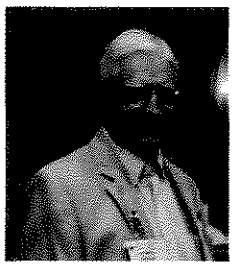
ACS Chemistry for Life®

Newsletter for Senior Chemists

December, 2013



Dear All:

The Senior Chemists Committee (SCC) held its second meeting in Indianapolis. It was agreed that the committee was getting its "second breath" and that a number of topics had to be addressed. One primary concern is programming; there were many suggestions for topics where the experience of SCC members would be advantageous. These were as varied as a joint program on international research with the International Activities Committee (IAC), a joint program with Corporation Associates on how to keep retirees involved in ongoing activities, and a series of programs with a "How We Did It" focus (e.g. developing a small chemical company, how to change jobs, how to establish an academic or industrial career, etc.).

The SCC is also focusing on some other activities. As an example, SCC will co-sponsor and share with IAC a hospitality lounge for attendees at the Dallas meeting. SCC will also sponsor a pair of ChemLuminary Awards for 2015, with the requirements made known in 2014 and solicitations for the awards based on senior events in local sections during 2014.

Going into its second year, SCC is very interested in hearing from senior chemists who may want to suggest topics that the SCC can investigate, or who would like to be considered for future SCC membership. Contact Cheryl Brown (c_brown@acs.org) with suggestions, and (secretary@acs.org) for consideration of future membership.

Another area where SCC is increasing its presence is in ACS Regional Meetings. We realize there are large numbers of retired chemists who would find these meetings more easily accessible than the national meetings and therefore we are planning programs that can fit into the model for regional planning. If anyone reading this is interested in helping us plan a senior event at a regional meeting, please let us know by emailing George Heinze, SCC Chair, at donnergeist@verizon.net.

Senior Chemists Committee

Mr. George E. Heinze, Chair
donnergeist@verizon.net

Dr. Ronald D. Archer
archer@chem.umass.edu

Dr. Roger F. Bartholomew
rbarthol@stny.rr.com

Dr. Thomas R. Beattie, Vice Chair
beattietr@aol.com

Dr. Dennis Chamot
dennischamot@yahoo.com

Ms. Maureen G. Chan
mgchan@verizon.net

Dr. Catherine E. Costello
cecmsms@bu.edu

Dr. Allen A. Denio
alvaldenio@aol.com

Ms. Susan R. Fahrenholz
fahrenholz@fordham.edu

Dr. Lynn G. Hartshorn
lghartshorn@stthomas.edu

Dr. Richard A. Hermens
richard.hermens@me.com

Dr. Morton Z. Hoffman
hoffman@bu.edu

Dr. Robert S. Moore

Finally, this newsletter goes to ACS members who are fifty or older. We have heard that some members feel getting a newsletter from the SCC is inappropriate for them. If you find yourself in this group, you can unsubscribe by clicking on the "unsubscribe" link at the bottom of the first page.

In closing, we wish all who read the newsletter a joyful and prosperous 2014.

George E. Heinze, Chair
Senior Chemists Committee

Bill Carroll to Speak at Senior Chemists Breakfast

Yes, we got him! William F. Carroll, Jr., currently Chair of the ACS Board of Directors and a former ACS President, has agreed to be our seniors' breakfast speaker at the Dallas ACS National Meeting in March.

By attending you will have an opportunity to hear Bill give a light-hearted talk entitled "Reese's Pieces: The Best of Newscripts and K. M. Reese". As Bill puts it, "... if you're like me, you probably read the beginning and end of *C&EN* before (and maybe instead of) the stuff in the middle". The back page, *Newscripts*, was the province of Ken Reese for nearly 35 years. His eclectic and wry sense of humor made that section the place that many of us turned to first.

This talk, which is an extension of a presentation made in the late Professor Jack Stocker's symposium "Whimsy in Chemistry", is a compilation of and commentary on some of the best and funniest blurbs presented in *Newscripts* between 1930 and 2000.

Sponsored by the Senior Chemists Committee and the ACS Development Office, the Senior Chemists Breakfast will be held on Tuesday, March 18, 2014, 7:30-9:00 a.m., Sheraton Dallas Hotel. When registering for the Dallas ACS meeting, be sure to register for our breakfast in the Social Events section. Ticket price is $15.00. As always, seats will be limited.

Tom Beattie, Vice-Chair
Senior Chemists Committee

Contact Us
silvercircle@acs.org

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Become a Docent!

Editor's note: Roger Bartholomew, a member of the Senior Chemists

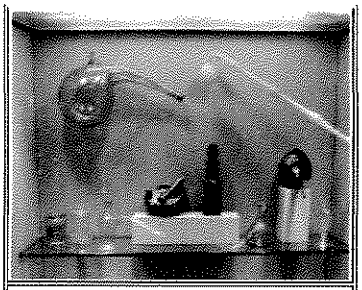


Photo by R.Bartholomew courtesy of Corning Museum of Glass

Committee, has an intriguing suggestion to answer the question: "What shall I do when I am retired so that I don't get bored?" His answer is "become a museum docent".

"Good morning, welcome to the Corning Museum of Glass. My name is Roger and I will be your tour guide today." This greeting starts the tour of the museum for a group which may include fifth graders to senior citizens and may number from ten to fifteen people, or may be as few as one or two VIPs.

When I first signed up for this volunteer activity several years ago, I was really naïve. I thought my 36 years in R & D should be sufficient to handle this job easily. In fact, I quickly found out in the training sessions that I needed to know what a fine arts course would tell you about the history of glass. Plus, I had to understand how to deal with the public and to respect the museum at all times.

The training consisted of three hours every Thursday from mid-September to the end of January of the next year. My group included some twenty people from all different walks of life as well as different countries. Few of these docents-in-waiting were scientists or engineers, as is true of the museum's docent population in general. At the end of the training there was no test—thank goodness. After several tours shadowing experienced docents, one is ready to go solo, receive your docent badge and to be let loose on the visitors. As a follow-up, a monthly meeting informs all docents about changes in the museum and new acquisitions, as well as detailed talks on one aspect or another of the collection.

The museum is made up of five main areas. The Innovation Hall is where the science and chemistry of glass is displayed. It is, of course, my favorite part of the museum. Indeed in the Innovation Hall I could spend the whole time talking about the chemistry and science of glass as there is a lot to cover. Other areas include the Contemporary Art Gallery, the History of Glass Gallery, the Hot Glass Studio (also housing the Carder Collection) and the Rakow Library. Tours are scheduled for up to two hours. Usually twenty minutes of that time takes in the Hot Glass Show where skilled glass blowers demonstrate their craft, a very popular part of any tour.

One has to gauge the audience as to their knowledge and interest. Some groups are very scientifically literate, but have a limited background in the topics of the tour, though they are eager to learn.

The history part of any tour starts with explaining that glass in one form or another has been around for more than four thousand years. This segment provides an opportunity to discuss the role of chemistry in ancient glass. The first glass articles were made from sand and natron (sodium carbonate from rivers), and unbeknownst to the glass makers the natron was usually contaminated with calcium compounds which helped stabilized the resulting glass. A major technical advance came with the discovery of glass blowing by the Romans around 50 BC. This was quickly followed by large tank melting so glass vessels, etc., could become available to the common man. After that one thing led to another via Islamic glass (staining and enameling), Venetian glass (crystallo, made using very pure sand) to European (lead glass) to the American Studio Art movement. All advances through the centuries involve chemistry in one way or another.

There are some special exhibits I try to wow the public with. One in particular is the largest paperweight every made (over 100 pounds) called Planet Earth. Josh Simpson is the artist, an interesting person whose wife, Cady Coleman, is an astronaut who spent six months in 2010 on the Space Station. And hereby hangs a tale: Josh makes small marble size planets and gives them to people to hide around the world so naturally there is one on the Space Station, courtesy of his wife.

Others are at the top of Mount Everest, in the Wailing Wall in Jerusalem, and countless other places all over the earth.

Nearly every exhibit has such a background story and the more one spends time in the museum the more one learns. In addition people often ask questions that you have not heard before and do not know the answer to. In which case, one has to admit you do not know the answer and will try to find out. Never give a wrong answer is a golden rule for a docent.

If you have a museum nearby which needs tour guides, please look into joining. You will find not only a continuing education opportunity for yourself and interaction with the general public to expound on your favorite topic, chemistry, but also will find your time well spent and enriching. At the present time, three members of the Corning Local Section Senior Chemists group are docents.

"Hope you enjoyed your tour of the Museum and will come back soon." With those words the tour is over and hopefully your group has been informed about key aspects of the museum and goes home with good memories.

Roger Bartholomew
Senior Chemists Committee

Howard and Sally Peters

Chocolate is the Food of the Gods

Editor's note: Howard & Sally Peters have a rather unusual retirement project: chocolate! Their article below shows that cultivating a completely different outside interest can lead to many opportunities in retirement.

Retirement from his IP law firm, Peters Verny LLP, came in 2007 for Howard. After twelve years in chemical research with Dow and SRI International mostly in high explosives projects for the Department of Defense, and then about thirty years as a corporate attorney, law firm founder, and senior partner in Palo Alto, California, it was time. Sally was later retired after 28 years as a technical librarian in 2012 from the Xerox Palo Alto Research Center. The elephant in the living room was always: "What to do with our retirement years?"

It turns out the ACS, the chemical enterprise, chemists and colleagues provided one answer—and it was drenched in chocolate. In February 2004, we gave our first major talk about "Chocolate Food of the Gods" for our home ACS Santa Clara Valley Local Section. One thing led to another and we ended up as the Valentine's Day story in the San Jose Mercury News in Silicon Valley.

After that event, we learned just how popular the chemistry of chocolate was as a topic for public outreach for chemistry. And, it doesn't hurt that we usually bring some samples of chocolate and have a free drawing for attendees who stay to the bitter end—for "bittersweet" chocolate, and in most cases a 10-pound bar. The Chocolate talk (as public outreach) has been given well over a hundred times in various venues across the U.S. including ACS national meetings. It was recorded in 2009 at the ACS National Meeting in Washington and Howard's voice-over synched to the slides can be found on the web for free (see http://tiny-url.org/chocolate). We have presented at many ACS SciMix events and regional meetings including Houston, Denver and yes, even Hershey, Pennsylvania. We went on the ACS speaker tours to local sections, and gave our talk to divisions, universities, colleges and the SPLASH program for high school students at Stanford, other high

schools, service groups, and even our granddaughters' grade school.

There were surprising connections/opportunities which included a written review in Chemical and Engineering News (May 2008) on physicist Stephen Beckett's Royal Society of Chemistry (RSC) book on The Science of Chocolate, 2nd edition. That was amazingly followed by a series of enrichment speaking engagements about the chemistry of chocolate on cruise ships, again as public outreach. Our first cruising chocolate adventure was on Cunard's Queen Mary 2 in the Caribbean in March 2008. Cruising and talking about chocolate has turned out to be an amazing gig in our retirement. We have presented the fun Chocolate talk at other times on the Princess, Cunard, and Norwegian cruise lines.

The present fun talk on chocolate is still viable and is given often, but we are planning to make some topical divisions about the subject of chocolate as separate presentations. We are exploring "Chocolate: A Religious Experience" at the upcoming Pepperdine Bible Lectures in Malibu, CA, in May 2014. Another topic to be examined is "Chocolate as Medicine", using some materials from the recent RSC book of the same name. A session is planned on "The Laws of Chocolate", possibly for continuing legal education in California. We have already had sessions on pairing chocolate with wine and plan to continue. Local Pete Schlossberg (of Pete's Wicked Ale & Coca Pete's fame) is amenable to teaching us a session on pairing chocolate and beer. Finally, in response to many, many questions over the past ten years, we are now researching a talk on "Is Chocolate an Aphrodisiac?" aka "XXX-Is Chocolate better than Sex? For more information, see http://www.howard-peters.com, or search for "Howard Sally Peters chocolate chemist".

In 2014, the theme for ACS's National Chemistry Week will be "The Chemistry of Candy". We expect to be kept very busy. Stay tuned.

Howard & Sally Peters
228 Sand Hill Circle
Menlo Park, CA 94025

L-R Gregory Tew (Poly Chair), Ken Wagener (Univ. of Florida), R. Turner (Elsevier)

Seniors Can Help Put Awards in an Historical Context

I gave a talk in the symposium for the Polymer Chemistry Division's Herman F. Mark Award at the recent ACS National Meeting in Indianapolis. The award was presented to Professor Ken Wagener, leader of the University of Florida's polymer program, for his achievements in polymer synthesis. Ken Wagener requested that I give a talk discussing the contributions of Herman Mark and the previous winners to polymer science. The previous winners include two Nobel Laureates: Paul Flory and Bob Grubbs. I am certain that among the previous winners of the Herman F. Mark Award there are several more possible future Nobel Laureates. Herman Mark's Polymer Research Institute at the Polytechnic Institute of Brooklyn is an ACS Chemical Landmark. He is considered a Father of Polymer Science in the United States.

I believe that the value of any award is partly related to the quality of the previous winners. I knew or had met most of the previous winners, and in my talk commented briefly about their major contributions to polymer science.

Putting awards in their historical context is an idea that should be adopted by other Divisions. Senior Chemists are well placed to make contributions of this nature!

Eli M. Pierce
Past ACS President
Senior Chemists Committee

Roald Hoffman (Cornell University) flanked by Venice Gouda (former Minister of Scientific Research, Egypt) at left and Marinda Wu (ACS President).

The Malta Conferences: Science Research and Education as a Bridge to Peace in the Middle East

Editor's note: Morton Hoffman, SCC member, is a retired emeritus professor from Boston University and is active in the American Chemical Society and in international scientific activities. He is also a member of the organizing committee of the Malta Conference on Science and Education in the Middle East. The goal of this group is to bring together scientists from the nations in the Middle East, the United States, and Europe for conversation and collaboration towards a better future for troubled parts of the Middle East. Dr Hoffman has written the following report for us on this year's Malta Conference.

Political instability and social uncertainty in the Middle East, coupled with water scarcity, energy needs, threats of nuclear proliferation, and the lack of civil societies, are of growing concern to the world. To help address these challenges, a series of biennial science conferences has been organized. Since 2003 scientists and science educators from at least 15 Middle Eastern countries (Bahrain, Egypt, Iraq, Iran, Israel, Jordan, Kuwait, Lebanon, Libya, Palestinian Authority, Qatar, Saudi Arabia, Syria, Turkey, and the United Arab Emirates) have joined with Nobel Laureates and other scientists from the U.S. and E.U. for five days of meetings.

These meetings are called "The Malta Conferences" in recognition of the locale of the first (and two others) of the six conferences held to date. The gatherings are the only platform where scientists from those countries can work together on solutions to regional scientific and educational problems. The sad fact is that most of these Middle Eastern scientists and science educators cannot easily meet face-to-face to exchange information and discuss possible collaboration and cooperation because the governments of their countries are hostile to each other.

The Malta Conferences are organized and funded by the Malta Conferences Foundation (MCF), an IRS Section 501(c)(3) tax-exempt charitable entity. Three members of the Senior Chemists Committee are also members of the MCF Board of Directors: Morton Hoffman (Treasurer), Cathy Costello, and Ed Wasserman. In addition to Ed, other past ACS Presidents on the MCF Board are Ann Nalley (Vice President) and Paul Walter (Vice President).

The first conference (Malta-I) was held in 2003 on the Mediterranean island of Malta. Subsequent conferences were held on Malta (2005), Istanbul (2007), Amman, Jordan (2009), and Paris (2011) at UNESCO Headquarters. The 2011 meeting was one of the concluding events in the celebration of the International Year of Chemistry, and the Director General of UNESCO, Irina Bokova, opened the meeting. The most recent conference (Malta-VI) was held November 10-15, 2013, on Malta.

As has been the case from the start of the conferences, all the participants to Malta-VI were invited to attend by the organizing committee in order to have a diverse and balanced representation from each Middle Eastern country, and to guarantee the existence of a safe environment for open scientific discussion, the exchange of ideas, and personal networking. The meeting began with opening ceremonies and welcoming talks by George Abela (President of the Republic of Malta),

Gina Abercrombie-Winstanley (U.S. Ambassador to Malta), Marinda Wu (ACS President), and Zafra Lerman (MCF President). HRH Princess Sumaya Bint Hassan of Jordan, chair of the Board of Trustees of The Princess Sumaya University for Technology and a leading advocate for science as a catalyst for change in the Arab world, delivered the keynote lecture on "Science for Peace". Plenary lectures were given through the course of the conference by Nobel Laureates Claude Cohen-Tannoudji (France), Roald Hoffmann (U.S.), Yuan T. Lee (Taiwan), Daniel Shechtman (Israel), a participant in Malta-I, and Ada Yonath (Israel). Ms. Abercrombie-Winstanley and Rob Luke, the U.K. High Commissioner to Malta, hosted the participants for an evening reception at their respective residences.

The active involvement of the Middle Eastern scientists and science educators with all the other participants took place in the workshops where they presided over the sessions, made oral and poster presentations, and reported on the present status of the areas and proposed directions for the future. The workshops were: Environment: Energy, Air, and Water Quality; Sustainability of Resources, Energy, and Materials; Science Education at All Levels; Analytical, Nanotechnology, and Material Science; Chemistry and Bio-medicinal Chemistry; Chemistry Safety and Security.

Environment: Energy, Air, and Water Quality

The region's extremely poor air quality and severely insufficient high quality water can be successfully assessed and addressed by environmental science. However, the solutions have to be international because the badly polluted airsheds and watersheds are regional in nature and cross many national boundaries. A working group on Regional Water Quality Assessment in Jordan, Palestinian Authority, and Israel was conceived at the Malta-III Conference. During Malta-IV, this group defined and launched an ambitious research program, involving hydrologists and environmental chemists from Jordan, Palestinian Authority, Israel, Egypt, and Kuwait (with advisors from the U.S. and EU). The working group plans to expand its activities to include Syria and Lebanon as soon as additional funding can be obtained. Tragically, there is no clean drinking water in Gaza. As a result of the Malta Conferences, a collaboration is underway between scientists from Al-Azhar University in Gaza and those from the Technion-Israel Institute of Technology for the analysis of heavy metals (ICP analysis) in water samples brought from Gaza and analyzed at the Technion.

Sustainability of Resources: Energy and Materials

This workshop focused on establishing collaborations toward the development of renewable energy sources. The future action group has already furthered the concept that strong regional activity on solar, wind, wave, and other renewable resources would reduce the attractiveness of nuclear energy with its inherent proliferation potential and political destabilization effects. It is a fact that the amount of solar energy received by the surface of the Earth in one hour is approximately equal to the current total energy consumption of the entire planet in one year. The Middle East is blessed with abundant sunshine with its obvious potential for meeting growing energy requirements in the region. Collaboration is occurring between countries on issues of solar energy. As a result of Iran's push to develop nuclear capabilities, countries throughout the region feel pressured to acquire nuclear technology of their own. The workshop encourages the participants to concentrate on renewable sources of energy – solar in particular – instead of the direction many of them (e.g., Jordan, Egypt, Saudi Arabia, United Arab Emirates) are taking in moving toward nuclear technology.

Science Education at All Levels

Global climate change, insufficient potable water and food, chemical warfare, and the proliferation of nuclear technology are problems that span the region. In order to build civil societies, these problems must be addressed; they can only be solved by scientists within the region using cross-

border collaboration and cooperation. But in order to have scientists who are capable of solving these problems, science education at all levels must be further developed. The demographics of most Middle Eastern countries make education a pressing challenge for the entire region. Since science is inherently international, multinational working groups were formed within the Malta Conferences to devise more effective science curricula and low-cost laboratory materials for all levels of education. Green chemistry and chemistry safety and security are integral parts of the workshops on education. The working group has designed different methods of teaching, learning, and assessing students, and a website is being designed for the exchange of ideas.

Analytical, Nanotechnology, and Material Science

Nanotechnology is a multidisciplinary subject combining the traditional scientific fields of chemistry, physics, and biology, as well as other disciplines like medicine and engineering. The application of nanotechnology ranges from materials to bio-engineering and from energy to agriculture. Hence, while nanotechnology is highly sophisticated and demanding, it has many day-to-day relevant applications. This workshop explored solutions for the most crucial obstacles facing the realization of nanomaterials in real-world technological applications, and examined some of the novel chemical and biological sensors based on nanomaterials for medical applications, e.g., a demonstration of an array of chemiresistors based on functionalized gold nanoparticles in combination with pattern recognition methods that can distinguish between the breath of lung cancer patients and healthy controls without the need for dehumidification or preconcentration of the lung cancer biomarkers. The developed devices are expected to be relatively inexpensive, portable and amenable to use in widespread screening, making them potentially valuable in saving millions of lives every year.

Chemistry and Bio-medicinal Chemistry

The health of the citizens of the nations in the Middle East depends on the availability of medical resources as well as the quality of the environment. The further development of medicines, especially those derived from local natural products such as medicinal plants, would be of great benefit to the population. This workshop examined the contributions of chemistry in biotechnology, bioinformatics and drug design, and gene therapy, and grappled with questions about strategies for isolation of active components, accuracy and precision in bioassays, and on the relationship between poor quality water/air/soil or weapons contamination and disease. The participants emphasized the need to present a global view in order to raise awareness among the public regarding both the benefits and the potential risks and hazards of medicinal plants. Future directions include collaborations on review articles and original research papers on traditional and chemical approaches to medicinal plants, updating the availability of instrumentation in the laboratories in the region, and the dissemination of news about progress on medical sensors and the synthesis of bioactive compounds.

Chemistry Safety and Security

The awarding of the 2013 Nobel Peace Prize to the Organization for the Prohibition of Chemical Weapons (OPCW) and the recent signing of the Chemical Weapons Convention (CWC) by Syria highlighted the need for determined progress in the area of chemical safety and security. One focus of this workshop was to inform scientists from countries that have not ratified/signed the CWC about this important international treaty. The participants also discussed how to deal with the proposal by OPCW to develop a Code of Conduct for chemists, especially in light of the work done by the International Union of Pure and Applied Chemistry (IUPAC) on how to overcome the "the dual use of chemicals" obstacle. Other topics covered in this workshop included the new developments in chemical production technologies that enable even untrained personnel to produce dangerous chemicals and incapacitating chemical agents, and the international exchange of scientists and scientific information.

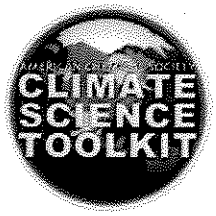
The MCF takes great pride that OPCW is an official sponsor of the Malta Conferences.

Conclusion

The hope of the Malta Conferences is that the common language of science will help to overcome chasms of distrust by building tolerance and understanding, and as a result improve relationships among Arabs, Iranians, and Israelis, and between the Muslim world and the U.S. MCF believes that Science can serve as a bridge to peace in the Middle East.

More information about the Malta Conferences can be found on the Foundation's website: www.maltaconferencesfoundation.org. You can follow us on Facebook at https://www.facebook.com/pages/Malta-Conferences-Foundation/682852151741585.

Morton Hoffman
Senior Chemists Committee



Editor's note: The following articles show some other ways in which senior chemists, whether retired or still working, can become involved in occasional activities that they can enjoy, and which will be useful to their communities, for example:

How to Use "The ACS Climate Change Toolkit" to Help Public Science Literacy

Global climate change is a vital issue for life on earth, and is often ignored or misunderstood by the general public, and also by policy makers, who really need to understand the possible causes and effects of climate change. As senior chemists, retired or still working, we can be instrumental in bringing this topic to the public for discussion. For example we might lead a discussion at a local section meeting, visit a local school science class and give a talk, arrange a "Science Café" on the topic, visit our local, state, and national lawmakers, or hold a discussion at our place of worship.

If you are not sure that you understand the fundamental science of climate change, and are not ready to discuss the topic or answer questions about it, there is a helpful resource available. This is the "ACS Climate Science Toolkit" that was developed by a working group appointed by ACS President Bassam Shakhashiri in 2012. First, the working group developed the content, and then began to develop strategies for ACS members to use this information.

Where can you find this helpful information?
Go to www.acs.org/climatescience to find this menu in the left-hand column of this home page:

- About
- Getting Started
- Energy Balance and Planetary temperature
- Atmospheric Warming
- Greenhouse Gases
- Oceans, Ice and Rocks
- References and Resources (point the way to more detailed information)
- Climate Science Narratives (may serve as a starting point for a talk that you give)

The home page also has thumbnail descriptions of each of the six content sections of the Toolkit as a further guide to the topics of most interest to you. The topics presented are well explained fundamental concepts that will enable chemists to understand and discuss climate change.

This content was prepared by ACS Working Group on Climate Science, senior chemist Jerry A. Bell who served as chair and principal author, (j_bell@acs.org) and is maintained by the Committee on Environmental Improvement. Questions can be sent to Staff Liaison Ray Garant, at r_garant@acs.org.

Lynn Hartshorn
Senior Chemists Committee

Senior Events at Regional Meetings

Regional ACS Meetings are easier to travel to, and cheaper than the National Meetings. They are also interesting and fun. If there is an upcoming regional meeting in your area, why not contact the program organizers and suggest a senior event? (You could also volunteer to help to plan it). As you see from the example below, such an event need not be complicated or expensive, and it is a great way to meet other seniors at Regional Meetings. For a list of 2014 Regional Meetings, see www.acs.org/regionalmeetings and click on the "Future Regional Meetings" button on the left-hand side of the page. Ideas to consider include a social as in the example below, a lunch, or a breakfast, with or without a speaker or other activity.

Lynn Hartshorn, Editor

Senior Chemists Function at NORM 2013

The ACS Northwest Regional Meeting, NORM 2013, was held July 21-24, 2013 on the campus of Oregon State University in Corvallis, Oregon. In addition to presentations and symposia, a Senior Chemists function was scheduled. The cost was $25 and included two glasses of wine or beer, and a food line from which one could select smoked salmon, cheeses, crackers, veggies, and spinach-artichoke dip among others. After the social, guided tours were available through the Linus Pauling library collection. Approximately 30 senior chemists took advantage of this very successful function.

Richard Hermens
Senior Chemists Committee

A Plan to Establish a Senior Chemists Committee for the Chicago Local Section

Editor's note: The following notice was in the Bulletin of the Chicago Local Section. Other sections could consider a similar approach:

As many of you know, the ACS formed a new Joint Board-Council Committee on Senior Chemists effective January 1, 2013. The mission of the Committee is "to enrich the educational, technical, and

cultural lives of the ACS membership by employing the talents of senior ACS members." An interesting statistic is that 37% of ACS members are over 50.

We would like to start a Senior Chemists Committee (SCC) for the Chicago Section. Our Chair, Dr. Mike Koehler, has already presented a motion to the Chicago Section Board of Directors to establish a local SCC, and he asked me to chair the first Chicago SCC.

We are considering a separate luncheon meeting for Senior Chemists rather than meeting at the regular Section evening meetings. Section seniors: please let us know your preference for a luncheon meeting or a meeting in the evening with the ACS Chicago section. (A contact email address was given here).

Claude Lucchesi
Senior Chemists Committee

Seniors Can Help With Project SEED

A good way for chemists to help the chemistry enterprise, and perhaps more importantly to help low-income students have paid summer internships, is to become a SEED Project coordinator. A coordinator does not have to be a mentor, or have a laboratory. Many ACS sections still have no SEED program, and you could make it happen with about six hours of your time per year.

If you decide to start a program (which can be for as few as two students the first time), then you need to find one or more mentors. Mentors are local university chemistry faculty, or government or corporate scientists, who will agree to guide a bright but economically disadvantaged student for 8-10 weeks of summer work in the mentor's lab. You point out that the mentors are not committed until they have talked to students and find one they feel that they can work with. You need to chat with each mentor in order to get an idea of what kind of work the student(s) will be doing. One mentor may be enough the first time if he or she will agree to host two students.

Then you need to fill out a short application for funds and send it to the SEED ACS office. You can get lots of help from Raihanah Rasheed, SEED Program Assistant. She can be contacted at 202-872-4380 or by email at r_rasheed@acs.org . She will also send you the SEED application anytime from November through February. There is also information on the SEED website.

After your application has been approved, you will need to recruit a couple of students from local high schools, preferably schools with low income students. The schools should be close to the mentor's lab. Usually high school chemistry teachers or science coordinators are very happy to suggest student names to you. You give the students a sample resume to fill out, and talk to them about how they should prepare for their interview with the mentor. The mentor will make the decision about whether the student is suitable for his/her lab or not.

Matching funds can often be obtained from the local section, or corporations, but this is not necessary for the first year.

Being a Project SEED coordinator is satisfying and interesting work, and you also get to know some local scientists.

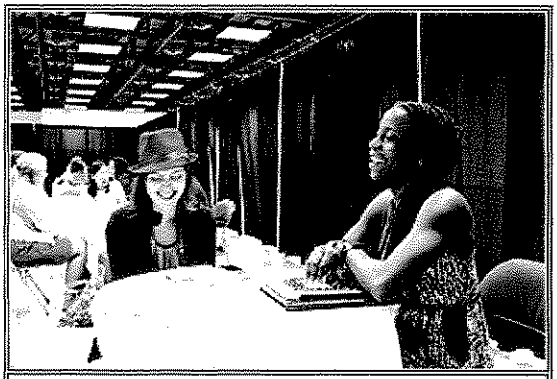
Questions can be directed to Susan Fahrenholz at 973-338-6588.

Susan Fahrenholz
Senior Chemists Committee

Speed Networking

Editor's note: Below is a report from Claude Lucchesi who participated in the "Undergraduate Speed Networking with Chemistry Professionals" Event in Indianapolis. Tom Beattie, one of the event organizers, follows with comments on plans for the Dallas meeting.

Speed Networking Event in Indianapolis



C&EN reporter Carmen Drahl shares a laugh with undergraduate Stella Koiki of the University of the Sciences. Photo courtesy of Lauren Wolf.

SCC had a second Undergraduate Speed Networking Event with Chemistry Professionals at the Indianapolis National Meeting very much like the event held in New Orleans. Again, we had about fifty 30-inch round tables in the Convention Center with a senior chemist professional at each table. Undergraduate chemistry majors were invited to visit individually with a senior chemist for about six minutes to ask questions and "to partake of senior chemist wisdom", and many did so.

Each undergraduate had the opportunity of visiting with about twenty of the senior chemists during the course of the event. I was one of the professionals, and I had an exciting time conversing with the undergraduates. A particularly interesting conversation was with a student from Nepal. Another interesting session was with a student from China who figured out how to make use of the ACS. As with the students in our first Speed Networking group in New Orleans, each student wanted "a job". I encouraged them to think about what they wanted to do with their lives–what excited them.

Claude Lucchesi
Senior Chemists Committee

Seniors/Undergraduates Speed Networking Event Planned for the ACS National Meeting in Dallas

As is evident from Claude Lucchesi's enthusiastic personal account above, SCC had another speed networking event with undergraduate students at the Indianapolis ACS national meeting.

All of the 44 professional chemists who responded to the questionnaire ranked their experiences at the event as 8 or higher on a scale of 1-10. Among the student responders to a separate questionnaire, everyone ranked his/her experience at this event as "very good" or "good".

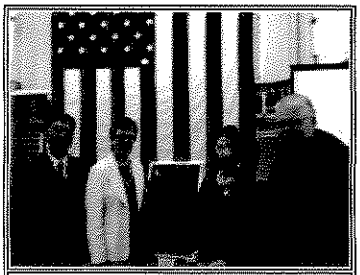
Thus, we can conclude again we have a successful format for senior chemist and undergraduate student interaction, which is one of our Senior Chemists Committee goals.

We are now in the midst of plans to do this event again at the Dallas, TX ACS meeting. Spring ACS meetings always draw many more undergraduate members than fall meetings, so we will need to ramp up our efforts to accommodate all the student attendees.

We need more volunteer professionals for Dallas. No need to prepare anything special to join us. Your experience as a chemistry or chemistry-related professional is what the students are anxious and interested to hear.

If you will be in attendance at the Dallas ACS meeting and would like to volunteer a bit of time (Monday, March 17, 3:30-5:00 p.m.), please let me know. It's a great way to meet and share with our younger colleagues. Please email to me (Beattietr@aol.com) your interest and willingness to join us, and I will keep you informed about the final arrangements for speed networking in Dallas.

Tom Beattie, Vice-Chair
Senior Chemists Committee



Howard Q. Zhang, USDA ARS Western Regional Research Center Director; Catherine Woteki, USDA Chief Scientist and Under Secretary for Research, Education and Economics; Marinda Li Wu, ACS President; and Andrew Hammond, ARS Pacific-West Area Director unveil the National Historic Chemical Landmarks plaque for flavor chemistry research at the USDA ARS Western Regional Research Center in Albany, CA. Photo by Keith Lindblom.

Editor's Note: The two articles which follow are about people and places that are important to chemistry.

The National Historical Chemical Landmarks Program

The ACS established The National Historical Chemical Landmarks Program in 1992 "... to enhance public appreciation for the contributions of the chemical science to modern life in the United States". Over 70 Landmarks have been designated beginning with the first Landmark in 1993 for *Bakelite: the World's First Synthetic Plastic* and continuing to the most recent 2013 Landmark for *Flavor Chemistry Research at the USDA.* Ten Landmarks were designated internationally, some with a U.S. partner such as the Landmark for the *Discovery and Development of Penicillin.*

Landmark subjects are nominated by ACS local sections, divisions or committees, reviewed by the National Historical Chemical Landmarks Subcommittee and approved by the ACS Board Committee on Public Affairs and Public Relations. Landmarks must be at least 25 years old. Extensive information is collected during the nomination process, and this information is used to produce an informative brochure and a suitable plaque for public display at the site of the Landmark achievement. The plaque is presented at a public ceremony that often includes representatives from the scientific community, the local community, government and the press. Symposia are frequently held in conjunction with the presentation.

A Landmark recognizes "... a seminal achievement in the chemical sciences" and a review of the Landmarks on the website shows the diversity of achievements recognized. Landmarks are divided into five categories: Frontiers of Knowledge, Medical Miracles, Industrial Advances, Consumer Products, and Cradles of Chemistry. As examples, the ACS has honored *Joseph Priestly: Discoverer of Oxygen, The Development of Diagnostic Test Strips, Norbert Rillieux and a Revolution in Sugar Processing, Scotch Transparent Tape and the National Institute of Standards and Technology.* Landmarks are spread throughout the country and many can be visited. The website www.acs.org/landmarks has information on the Landmarks and their locations.

Education is an important component of the Landmarks program and the program has been emphasizing outreach to teachers and students. Information on the Landmarks program has been

presented at education meetings and the subcommittee is working closely with the ACS Education Department. Three lesson plans emphasizing inquiry-based activities have been developed for high school students. They are for the *Discovery of Baking Powder*, the *Discovery of* Fu*llerenes*, and for *Joseph Priestley*. More lessons are being developed.

Hopefully, you will go on the website to review the Landmarks and think of some you might nominate. For more information, contact Keith Lindblom, Program Manager, at (k_lindblom@acs.org).

Maureen Chan
National Historical Chemical Landmarks Subcommittee

DuPont, Carothers and Nylon


Wallace Carothers

The U.S. economy was doing well in the 1920s. DuPont entered the textile fiber business in 1920 when it formed the DuPont Fibersilk Company. In May of 1921, the company started production of viscose rayon from regenerated cellulose in Buffalo, New York. Initially called "artificial silk", it was renamed rayon in 1924. Then in 1925 the DuPont Fibersilk Company was renamed the DuPont Rayon Company.

During the 1920s, Charles M.A. Stine was the Assistant to the Chemical Department Director of DuPont. This put him in charge of the Experimental Station in Wilmington, DE. In December of 1926, Stine proposed to the Board of Directors that $20,000 be added to the 1927 budget for conducting fundamental basic research at the Experimental Station. The Board supported his request.

Dr Stine hired a bright young Assistant Professor at Harvard University by the name of Wallace H. Carothers. He had earned his Ph.D. under Prof. Roger Adams at the University of Illinois in 1924. He stayed on for 2 years as a Postdoctoral Fellow before going to Harvard in 1926. There he loved to do research but was uncomfortable in the classroom.

His life was a challenge due to a mental health problem that today we call bipolar disorder. There were no good treatments or medications at that point in time. He shared this information with DuPont. They assured him of their support in dealing with this issue, a fact that I find quite admirable.

Carothers started at DuPont in February 1928. His research group included an impressive collection of chemists including Paul J. Flory, with whom he worked closely. Flory left after the death of Carothers and thrived in academia, earning the Nobel Prize in Chemistry in 1974.

Some of the other chemists in the Carothers Group were Gerard J. Berchet, Julian W. Hill, Edgar W. Spanagel, Donald Coffman and F. J. L. VanNatta. And then there was a young lab technician who had arrived in Wilmington at age 11 as a refugee from Kiev in Ukraine.

The building that housed the "Carothers Group" was called Purity Hall, suggesting a focus on chemistry with no real mission to develop a product. Two events soon changed life at Purity Hall. The stock market crash of October 24, 1929, no doubt had an impact on DuPont's fortunes. And Dr Stine was succeeded by Elmer K. Bolton who asked Carothers to investigate polymers that could be derived from acetylene.

Carothers asked Arnold Collins to prepare a pure sample of divinylacetylene. This effort led to the accidental preparation of chloroprene, a new synthetic rubber in 1930. Dupont began the commercial production of polychloroprene in 1932, calling it neoprene.

The Carothers Group had been making polyesters via condensation polymerizations. However, while fibers had been made, their properties were not suitable as commercial fibers. Attention then turned to making polyamide fibers based on condensation reactions using diacidic and dibasic molecules.

On February 28, 1935, Gerard J. Berchet made a polymer from adipic acid and hexamethylene diamine. A fiber was made using these two monomers, each containing six carbon atoms. It was therefore called fiber 66 which eventually became nylon 66. A plant was built in Seaford, Delaware in 1938. This new synthetic fiber was made into women's hosiery which began replacing silk in 1939. Nylon stockings quickly consumed all production until the start of World War II. At that point all nylon shifted to military applications.

Wallace Carothers did not live to see the great success of nylon. He married Helen Sweetman in February 1936. She was a chemist whom he met at the DuPont library where she worked on patent applications.

His periods of depression continued. He died after ingesting cyanide in a hotel room in Philadelphia on April 29, 1937. He had just turned 41. Our world lost one of its greatest organic chemists far too soon. We can only wonder what else his creative mind might have produced.

Recall that nylon came from DuPont's initial investment in Purity Hall of $20,000 in 1927 (about $265,000 in today's dollars). This eventually led to the company's Textile Fibers Department and an impressive array of synthetic fibers that made the Department a "cash cow" for many years. While this entity has been sold, DuPont still profits from the sale of nylon engineering resins, all dating back to the 1927 investment in fundamental chemistry!

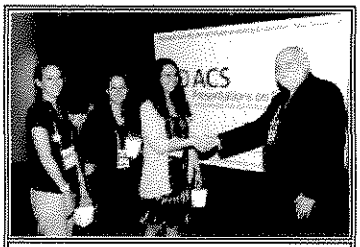
Recall my mention of a young lab technician hired by Dr. Carothers at Purity Hall. His name was Joe Labovsky and Carothers became his mentor, due in part to their shared love of Russian music and literature. Carothers helped him get a college scholarship to attend the Pratt Institute and earn a degree in industrial chemistry.

Labovsky was devastated by the death of his friend. After his long career at DuPont, he led a crusade to help preserve the memory of Wallace Carothers. He made many public presentations in Wilmington and Philadelphia concerning nylon and his great mentor.

He died earlier this year at the impressive age of 101. His will continues his efforts on behalf of Wallace Carothers. His generous gifts include one to the Delaware Section of ACS in support of our annual Carothers Award. Other support includes the Chemical Heritage Foundation in Philadelphia and the Hagley Museum and Library in Wilmington.

My friendship with Joe Labovsky began shortly after I returned to Delaware in 1998. I used to visit him in his Wilmington home and then in his retirement home as his health declined. I valued my history lessons from this unique DuPont "Lifer". He helped me appreciate the many great talents of Dr. Wallace Carothers for which I am thankful.

Al Denio
Senior Chemists Committee



ACS Presentations on Demand Coordinating Editor Jerry Skotnicki greets attendees in Indianapolis who responded to a promotional tweet to highlight the program and introduce exclusive availability to ACS members.

ACS Presentations on Demand

We've all been forced to honor a commitment at an ACS National Meeting that leads to missing an important presentation. We've shared those moments when a friend mentions a great talk and wants to discuss the highlights with us and we admit regret that we could not attend due to a conflict.

Thanks to a new program offered exclusively to ACS members, you can view the slides and hear the audio from a select number of presentations from the most recent ACS National Meeting through "Presentations on Demand". It is an excellent way to catch up on what you wish you had attended or listen again to a talk that you enjoyed. All you need is an ACS ID and password to log into the platform and you can listen to more than 350 presentations captured in Indianapolis. Posters and previous meetings are available, too. All in all, there are more than 1,000 presentations that synch a speaker's slides with the recorded audio portion, capturing talks from the last three ACS National Meetings and the 17th Green Chemistry and Engineering Conference held in June, 2013.

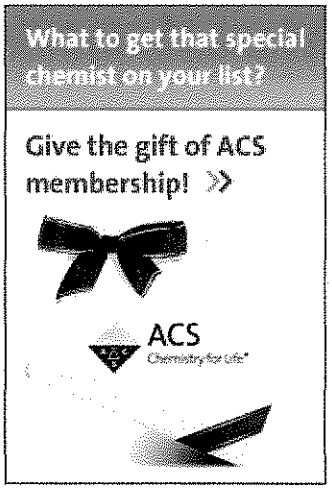
Check out Presentations on Demand today: http://presentations.acs.org/common/default.aspx and feel free to share your comments or experiences with ACS by contacting April Orr, a_orr@acs.org.

April Orr
Assistant Director
ACS Member Communities-Virtual Support

A Note from the Newsletter Editors, Lynn Hartshorn and Roland Hirsch

In this newsletter we try to give you articles that will interest you. We have had articles about well-known senior chemists, retirement projects for senior chemists, and second careers. We also give you news items and informational articles. We would like to hear from you, our readers. What would you suggest as topics for our articles? Would you like to write an article for us? What do you like in this edition of the newsletter, and what don't you like? Let us know! Please send comments and suggestions to Lynn Hartshorn at lghartshorn@stthomas.edu.

We would like to send all of our readers best wishes for the holiday season and the new year.



Mission Statement

The Senior Chemists Committee was established January 1, 2013 as a Joint Board-Council Committee and consists of 15 members, 4 associate members, and a consultant. The Committee will serve two constituencies within the ACS: (1) seniors who are still active either as full time or part time employees, consultants, or those who still wish to stay closely connected to the ACS and its spectrum of activities; and (2) younger members and students who have questions about a chemistry based career or who have started careers but are looking for guidance in how to progress. Their mission is:

1.To share with ACS members of all ages a rich variety of personal experiences and expertise gained over many years of professional service;
2.To foster interest and participation in the science of chemistry through community outreach, especially in grades K-12;
3.To act as science advisers/ambassadors for the purpose of cultural exchange at home and abroad;
4.To provide senior ACS members with challenging, diverse, and enjoyable professional experiences that enable them to contribute to the cultural experiences of their communities; and
5.To recommend policies that address issues of interest to senior chemists.

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