March Section Meeting: Career Workshop

March 6, 2016 • 8:00 am - 5:00 pm
DoubleTree Wilmington, 4727 Concord Pike, Wilmington, DE 19803

For information on section activities visit our web site at:
www.delawareacs.org
**Good News—**

Good News - H.N. Cheng is a former member of the Delaware Section who was employed at Hercules. He did impressive NMR work on polymers and was a strong supporter of ACS. He and Norm Henry welcomed me to our Section when we moved here in 1998. He later moved to New Orleans and became a research chemist for the Department of Agriculture. H.N. will be recognized at the San Diego meeting with the Award for Volunteer Service to ACS. He is the closest person that I have met to being a Perpetual Motion Machine.

Another Delaware chemist to be recognized in San Diego is Henry Bryndza of Dupont. He will receive the Earle B. Barnes Award for Leadership in Chemical ResearchManagement. Henry is also a major supporter of Tri State Bird Rescue of Delaware.

**More Good News—**

Many of you remember Sujata Bhatia, PhD, M.D. who served as Chair of this Section several years ago. Sujata worked in Biomedical Research at Dupont before accepting a position at Harvard University a few years ago. She is back!

Starting February 1, Sujata will be Professor of Chemical and Biomolecular Engineering at the University of Delaware. She will probably raise the average I.Q. of our state by about 20%.

**Dupont Research Notebooks—**

If you worked for Dupont, you were required to record every experiment in great detail. Every page had to be signed, dated and witnessed. When you left the company, your notebook stayed! There must be thousands of these in storage, a treasure of scientific history dating back to gunpowder in 1802. It must cost a fortune to maintain this collection in a climate-controlled space.

Perhaps former employees still living could be given their old notebooks, or at least those up to the year 2000. These notebooks might provide pleasant memories and a few laughs. Some might even provide material for interesting publications.

I would be curious to read my final entry on Friday afternoon, November 22, 1963. I was at the Pioneering Research Lab at the Experimental Station when we heard that President Kennedy had been shot in Dallas.

We gathered around a few radios and listened to every word. Finally it was announced that he was dead! We locked up our notebooks and quietly left for home. I sat in front of the T.V. set all weekend as

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How long is the way from innovation to a profitable product? The quick answer is that it depends - it can range from months to years to decades. More importantly, it has never been easy or straightforward. I believe that many of us are intrigued by the stories behind successes, especially when accidents and surprises were involved. One of my favorite is the commercialization story of 3M’s Post-it® Notes.

An organic chemist from 3M, Spencer Silver, accidentally invented a “low-tack, reusable, pressure sensitive adhesive” in 1968. “It was part of my job as a researcher to develop new adhesives, and at that time we wanted to develop bigger, stronger, tougher adhesives,” said Silver. “This was none of those”. For years, Spencer struggled to find applications for his acrylic polymer microspheres-based adhesives. In 1974, his colleague, Art Fry came out with an idea to use this adhesive to stick the bookmark to his hymnbook and remove without damaging the paper. Failed in the first round introduction to the market as Press ’n Peel in 1977, followed by a successful free sampling trial directly to the customers, Post-it® Notes was reintroduced to the market in 1980. It took 6 years in application development and another 6 years in market development for Post-it® Notes to become commercialized. Post-it® Notes is now a 1-billion dollar business ranking top 5 in office supplies. To tell a short story here, I didn’t even mention the details of the obstacles in the initial manufacturing and launching of this completely new product. Post-it® Notes is revolutionary and transformative. Nobody would think they need something like sticky notes before they see it on the market. Several other 3M products were developed based on similar ideas behind Post-it® Notes.

There are tons of similar stories that happened in Delaware. It’s one of the most difficult things to recognize/identify the value proposition and finally go through a commercialization route. It becomes more
difficult nowadays because of the distraction from thousands of other things for the investors, management and shareholders. The point I want to make here is that, don’t look down on some opportunities that appeared to be small now. With persistence from everybody, it can grow into something big.

On Feb 3rd, we were glad to have a joint meeting with DESCA to introduce the “Innovation to Invoices (I2I)” program, which is a workshop to help innovators commercialize innovative ideas and open start-up companies, to our members. We had a great turnout: over 60 people attended the event. Many of them have signed up following I2I workshops or programs participation forms. You will find some pictures of this event included in this issue. Thanks to Dora Cheatham, Lori Palmer, and Seetha Coleman-Kammula from DESCA and Tiffany Hoerter from the Section for organizing this great event.

Tiffany Hoerter is chairing our March monthly meeting – a career event on March 6th (Thanks, Tiffany!). Inviting career consultants from national ACS, this whole-day workshop offers individualized guidance in writing resumes, mock interviews, and other assistance to help our members on professional development.

**PRESENTATIONS:**
Acing the Interview: 8 - 12  
Industrial Resumes: 1 – 3  
**SPEAKER:** ACS Career Consultant Joe Martino

**SERVICES:**
Resume Review: 8-5  
Mock Interviews: 8-5

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**March Section Meeting: DE ACS Career Event**  
**Join DE ACS for a day of career related programming**

**Date:** March 6, 2016  
**Time:** 8:00 am to 5:00 pm.  
**Location:** Double Tree Wilmington, 4727 Concord Pike, Wilmington, DE, 19803  
**Event Type:** Registration Required (lunch included)  
**Fee:** Free  
**Registration:** visit [http://www.delawareacs.org/](http://www.delawareacs.org/)

Having invited career consultants from national ACS, this whole-day event will be a great opportunity to obtain individualized guidance in writing resumes, mock interviews, and other assistance to help our members on professional development.

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First Friday: “Sounds Good: How the Science of Sound Reproduction Changed Imagination”

Date: March 4, 2016
Time: 5:00 p.m. to 8:00 p.m.
Location: CHF, 315 Chestnut Street, Philadelphia, PA 19106
Event Type: Open to the Public
Fee: Free
Registration: Not Required

How did the science of sound reproduction change imagination? Find out at the kickoff to our First Friday season where theater brings the technical history of sound reproduction to life. Enjoy the Mechanical Theater Company’s live performance of Marionettes, Inc., a short play by Ray Bradbury that originally aired on NBC radio in December 1955. Learn about how sound effects were made in classic radio plays, and decide for yourself whether what you “hear” affects what you “see.”

This month’s program will take place at 5:45 p.m. and 6:45 p.m. This event is presented in conjunction with our latest exhibit, Science at Play, open through September 2, 2016. The Museum at CHF will be open for self-guided tours throughout the evening.

Joseph Priestley Society: David DeVore It Pays to Be Tacky: Lessons Learned in Growing a Small Specialty Chemical Company

Date: March 10, 2016
Time: 11:30 a.m. to 2:00 p.m.
Location: CHF
315 Chestnut Street, Philadelphia, PA 19106
Event Type: Open to the Public
Fee: $25
RSVP Online: Registration Required
http://www.chemheritage.org/visit/events/public-events/2016-03-10-jps.aspx

This month’s Joseph Priestley Society program features a keynote address by David DeVore. Since 2004 DeVore has been an owner and the president of Functional Products Inc.

In his talk DeVore will share his successes and challenges in running a small chemical company over the past 12 years with the hope that others may be emboldened or cautioned in launching their own enterprise. It will be a whirlwind talk, touching on many different aspects of leadership in small-business enterprise, such as how to find companies to acquire, how to finance companies, hiring good people, firing underperformers, setting objectives, competing against multibillion-dollar firms, and selling both to the world’s largest firms and to “two-man shops.” The message is simple: lead technically, kill for customers, and do it every day.
Science on Tap

Date: March 14, 2016
Time: 6:00 p.m.
Location: National Mechanics
22 S. Third Street Philadelphia, PA 19106
Event Type: Open to the Public
Fee: Free
Registration: Not Required

Science on Tap is a monthly science café in Philadelphia for anyone interested in getting together with other people to discuss a range of engaging science topics. It is held the second Monday of (most) every month.

Located at National Mechanics, a relaxed, convivial bar in Old City, Science on Tap features a brief, informal presentation by a scientist or other expert followed by lively conversation. The goal is to promote enthusiasm for science in a fun, spirited, and accessible way, while also meeting new people. Come join the conversation!

This event is hosted by the American Philosophical Society. Please check back for topic and speaker details.

Topic: check http://www.chemheritage.org/visit/events/public-events/2016-03-14


Date: March 14, 2016
Time: 12:00 to 1:00 p.m.
Location: CHF, 315 Chestnut Street, Philadelphia, PA 19106
Event Type: Open to the Public
Fee: Free
RSVP Online: No Registration Required

In 1972 the Museum of Decorative Arts in Prague launched “Plastic Design,” a study devoted to surveying Beckman’s talk examines the publication strategies of the Swedish chemist Jöns Jacob Berzelius (1779–1848). Berzelius is a famous figure in the history of chemistry, known for, among other things, his work on atomic weights and chemical proportions, introducing a new system of chemical notation, isolating and naming several elements, and ruling the Royal Swedish Academy of Sciences for 30 years as its permanent secretary.

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Brown Bag Lecture: The Publication Strategies continued from page 6

A prolific author and editor, he fundamentally reorganized the Swedish Academy publications. In the new journal Annual Survey of Progress in the Sciences (1821–1848), he summarized and evaluated scientific achievements at home and abroad, and promoted his views on what constituted a proper publication. He relied on his considerable reputation in chemistry, and his opinions—not least in the Annual Survey—carried weight. At the same time, he wrote in an insignificant language geographically far from the main thoroughfares of science and relied on translations, letters, and publications to communicate with his colleagues. Beckman suggests that Berzelius’s views on scientific publication are particularly revealing, speaking as he was from a position that is both central and peripheral.

Jenny Beckman is a senior lecturer in the history of ideas and science at the Department of History of Ideas and Science, Uppsala University. Her research focuses mainly on the history of biology, science education, and civic science. Her publications include articles on natural history museums, school science, amateur botanists, and biodiversity recording projects. Her current research focuses on scientific publication practices in the first half of the 19th century.

ChemVets Meeting
Polymers and the Portable Environment
Norman W. Henry III MS, CIH

Date: March 15, 2016
Time: 12 p.m. –2 p.m.
Location: DuPont, Chestnut Run Laboratories
12:00 Lunch (Admin. Bldg.)
1:00 Lecture (Bldg. 713 auditorium)
Event Type: Open to the Public
Fee: None
Registration: Not Required
Abstract:
Both natural and synthetic polymers have played an important role in preventing exposure and protecting man in extreme weather conditions on earth, in space and in hazardous occupational environments. Since synthetic clothing materials have replaced natural polymers such as rubber, they have been used extensively for to protect man because they can be molded into gloves, and fabricated into total encapsulated suits that form a barrier from extreme physical conditions, chemical exposure and biological agents. These suits when equipped with an air supplied respirator become a portable

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environment offering head to toe protection that allow man to accomplish many feats without the need of engineering and administrative controls that may be impossible to use during an emergency or in some hazardous occupational environments.

There are many synthetic polymers available today such as neoprene; polyethylene, polyvinyl chloride, polyvinyl alcohol, nitrile, butyl and Viton just to name a few. Each of these polymeric materials offers some degree of permeation resistance to chemicals while other polymers such as Nylon and Kevlar offer strength and penetration resistance to physical agents such as projectiles and sharp objects. Nomex, an aramid polymer also protects against heat and fire. Combinations of these polymers (laminates) are also available and provide good barrier properties, however not all polymer materials are resistant to all chemical, physical and biological agents. While synthetic polymer materials are ideal to make suits, because of their physical properties such as elasticity, tensile strength and dexterity, not much was known about their capability to resist chemical permeation or biological penetration of micro-organisms nor penetration of physical hazards such as heat and radiation. In the early 1970’s NIOSH recommended wearing impervious protective clothing in their Criteria Documents for protection to hazardous chemicals. Back then selecting protective clothing was a guessing game. Degradation tests were done with swatches of materials to determine weight loss or gain, whether they dissolved, swelled or showed degradation over time. There was limited resistance data available and only some basic rules of thumb like “Like Dissolves Like” or Fick’s Law of Diffusion based on thickness. This presentation will discuss the voluntary development of degradation, penetration and permeation test methods that became ASTM standards to evaluate the performance of protective clothing polymers used to encapsulate man for protection against and resistance to hazardous chemicals, physical and biological agents. Data generated from these test methods helps select appropriate protective gloves or encapsulated suits whether responding to emergencies, working in the occupational environment and/or exploring unknown environments.

**Speaker’s Biography:**
Norm Henry is a retired senior research chemist and certified industrial hygienist from DuPont. He has a BA Degree in Chemistry from Lafayette College 1965 and a MS degree from the University of Delaware 1977. He worked for the DuPont Company for 40 years and currently is self-employed as an industrial hygiene consultant in his own Company, Safety and Health By Protection, SHBP. He has been active in the ACS for 50 years both in the local section (past chair, treasurer, director, councilor, and alternate councilor), awards, education and safety committees and nationally in the ACS Division of Chemical Health and Safety (CHAS). He is on the CHAS Board of Editors. He is also active in the American Industrial Hygiene Association (AIHA) where he has served on various technical committees and is an AIHA Fellow. He was a member of ASTM Committee F-23 On Protective Clothing and received an Award of Merit for work on protective clothing test methods. He is an emeritus member of the Health Physics Society.
ChemVets Polymers and the Portable Environment continued from page 8

(HPS) and currently works part time as a radiation control specialist for the office of radiation control division of public health (DPH) State of Delaware. He also served on the Authority on Radiation Protection for the State of Delaware for 25 years as a representative from industry. He has taught chemistry and environmental, safety and health courses at Delaware Technical Community College for the past 30 years. He has over 40 technical publications in chemical, radiological and biological safety and environmental health. He also serves as a community member on the University of Delaware’s Institutional Biosafety Committee.

For more information about this event, please contact Bruce Frye at bfrye6@yahoo.com


Date: March 21, 2016
Time: 12:00 to 1:00 p.m.
Location: CHF, 315 Chestnut Street, Philadelphia, PA 19106
Event Type: Open to the Public
Fee: Free
RSVP Online: No Registration Required

In 1972 the Museum of Decorative Arts in Prague launched “Plastic Design,” a study devoted to surveying the accomplishments of the plastics industry in Czechoslovakia. Rather than culminating in an exhibition of national designs, the museum’s study resulted in Design A Plastické Hmoty, a book displaying its subject through its neon plastic cover, white plastic two-ring binding, and numerous clear plastic overlays. Identifying the book’s purpose and intended audience poses a challenge: contemporary publishers describe it as “decidedly iron curtain” owing to editor Milena Lamarova’s discussion of plastics within the context of Czechoslovakia’s economy, yet there are numerous aspects of the museum’s project that elude the category of state propaganda. Published at a time when the museum building was censored and closed for renovation, the book features photographs of Czechoslovak examples alongside designs from such countries as Italy, Denmark, France, and Great Britain. It presents Prague and Bratislava as two dynamic nodes within an international network of designers utilizing new synthetics to revolutionize to the built environment.

Using Design A Plastické Hmoty as a starting point, Filipowska explores the importance of plastic materials and their design within Czechoslovakia’s Fifth Five-Year Plan. Her continued on page 10
Brown Bag Lecture: Plastic Design continued from page 9

study surveys the resolution of the 14th Congress of the Communist Party of Czechoslovakia, Lamarova’s research for the book, and contemporary trade journals. Focusing on furniture and home accessory design, she considers how plastics shaped the socialist consumer’s interaction with her changing environment and examines the role of publishing as an act of soft diplomacy.

Doan Fellow Roksana Filipowska is a PhD candidate in the history of art at the University of Pennsylvania, where she is writing a dissertation on artists’ experiments with thermoplastics between 1965 and 1975. Roksana runs Listening (to) Cyborgs, a media archaeology workshop on sound technology at UPenn, and has co-curated “Vulnerable Systems,” a screening of video art for the 2015 Biocode: Performing Transgression after New Media conference. She has worked at the Institute of Contemporary Art, Philadelphia, and the Albright-Knox Art Gallery in Buffalo, New York.


Date: March 28, 2016
Time: 12:00 to 1:00 p.m.
Location: CHF, 315 Chestnut Street, Philadelphia, PA 19106
Event Type: Open to the Public
Fee: Free
RSVP Online: No Registration Required

Can you watch a protein folding? Can you witness biomolecules in motion? Yes, says Klaus Schulten, you can see these as simulations in his “computational microscope” made not of glass and metal but of software. Since the late 1980s University of Illinois biophysicist Klaus Schulten has refined his models of molecular dynamics in massive Illinois supercomputers. Schulten’s work at the Beckman Institute for Advanced Science and Technology in Illinois requires an interdisciplinary team of natural scientists, computer engineers, and software programmers who build on Illinois’s deep history of supercomputing. From the 1980s through the present, how has a dynamic mix of public subsidies, private philanthropy, and interdisciplinary collaboration made possible Schulten’s molecular modeling in Illinois supercomputers?

This talk represents Roger Eardley-Pryor’s first case study for CHF’s Beckman Legacy Project, which explores and makes known the scientific life of Arnold Beckman and the work that continues to bear the Beckman name. The talk explores the various resources—intellectual, institutional, social, computational, financial—that enable computer

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Brown Bag Lecture: “Creating Schulten’s Computational continued from page 10

In addition to the invited lectures by renowned experts in membrane biophysics and biology, the symposium includes poster presentations by students and postdocs.
2016 Wallace H. Carothers Award Presentation and Banquet

“Working Against Time: Rapid Radiotracer Chemistry and Imaging the Human Brain” Recipient and Speaker: Joanna Fowler

Date: April 20, 2016

Time: 5.30 p.m. - 8.30 p.m.

Location: DuPont Country Club
1001 Rockland Rd, Wilmington, DE 19803

Event Type: Registration Required (dinner included)

Fee: $35

$5 for student and unemployed members *sponsored by gift from Joseph Labovsky

Registration: visit http://www.delawareacs.org/
events unfolded. It is a weekend that I shall never forget. This ultimately caused me to leave for academia in the following August.

**The Joys of Capitalism—**
Yes, I refer to The Merger. Two great American corporations will join together and then split into three companies. Will this actually happen? Will the Dupont shareholders vote to approve this merger at the annual meeting in the spring? All of my friends who own the stock vow to vote against the plan. But how about the pension funds, hedge funds and banks?

It is also possible that the Securities and Exchange Commission could object to the merger. In other words, it may not happen—after countless pink slips have been issued. Perhaps I am guilty of wishful thinking?

Dupont has survived for over 200 years. It helped preserve the Union during the Civil War. It helped the U.S. fight two World Wars. It created great products such as nylon, Neoprene rubber, Kevlar, Teflon and countless others. It did many good deeds in Delaware and provided great jobs and benefits.

Suddenly it seems like a handful of rich hedge fund guys, bankers and corporate wheeler dealers can disrupt two successful corporations and pull off a deal to enrich the few at the expense of many. Is this the American way? I hope not.
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