. Her primary expertise is in molecular spectroscopy, chromatography, and mass spectrometry for materials characterization. Ronda is an active member of the American Chemical Society. She is an advocate for science education and conducts chemistry demonstrations in local schools, as well as other outreach activities.

Ronda is on the Board of Directors at Chemists Without Borders. She serves as the organization's liaison with the ACS. Ronda actively supports Chemists Without Borders' projects by providing technical guidance and assisting with grant writing and other communications.

Ronda's international experience includes scientific research in Japan and an affordable housing project in India. She is passionate about improving quality of lives by combining science and service, and exploring sustainable ways that we can collectively create positive change in our global community. Originally from New Castle, Pennsylvania, she resides in Saginaw, Michigan, with her husband and two daughters.

Studying Abroad in Chemistry: An Opportunity for Undergraduate Chemistry Researchers to have an International Impact in Chemical Education

Bakarr Kanu



Developing undergraduate research through service learning is a high impact practice that can greatly influence student engagement and success. In this project, a team of scientists has been working to develop inexpensive microchemistry kits to facilitate Chemistry Education in West Africa. Since 2015, several undergraduate STEM majors have engaged in research with the nonprofit organization, Chemists Without Borders, to enhance chemistry education in Sierra Leone. The ultimate goal has been to provide chemistry laboratory kits to high school and first-year university students' in Sierra Leone by training teachers to use the kits in their classrooms. In addition to standard labs that will help students understand basic chemical concepts, most of the STEM experiments developed for this project will focus on the application of chemistry towards practical knowledge relevant to the lives of ordinary Sierra Leoneans. Currently, we have assembled 15-lab activity kits ready for use in Sierra Leone. To implement this project, we developed a study abroad class at Winston-Salem

State University (WSSU) and we expect to offer this class in spring 2019. Students enrolled in this course will have the opportunity to travel to Sierra Leone and conduct a workshop to train teachers who will in turn use the kits in their classrooms. In addition, they will have an opportunity to learn about the politics, history, and culture of Sierra Leone. Upon implementation of this project, we anticipate the kits to service between 200-500 teachers and students, covering approximately 50 schools in Sierra Leone annually. Our hope is that once this project is executed successfully, it will be expanded to other English-speaking countries. We anticipate this service learning research project will attract students from underrepresented groups and influence their engagement in STEM activities at WSSU and the broader community of scientists.

Dr. Kanu received his Ph.D. in Instrumentation and Analytical Chemistry from the University of Manchester, Manchester, United Kingdom in 2003. His Ph.D. work developed a novel sampling device with "active membranes" that reduced sampling time by 60% and increased sensitivity by 25%. His sampling device, interfaced to several separation-typed instruments was used to characterize environmental pollutants. One of his papers, published in the Journal of Environmental Monitoring, January 2007 issue, was selected to appear on the front cover of the journal as a current cutting-edge research development on environmental processes and impact. In 2008, a second paper he published in the Journal of Mass Spectrometry, January 2008 issue, appeared on the front cover of the journal. Dr. Kanu is an expert in separation-type instrumentation techniques including gas and liquid chromatography, mass spectrometry, capillary electrophoresis, ion mobility mass spectrometry, to name a few. Dr. Kanu currently has over thirty-two peer-reviewed scientific publications in top-rated reputable journals, over fifty presentations and two patents (related to sample introduction interfaces). Dr. Kanu has mentored several undergraduate and graduate students in research and is very interested in developing activities to increase number of minority students enrolled and retained in STEM disciplines. Since joining WSSU, he has mentored over thirty undergraduate students in research and many have presented their results at regional and national conferences. One of Dr. Kanu's mentees won the Best Poster in Chemistry award at the 2016 Annual Biomedical Research Conference for Minority Students (ABRCMS).

His current research is modifying separation-type instrumental techniques to achieve rapid analysis of chemical and biological compounds. He is interested in investigating the fate of compounds like environmental soil-gas and water contaminants, drugs, explosives, chemical warfare agents, total suspended particles, nucleotides, nucleosides, peptides, proteins, forensic, and biological samples in complex matrices. Dr. Kanu has been studying the ingredients from plant sources to identify chemical compounds that may be useful for promoting health and/or fighting diseases. Additionally, he is interested in the chemical synthesis of novel polymers that may be useful in alternate energy and military type applications.

Dr. Kanu is the American Chemical Society Student Chapter Faculty Advisor (WSSU Chapter). His responsibility is to provide guidance and mentorship to the executive members and foster their smooth operation. Since 2012, the organization has volunteered in a number of community events. Dr. Kanu has membership is eight professional organizations and he is the current WSSU representative to National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE) Collaborative Institutional. Dr. Kanu has developed curricular materials and pedagogical methods for instrumental analysis, quantitative analysis, and forensic chemistry. He has also developed and implemented guided inquiry projects in the laboratory portions of quantitative and instrumental analysis.

Chemists Without Borders Arsenic Project Development: Confronting the largest mass poisoning of a population in history by providing clean water in Bangladesh

Steven Chambreau



Dr Chambreau demonstrating the Hach arsenic test kit to students at Palmdale High School, Palmdale, CA

Back in the 1970s, in an attempt to provide hygienic drinking water in Bangladesh, the United Nations International Children’s Emergency Fund (UNICEF) and other aid agencies began installing millions of tube wells in Bangladesh villages as an alternative source of drinking water to contaminated surface water supplies. The program, which continued through the 1980s, was an early success. Instances of cholera, microbe-caused diarrhea, and other diseases dropped dramatically. But no one thought to analyze water for trace and ultra-trace impurities, and soon the good news turned bad. By the early 1990s, villagers began breaking out with skin disorders and experiencing fatigue symptoms of arsenicosis from drinking the water. Arsenic poisoning in drinking water in Bangladesh has been identified as one of the world’s greatest humanitarian disasters, with the World Health Organization characterizing the situation as “largest mass poisoning of a population in history.”

Out of 150 million people in Bangladesh, 35-77 million people are at risk from arsenic contamination of water. It is estimated that between 1-5 million children are at risk of death by arsenicosis, or arsenic poisoning, by 2030. Many countries with arsenic-contaminated groundwater do not face the same catastrophic outcomes as in Bangladesh, in part due to inaction on the part of the Bangladesh government. Clearly there are no simple, easily implemented solutions that would provide “arsenic-free” water in sufficient quantities to meet the requirements of communities in rural Bangladesh for drinking, cooking and irrigation of crops (particularly rice). Chemists Without Borders works to remedy this. The Arsenic Project in Bangladesh will be described from its inception and how the project has evolved into the work that is currently underway today, involving arsenic education, arsenic testing of wells and the development of alternative drinking sources in Bangladesh.

Steve Chambreau is a Co-founder of Chemists Without Borders, and has served the organization previously as Vice President, President and Director. Dr. Chambreau is a Research Scientist in the Propellants Branch at the Air Force Research Laboratory at Edwards Air Force Base, where he studies chemical dynamics. Steve grew up in California, attended school at UC Berkeley (BS 1993), San Diego State University (MS 1997), and UC Riverside (PhD 2002). He spent 2 years working as an NRC Associate at the Air Force Research Laboratory at Hanscom AFB near Boston, and 2 years as a postdoc with Professor Arthur Suits at Wayne State University investigating the H-atom roaming mechanism. Dr. Chambreau’s primary interest in Chemists Without Borders involves water quality issues, and he initiated the Arsenic Project in Bangladesh. In his various roles, Dr. Chambreau assisted Chemists Without Borders development in many ways including development of the mission and vision statements, incorporating the organization and obtaining 501(c)(3) non-profit status, fundraising, project development, and membership management.

Parking

Enter parking lot at the corner of Craft and Fifth Avenues. The AJ Palumbo Center is directly across the street from the parking lot.



SACP/SSP February Meeting

[Continued from Page 5](#)

Pratt Bio

Dr. Pratt's research group is already making noteworthy contributions to atmospheric chemistry that are enabled by advancements in analytical chemistry, allowing her to tackle critical scientific questions in the Arctic where low analyte concentrations and logistically difficult conditions challenge traditional methods. For her innovative research, she has received numerous awards, including the American Society for Mass Spectrometry Research Award (2014), Society for Analytical Chemists of Pittsburgh Starter Grant Award (2014), National Academy of Sciences Gulf Research Program Early Career Fellowship (2016), Sloan Research Fellowship in Chemistry (2017), American Chemical Society James J. Morgan Environmental Science & Technology Early Career Lectureship (2018), Department of Energy Early Career (2018), Analytical Scientist Top 40 under 40 Power List (2018), and Eastern Analytical Symposium Young Investigator Award (2018). She is a working group co-chair of the International Global Atmospheric Chemistry (IGAC) Project activity "air Pollution in the Arctic: Climate, Environment, and Societies" (PACES) and is the liaison between PACES and the IGAC activity "Cryosphere and Atmospheric Chemistry" (CATCH). In addition, she is on the National Center for Atmospheric Research Atmospheric Chemistry Observations & Modeling Laboratory Advisory Panel for Instrumentation and ACS *Earth & Space Chemistry* Editorial Advisory Board. She has also made significant contributions to teaching through her development of a novel introductory chemistry laboratory course involving a semester-long authentic research experience in snow chemistry, for which she was awarded the University of Michigan Chemistry Seyhan N. Ege Junior Faculty Award (2016) and College of Literature, Science, and the Arts Individual Award for Outstanding Contributions to Undergraduate Education (2017).

Hounshell Bio

the University of Delaware in Newark, Delaware. His research focuses at the intersection of science, technology, business, and government policy. He began his teaching career at Harvey Mudd College in Claremont, California, in 1977 and later taught at the University of Delaware for twelve years. Carnegie Mellon University named him Henry R. Luce Professor of Technology and Social Change in 1991. In 1999, he became the David Roderick Professor of Technology and Social Change at CMU and held this professorship until his "retirement" in 2017. Hounshell has also taught as a visiting professor at the Technical University of Munich (Germany) and Chalmers Technological University in Gothenburg, Sweden. In 1978, Hounshell won the Browder J. Thompson Prize of the Institute of Electrical and Electronics Engineers, of which he is now a Life Member. His 1984 book, *From the American System to Mass Production, 1800-1932* (Johns Hopkins University Press) received the Dexter Prize of the Society for the History of Technology in 1987. His 1988 book (with John Kenly Smith, Jr.), *Science and Corporate Strategy: DuPont R&D, 1902-1980*, (Cambridge University Press) received the Newcomen Book Award of the Business History Conference in 1992. Hounshell is the recipient of the Business History Conference's Harold Williamson Medal (1992) and the Society for the History of Technology's Leonardo da Vinci Medal (2007). He was named a Fellow of the American Association for the Advancement of Science in 2001 and served as President of the Society for the History of Technology, 2003-2004. Hounshell has also served as a Research Fellow at the Smithsonian Institution and was Marvin Bower Fellow at the Harvard Business School. Most recently, Hounshell chaired a panel of the National Academy of Sciences/National Research Council that commemorated the 100th anniversary of the NAS's/NRC's participation in World War I. Hounshell is currently at work on a history of industrial research, 1875-2015.



Dear Academic ACS Pittsburgh Section Members,

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. Awards will be made based on the scientific merit of the paper/poster to

be presented, financial need, and preference will be given to ACS members.

To apply for the funds, applicants should complete the attached application and return it by the relevant deadline. The deadlines for receipt of applications are as follows:

- **06/01 (for travel to be completed by 12/31)**
- **12/01 (for travel to be completed by 06/30)**

As noted on the application, students should include an abstract and confirmation (if received) of the paper/poster being accepted for the Meeting. In addition to the application form, applicants should include a recommendation letter from the PI of the project being presented and/or a recommendation letter from another and a personal statement as to the anticipated benefits of meeting attendance.

Applications can be made electronically (*preferred*) by emailing the application to Heather Juzwa

(hlijuzwa@shimadzu.com or heather_sapko@hotmail.com) or by mailing a hard-copy application (Pittsburgh Section ACS Travel Grants / Heather Juzwa / Center / 321 Winners Circle / Canonsburg, PA 15317).

Since 2013, the Pittsburgh Section of the ACS has awarded up to four \$500 grants each year to aid our undergraduate/graduate student members in presenting papers or posters at ACS Meetings.

This is an ongoing program in our Section, and details will be updated on our website, (www.pittsburghACS.org), as necessary.

Applicants will be notified via email that their application was received. All efforts will be made to announce awards within two weeks of the application deadline, and all applicants will be notified of the final committee decisions. 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 me.

Sincerely,

Heather Juzwa, ACS Pittsburgh Section Student Travel Grants, Chair
Senior Field Sales Engineer, Shimadzu Scientific Instruments, Inc.



<i>Application Deadline</i>	<i>Travel Completion Date</i>
December 1 st	June 30 th (subsequent year)
June 1 st	December 31 st (same year)

Name of Applicant: _____

Name of Institution: _____

_____ Undergraduate Student / Year

_____ Graduate Student / Year

Mailing Address to Receive Payment if Awarded _____

Email: _____ Phone: _____

PI: _____

ACS Membership No.*: _____

**If you do not know your ACS number, please email hljuzwa@shimadzu.com to receive it by email.*

Meeting Location: _____ Meeting Date: _____

Project Title: _____

_____ Paper Presentation _____ Poster Presentation

**Please attach a copy of your project abstract to the application.*

Has your project been accepted? Yes No

**Attach documentation regarding acceptance if received at point of application.*

Will this be your first presentation at an ACS national or regional meeting? Yes No

If no, please list conferences at which you have presented: _____

Purpose of grant: _____

Other funding sources (if any):

Personal Statement of anticipated benefits of meeting attendance

Has the applicant received a travel grant from the ACS Pittsburgh Section in the past? Yes No

If your application was selected, the Pittsburgh Section of the ACS would like you to write a short (one page) description of your activity upon completion of the conference for publication in our monthly newsletter, The Crucible, and on our website. The description is due within 30 days of the meeting attended.

I am willing to complete this report: Yes No

Signature: _____

Date: _____

Send completed hard-copy applications and supporting documentation to:

Pittsburgh Section ACS Travel Grants

Heather Juzwa

321 Winners Circle

Canonsburg, PA 15317

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Services

Services

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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 March 2019 issue must be to the editor by February 15, 2019.

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

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The Crucible

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Spectroscopy Society of Pittsburgh

- Professional Networking within the Spectroscopy Community
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- 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

Saturday, February 9

Job Searching for STEM Professionals

Maurice Lecture Hall in Mellon Hall of Sciences
Duquesne University, 600 Forbes Ave, Pittsburgh, PA

Thursday, February 21

ACS Energy Technology Group

“Petroleum Pioneers of Pittsburgh”

Al Mann
Lombardozzi’s Restaurant - Bloomfield, 4786 Liberty Ave,
Pittsburgh, PA 15224

Wednesday, February 13

SSP Technology Forum

“Novel Applications of Mass Spectrometry to Atmospheric Chemistry”

Dr. Kerri Pratt, University of Michigan
Duquesne University, Pittsburgh, PA

Wednesday, February 13

SACP Technical Meeting

“Pittsburgh’s Industrial History Through the Lenses of Geography, Materials and Knowledge Production”

Dr. David A. Hounshell, David Roderick Professor, Emeritus, of Technology and Social Change, Carnegie Mellon University
Duquesne University, Pittsburgh, PA

Tuesday, March 5

Pittsburgh Mass Spec Discussion Group

“Practical Problem Solving with LC/MS—The Real World”

Duquesne University Power Center
600 Forbes Ave, Pittsburgh, PA

March 18-21

Pittcon
Pennsylvania Convention Center, Philadelphia, PA