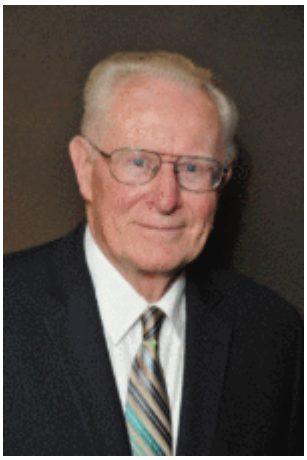
Newsletter for Senior Chemists

A Special Welcome from the SCC Chair



Thomas Beattie gained his PhD in Physical Organic Chemistry at The University of Wisconsin. His career has been mainly spent working in early stage drug discovery, and he currently consults in the biopharmacy area. He has served on the Senior Chemists Committee (SCC) for several years, and is now the SCC chair. His work on the SCC has included planning the very successful series of Senior Chemists Breakfasts held at National Meetings, and finding speakers for that event. He lives in San Diego and is a member of the San Diego Local Section.

Welcome to the latest edition of the newsletter for senior chemists created by the ACS Senior Chemists Committee (SCC). We appreciate all the comments and suggestions you have been sending.

I have good news for our readers. At the SCC meeting in Washington, DC, we discussed the idea of switching from two to three editions per year. Overwhelmingly, the newsletter staff, all of SCC, and the large group of seniors who attended our Tuesday morning SCC breakfast favored the change.

Led by newsletter editor Lynn Hartshorn and staff liaison Semora Smith, we believe that slightly reducing the length of each issue and shortening staff turn-around time will allow this change without increasing the work load (which is considerable).

Success requires not just article submission from SCC members, but articles from the collection of seniors. So, please consider writing a short article about your travels; favorite museums, hobbies and experiences; or anything else you think may be of interest to our ACS community of seniors.

Our SCC initiative of having ACS issue 70-year certificates of service was strongly appreciated in 2017. Going forward, we plan to continue that practice. We also will be playing catch-up for those who missed receiving certificates in previous years. Thus, in 2018 ACS will be sending certificates to local sections for those with 72, 73, 74… years of ACS service (next year's 71's received their certificates last year). Please alert your local section 2018 chair of this change and encourage your section to honor these long-term ACS members.

At the ACS national meeting in Washington, DC we participated in another speed-networking event with students. Here too, you need not be an SCC member to participate. Virtually all senior chemists have cogent advice to share and wisdom to answer student questions. If you plan to attend the ACS national meeting in New Orleans and want to join us on Monday afternoon for speed-networking, send us your contact information at our new email address (seniorchemists@ACS.org) and we will add you to our list to receive a reminder of time and place.

Also at the meeting in Washington, Bill Carroll, former ACS President and Board Chair, regaled us at the Tuesday morning breakfast with another talk, this time entitled "Statistics and the Shirelles: How Physical Sciences Thinking Informs Popular Music Analytics". We may not be pop music fans now, but Bill tickled attendees with stories and music of the past that I am sure you would remember. If you missed out, do a Google search for William F. Carroll, author, and with luck you will come across an abstract of the talk.

Tom Beattie and Bill Carroll, Jr.
All images provided by Linda Wang, ACS Publications

So, welcome and enjoy another edition of our newsletter for

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senior chemists. Keep those comments and suggestions coming!

Tom Beattie, SCC Chair

The following articles continue our series describing some of the interesting and varied activities of senior chemists.

Taking Flight to National ACS Meetings by Dwaine Eubanks

Dwaine Eubanks was born and reared in the West Texas "oil patch," an area of high desert where any plant taller than a six-year-old was called a tree. After completing his PhD in Inorganic Chemistry at the University of Texas, Dwaine spent four years as a research chemist with DuPont, followed by 36 years in academe (first at Oklahoma State and then at Clemson). He currently serves as the Director of the Emeritus College at Clemson University.

When I was a young Boy Scout, the commanding officer of a nearby Air Force base took a benevolent interest in our troop. On several memorable occasions, he arranged for a C-47 aircraft (the military version of the Douglas DC-3) to fly us to camp and other destinations. As we took turns sitting in the co-pilot's seat with our hands on the yoke, we each dreamed of the day we would be sitting in the left seat of our own airplane, flying.

Fast forward 30 years, and finally I had the financial resources to follow that dream. I justified the expense by convincing myself that it was a prudent and responsible way to travel for my work and to ACS meetings, where I participated in ACS grant and governance activities.

The adventures began with a freshly-minted pilot's license, a good airplane, a biochemistry colleague willing to share gas expenses, and an upcoming ACS national meeting in Chicago. Everything started out fine. It was a beautiful day in Oklahoma. We enjoyed lunch in the shade of the Cessna 172's high wing. We flew low over rectangular fields of corn and soybeans and spotted barges along the Mississippi.

Then things turned ugly. It's important to understand that new pilots are only allowed to fly with three-mile visibility, free of clouds. At minimum, they must to be able to see where they're going—all the way to an airport where they can land. Those are the Visual Flight Rules (VFR).

Our destination that day was Meigs Field, a small airport on the shore of Lake Michigan in downtown Chicago. Chicago Approach Control informed me that major thunderstorms were rolling into Chicago from the west. They were too busy to help me find Meigs Field and advised that I fly north along the shore, with skyscrapers on the left and water on the right until I saw the airport beacon.

Unfortunately, the thunderstorm and I arrived at Meigs Field at approximately the same time.

The maximum crosswind capability for a Cessna 172 is about 14 knots (with the rudder pedal pressed as far as it will go). With higher cross-wind velocity, the airplane cannot be kept aligned with the runway. Fortunately, the runway was just wide enough that I could land diagonally, with sheets of wind-driven rain pounding the plane as we taxied to tie-downs.

Although returning to Stillwater, Oklahoma, was less exciting, I resolved to obtain an Instrument Flight Rating (IFR) as soon as possible. In those days (mid-70's), the IFR required 200 hours of total flying time including 40 hours of flying blind ("under the hood," with no visual cues). In the meantime, I continued to fly VFR, including one memorable trip to a national ACS meeting in Anaheim.

On that trip I'd planned to land at Orange County (John Wayne) Airport. As I approached the Coast Range, Air Traffic Control strongly advised me to put the airplane down in Palm Springs. They'd already had four weather-related "incidents" at John Wayne that day, and didn't need another. I landed as instructed, and took the bus to Anaheim. I arrived at the meeting with all the pilot's swagger and bravado drained away.

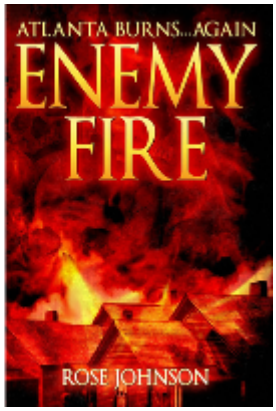
I obtained the IFR license just before a national ACS meeting in Miami and was ready to go again. A colleague from Iowa State decided to join me on this adventure. He flew commercially to Tulsa, where I picked him up, and we were on our way. Now, mind you, I had my 40 hours of flying with restricted visibility, but only 30 minutes of it had been in "Instrument Meteorological Conditions," (IMC, i.e., real clouds). By the time the meeting was over, and I was back in Stillwater alone, my logbook showed more than 16 hours in IMC —mostly thunderstorms. The reason I was alone was because, when we were forced to land in Jackson, Mississippi, to wait for a storm to pass, my companion decided it would be better to walk back to Ames rather than bouncing all over the sky with me.

Most of my flights were uneventful, but those punctuated by brief moments of terror are the ones we remember, spin yarns about, and perhaps embellish. After all, who's going to say it isn't so? For the past couple of decades, my wife Lucy (also a pilot) has been in the right seat and would be more likely to give an unvarnished report of what happened. Like the time we were on our way to a Boston National ACS meeting and had a complete engine failure in IMC over the mountains of North Carolina. We managed to land in Hickory, a small city near Charlotte, with fire engines following us down the runway, sirens blaring. That got our adrenaline pumping! Yet we arrived in Boston, on schedule, to receive a joint award from the Division of Chemical Education that evening. It was all in a day's flying.

Remind me to reminisce on some of the really interesting folks who have flown with me, including a KGB agent (to a National ACS meeting in Houston). Trump's not the only one with Russian connections.

Fiction Writing Your Way into Retirement by Rosemarie Szostak, PhD

Rosemarie Szostak holds a PhD in inorganic chemistry from UCLA. She carved her academic career in zeolite science in technology as a professor at Georgia Tech. After 9/11 she took a position with DARPA (Defense Advanced Research Projects Agency), the most well- known secret organization of DoD (Department of Defense) as a program manager in defense sciences. She presently works as a consultant/analyst/innovation specialist with the advisory firm, Nerac, helping companies with their technology and patent needs. She authored three books on zeolite technology, multiple book chapters and a myriad of technical publications in that field. She is a member of the Georgia ACS section and helps with their mentoring program. She is an avid reader of mysteries and thrillers and is presently working on her second mystery," Beyond Dead", also set in 1917 Georgia. Rosemarie writes under the pen name "Rose Johnson".



Isaac Asimov was a biochemistry professor before he started to write science fiction (*I, Robot; Fantastic Voyage* and 500 more novels). The astronomer Carl Sagan wrote *Contact*. Michael Crichton was a physician before he became a best-selling author (*Jurassic Park; Andromeda Strain* among others). Charles Lutwidge Dodgson, who wrote under the pen name Lewis Carroll, was a mathematician (*Alice's Adventures in Wonderland*). Jennifer McQuiston is a veterinarian and infectious disease researcher at the CDC in Atlanta. She writes historical romance (*the Spinster's Guide to Scandalous Behavior* and others).

I started my journey in fiction writing when I broke my leg a few years ago and was house bound. Someone told me about an interesting challenge, called NANOWRIMO (National November Writing Month). NANO is a unique annual event that challenges writers and would-be writers to pen 50,000 words for a first draft novel in the month of November. The beauty of this challenge is that it forces writers to meet a serious word deadline. No more procrastinating while penning a draft over the course of a year. Quickly putting words down on paper is the biggest challenge for any writer as well as scientists, engineers, and other professionals. I did complete the 50,000-word first draft novel during that November.

As they say, “in for a penny.” I joined a mystery writing guild (SistersInCrime), a local writers guild (Georgia Romance Writers) and signed up with an on-line Yahoo-hosted critique group (Mystery Writers Critique Group) and submitted my gem for review by those who were far more knowledgeable in fiction writing. What I got back was covered in red ink and comment balloons. The balloons in the Disney film “Up” have nothing on the size and number of balloons in my manuscript. In addition, pages and pages of my manuscript were red-lined for deletion. Ouch! OK. They didn’t like it. Well, actually, they liked it but it needed a whole lot of work. As a researcher, I decided to go back to square one: understanding the process of fiction writing. The groups I joined were very helpful and supportive. No one told me to “go back and do science.” They suggested books to read, seminars to attend and every writer, published and unpublished, told me to just keep writing. I tightened up my story. Enhanced my characters to be more likable. Made the bad guy eviler. Made sure I had unexpected plot twists and a cohesive story arc. In the process, I became a mystery writer.

The next step was becoming a published mystery author. I chose to self-publish. Many authors, including well-known ones, have moved from traditional publishing to self-publishing. Being an independent author is no longer equal to a vanity author. Amazon.com (Kindle) has a publishing house that allows authors to publish and sell their work through that platform. It means that the author must handle editing, book cover design, and marketing. Self-publishing has gone mainstream. Today, there are even indie writer awards in various genres.

In preparation to publish, I utilized online writing tools (hemmingwayapp.com and grammarly.com). That helped with my lack of grammar skills and improved the readability by highlighting all overly complicated and confusing sentences and deleting unnecessary adverbs. I hired an online book cover designer and content editor. As a writers’ guild member, I tapped their experience in finding the right editors and designers. It is smart not to work in a vacuum at this stage since writer scams abound. Guild members are a savvy lot. To ensure that the final manuscript was ready, I asked a few experts and friends to do a final reading. After formatting it for Kindle publication, I did the very last read in the Kindle format to make sure there were no glaring formatting errors and submitted/published my book on Amazon.com.

My book, *Enemy Fire,* is a historical mystery set in 1917 Atlanta. The backdrop is the Great Atlanta Fire of 1917. 2017 is the 100th anniversary of that devastating event. I use a pen name (Rose Johnson) as a way of separating my writing career and scientific career. I would certainly hate to have a mystery reader order any of my zeolite science books by mistake. Check out my author website: www.rosejohnsonmysteries.com . There you will find a link to order my book from Amazon.com.

If you have ever considered writing a work of fiction, my recommendation is to first check out NANOWRIMO. A surprisingly large number of new authors start by accepting the NANO challenge. It will help you decide if a writing career could be your retirement career.

Supporting STEM Teaching in Your Local Schools by Donald Rea

Donald Rea received his BSc and MSc in chemistry at the University of Manitoba, and his PhD at MIT. The majority of his career was in R&D management at the Jet Propulsion Laboratory. Since retiring he has been the leader of the AAAS (American Association for the Advancement of Science) STEM volunteer program.

Retirees with a STEM (Science, Technology, Engineering and Mathematics) background have a unique opportunity to contribute to their community by supporting STEM teaching in the local schools. Our society is steadily becoming more dependent upon STEM; requiring, not only experts in individual categories, but also a public with the educational background to provide the necessary support.

One example is the ACS Chemistry Ambassadors program, which identifies a range of activities designed to assist chemists in educating students about the various facets of chemistry. However, a more encompassing approach, supporting STEM education, can be even more satisfying.

The AAAS STEM Volunteer Program website www.stemvolunteers.org/ is an example. Curricula are evolving from discipline -focused and learning by rote, to problem/project learning, which is also a key element of the Next Generation Science Standards. This involves students learning programmatic content by working on problems in teams. Generally, the problems are multidisciplinary, incorporating engineering and mathematics in addition to one or more science disciplines. Frequently, elementary teachers have minimal training in STEM, so a STEM volunteer can be of major assistance. But the experience of a STEM professional can

also be of value to middle school and high school science teachers, who have little experience solving complex problems.

Another way to provide broader support to teachers is to stimulate student interest in science as a whole. This can be done by encouraging students to ask any question they have, and, if you don't know the answer, do some homework, and come back with the answer. An extreme example is provided by one of our volunteers, a retired astrophysicist. He goes to his school four hours a day for four days a week, and answers questions from 2nd through 5th graders, who come in groups of three for half hour sessions, including lunch. He is esteemed by the principal, teachers and students, as their "scientist in residence", and finds it to be very satisfying.

Other programs of this type are: RE-SEED, www.reseed.neu.edu/, Boston; Maine School Science Volunteers, www.maineschoolsciencevolunteers.org, southern Maine; TOPS, Teaching Opportunities for Partners in STEM, of SCV, www.topsofscv.org, San Jose, CA; TOPS, Teaching Opportunities for Partners in Science, www.sjcoescience.org/tops.html, San Joaquin County, CA; TOPS, Teaching Opportunities for Partners in STEM, Tuolumne, www.stemtracks.org/tops.html, Tuolumne County, CA.

In conclusion, I strongly advise you to go back to school and support STEM teachers. They will appreciate your efforts, and you will gain a high level of personal satisfaction.

The next article is another in our series of the history of science and of well known chemists.

Stephanie Louise Kwolek, the inventor of DuPont Kevlar by Dr Rita M Vasta

Dr. Rita M. Vasta met Stephanie at the Pioneering Research Lab in 1982. They became lifelong friends and Stephanie mentored Rita during her career at DuPont and into her educational career. Dr. Vasta is currently an Assistant Principal at Delcastle Technical High School, Wilmington, DE.

Stephanie was born on July 31, 1923 in New Kensington, PA of Polish immigrant parents, John and Nellie. She has a younger brother, Stanley. Stephanie enjoyed the outdoors with her father who took her on nature walks and developed her sense of curiosity and adventure.

Unfortunately, Stephanie's father died when she was 10 years old and her mother, Nellie, had to go to work to support the family. Now at home watching her brother, she became interested in sewing and fashion. She would sew clothing for her dolls. Her passion for sewing continued through her life as she made clothes for herself and her dolls.

When she entered high school, her classes brought her to the chemistry laboratory and her observation and precision skills made the chemistry laboratory an exciting new world. She wanted to become a doctor upon graduation but there were no funds and she decided to study chemistry and then later go to medical school.

Stephanie's mom asked a neighbor to drive Stephanie to the Carnegie Institute of Technology on Pittsburgh and she entered school in 1942. When she graduated in 1946, the war was over and with the soldiers returning, it was difficult for women to find employment.

Stephanie visited the DuPont Company in Buffalo, NY but was not offered a job until she demonstrated her chemistry knowledge. After her presentation to Hale Charch, she made it known to him that if the job offer was not in hand before she left the building; she was going to look elsewhere. The job offer was immediately made. She was at the

Buffalo Labs until 1950 when Textile Fibers moved to the Pioneering Research Lab at the Experimental Station in Wilmington, DE.

In 1959, she wrote an article with Paul Morgan, “The nylon rope trick: Demonstration of condensation polymerization” for J. Chem Educ, 36(4);182 which started her lifelong work with mentoring children in the wonders of science. She always had time for children and young adults to discuss science and to show them the science that they used every day. She was also a mentor to young chemists throughout their careers.

In the 1960’s the Textile Fibers Department scientists were challenged to create a fiber stronger than steel. Stephanie was working on different polymers and one day, she pulled a golden fiber from a cloudy solution and sent it for testing. She waited for the test results and after some time, she was concerned when she did not hear from the Physical Testing Lab. She inquired about her sample and was told that the fiber was stronger that the current equipment and they were ordering steel fiber testing equipment for her sample. This started the round the clock synthesis and testing for the patent, US 3,819,587, Wholly Aromatic Carbocyclic Polycarbonamide Fiber Having Orientation Angle of Less Than About 45 degrees, the basis for Kevlar® fiber.

From that point on, the rest as they say is history. During her career, she is credited with at least 15 U.S. patents on anisotropic materials and their properties.

She received the following awards:

- Howard N. Potts Medal for Engineering, Franklin Institute (1976)
- Chemical Pioneer Award, American Institute of Chemists (1980)
- Award for Creative Invention, American Chemical Society (1980)
- SAMPE George Lubin Memorial Award (1991)
- DuPont’s Lavoisier Medal (1995)
- National Inventors Hall of Fame (1995)
- IRI Achievement Award (1995)
- USPTO American Innovator Award (1995)
- National Medal of Technology and Innovation (1996)
- Perkin Award (1997)
- Lemelson-MIT Lifetime Achievement Award (1999)
- National Academy of Engineering (2001)
- National Women’s Hall of Fame (2003)
- Honorary doctoral degrees from Carnegie Mellon University (2001), Worchester Polytechnic Institute (1981), Clarkson University (1997) and University of Delaware (2008)
- Hall of Fame of Delaware Women, 2014

Additional Honors

- Innovator’s Walk of Fame, Science Center, Philadelphia, PA (2015)
- Historical Marker at her home site, New Kensington, PA (2016)
- Royal Society of Chemistry grants a biennial “Stephanie L. Kwolek Award” to recognize exceptional contributions to materials chemistry from a scientist working outside the UK

Stephanie passed away on June 18, 2014. Stephanie’s awards and papers are housed at the Hagley Museum, Wilmington, DE and are open to the public to review. Currently, there is a display about Stephanie and Kevlar® including its chemistry and applications on the three floors of Brown Lab at the University of Delaware. The display is open to the public.

ACS INTERNATIONAL CHAPTERS AROUND THE WORLD

International Chemical Sciences Chapters Affiliated with ACS and The Saudi Arabian Chapter by Satinder Ahuja, PhD - Chair, Joint Task Force on Formation of Chapters Overseas

Satinder Ahuja earned his PhD from the University of Sciences in Philadelphia, and managed development of new drugs for 30 years. Since 1994, as President of Ahuja Consulting, he has been advising companies worldwide on issues relating to pharmaceuticals and the environment. As the founder of Ahuja Academy of Water Quality, he has been helping, pro bono, solve the problem of water contaminations. He has served on distinguished panels for NSF and UN, and won a number of awards. His latest books include Comprehensive Water Quality and Purification (four volumes), Elsevier, 2014 and Chemistry and Water: Sustaining the World's Most Crucial Resource. Elsevier, 2017.

Chemistry interconnects all of us worldwide. Chemists and chemical engineers want to know the greatest and latest in the field. To achieve this goal, they strive to be part of the finest professional societies. The American Chemical Society (ACS) fills this role admirably, as it is the largest professional society in the world and holds two national meetings every year. It is where chemists and chemical engineers meet and discuss the latest developments in their fields and have a chance to learn from other disciplines as well. Furthermore, they can network and socialize in some of the major cities in the USA.

In 1989, Saudi Arabian chemists requested that the International Activities Committee (IAC) of ACS help them affiliate formally with ACS. Some of their goals are to foster professional growth and development of chemical professionals within Saudi Arabia and the Gulf region; and to promote awareness of chemistry among students and the community-at-large.

I was asked by Helen Free to chair the Joint Task Force composed of representatives from the Committee on Membership Affairs, Local Sections Activity Committee, Committee on Constitution and Bylaws, Committee on Divisional Activities, and IAC (with John Malin as staff liaison) on the formation of international chapters. We met on Dec. 11, 1989, to consider how best to meet the needs of international ACS members who want to form officially recognized affiliate groups. After full discussion of the issues, the task force reached a consensus on establishing a mechanism by which they could form officially recognized groups. New bylaws were written to describe the mechanisms of establishment, operation and dissolution of these chapters, without any cost or liabilities to ACS.

On December 19, 1990, a petition was transmitted to Dr. John Crum, Executive Director of ACS, to amend the Constitution and Bylaws to permit the formation of these chapters. The new Bylaw IX (Constitution, Article XIV) for International Scientific Chapters was proposed, including sample Bylaws for these chapters. After considerable discussion, the Council approved the amendments.

The **first** International Chemical Sciences chapter, in Saudi Arabia, was affiliated in 1993. Dr. Siddiqui (current Chair) says they have 500 members. More information can be found at https://saicsc-acs.com. *(Editor: this is an excellent web site with information about the meetings of the Saudi Arabian chapter, and photos of events).*

To enrich chemists worldwide, a total of 19 international Chapters have been approved to date https://www.acs.org/content/acs/en/global/international/chapters.html:

- Australia
- Brazil
- China National Capital Area (JingJinJi)
- Hong Kong
- Hungary
- India
- Iraq
- Malaysia
- Nigeria
- Peru
- Romania
- Saudi Arabia
- Shanghai
- South Africa
- South Korea
- Southwestern China
- Taiwan
- Thailand
- United Arab Emirates

I would like to thank Bradley Miller (Staff Liaison,International Activities Committee) for providing useful information, and all those who helped in the approval process for the first Science Chapter abroad that led to the formation of 18 more. Since 1964, it has been my pleasure to serve ACS locally, nationally, internationally and to establish lasting activities such as Visiting Scientist Program for International Scientists and Chromatography and Separation Chemistry Subdivision. Senior chemists can help advance our profession.

The ACS Nigeria International Chemical Sciences Chapter: A Review of their Activities for the first two years of their existence - By Professor Joshua Obaleye, President of the ACS Nigerian Chapter

Prof. Joshua Ayoola OBALEYE obtained both his BSc and PhD in the USA. He joined the University of Ilorin, Kwara State, Nigeria in 1987 where he was promoted to full professor in 1996. He has served as the Head of the Chemistry Department and Dean of the Faculty of Science at University of Ilorin.

The Nigeria International Chemical Science Chapter was established in December, 2015, at the Honolulu meeting along with Australia, Brazil and Peru. At that time, the Nigeria Chapter had 36 members.

The Nigeria Chapter in collaboration with the Office of International Activities hosted the 2015 Festival of Chemistry in Abuja, which was held on September 5, 2015, at the Abuja International Conference Center. This was the first activity to be organized by the Chapter, the first to be

hosted in Africa and the seventh globally after Mexico, Colombia, Peru, Chile, Puerto Rico, and China. Ricardo McKlmon (ACS Marketing Manager International Activities) and Bradley Miller (Director, ACS Office of International Activities) came to Abuja to witness the event. It was highly successful with three hundred students in attendance and thirty volunteers. The Chapter won the Chemiluminary Award for Global Engagement of an International Chemical Sciences Chapter. The second Chemistry Festival, "If elements were Humans", was held on November 17, 2016, during Chemistry Week, at the Faculty of Science, University of Lagos, Akoka. Five hundred students from twenty schools attended. The demonstrations at this festival supported the vision of ACS to improve people's lives through the transforming power of chemistry.

The Festival of Chemistry marks the grand finale of Chemistry Week. It features hands on activities, documentary films and games targeted at secondary school students led by volunteers. It was an exciting programme that attracted a huge crowd.

Other activities of the Chapter include the first symposium organized on the theme "Recent Developments in Sustainable Chemistry" held at the University of Ilorin; a Student Excursion to Shell Oil Facilities; and an excursion of University of Uyo Students to Shell Nigeria's Industrial Area in Port Harcourt. The ACS Student Chapter Ilorin organized a community interaction activity involving Junior Secondary School Students Part 2 in metropolitan Ilorin, and students of the Department of Chemistry, University of Ilorin, Kwara State. This was held at the Chemical Engineering Laboratory, University of Ilorin, Ilorin, Kwara State. The Future Scientists Symposium 2017 event arose as an ACS Student Inter-Chapter Relations Activity in Nigeria. This involved the University of Uyo (UNIUYO), the University of Ilorin (UNILORIN) and the University of Agriculture Makurdi (UAM), and aimed at creating a platform for learning, mentorship, collaboration, networking and information sharing as well as skills demonstration. The theme was "Research for Sustainable Development in Nigeria" held at the Ladoke Akintola University of Technology (LAUTECH), Ogbomoso, Nigeria. As a result of this successful event, Ladoke Akintola University of Technology's ACS Student Chapter hosted the 2nd Annual Symposium on Sustainable Chemistry in March 2017. This focused on improving relationships between industry and academia to achieve excellence in research. It was held at the University of Ilorin Main Auditorium and was a colorful event with a high caliber of industrialists, academics and students.

Editor's Note: The book review that follows is the second in a new series. If you have read a book to related science, and would be prepared to write a short review of it (whether you liked it or did not like it), we would be interested in seeing it. Please email your review to seniorchemists@acs.org. Thanks!

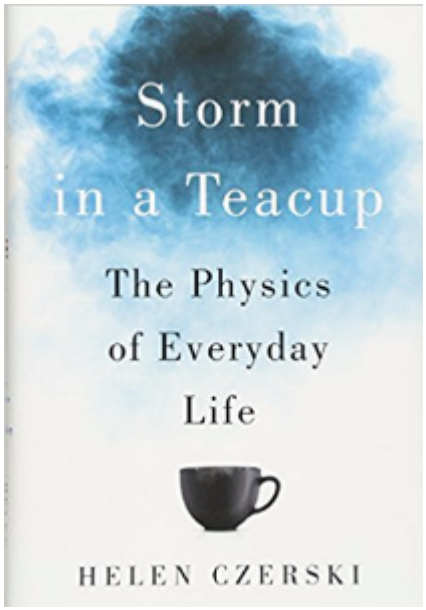
A review of "Storm in a Teacup" by Helen Czersky
Published by W. W. Norton & Company, 2016

Review written by Anna Wilson

Anna M. Wilson lives in Lafayette, IN, and is retired from the Biochemistry Department at Purdue University where she was the Teaching Laboratory Coordinator for 36 years, including lab experiments for the general biochemistry courses. She has been an ACS member for 42 years and is a member and treasurer of the ACS Division of Chemical Education and will be finishing her final term this year. She enjoys reading books on all topics to learn new things and using the computer to create photo and video projects for family and friends.

Have you ever wondered why pigeons bob their heads or wondered how water reaches the top of a very tall tree? "Storm in a Teacup" by Helen Czerski is a fascinating book that provides the answers to these questions and many more. Ms. Czerski is a physicist at University College London's Department of Mechanical Engineering, and a science presenter for the BBC.

The book explains how many things behave as they do. Chapters include Popcorn and Rockets, Small is Beautiful, Spoons, Spirals, and Sputnik. Some history of science is included but not enough to bore the casual reader. Scientific words are explained in footnotes or in descriptions of what happens.



For example, a pigeons' head bobbing is that he bird can see what is coming as it looks for food or danger ahead. So, a pigeon thrusts its head forward, and then takes a step that lets its body catch up, and then thrusts its head forward again. The head stays in the same position through the step so the pigeon has time to analyze this scene before moving to the next position. Humans do a similar thing but human brains are better at stitching all these snapshots together into one long movie without our being conscious of it.

How does water reach the top of a 300-foot-tall tree? The trees are alive, still growing, and water is flowing upward! Water has been flowing upward since the tree was a seedling and has never stopped. The whole process works because the water has never stopped flowing and because the conduit is only a few nanometers across. Water travels in a system of tiny cellulose tubes called xylem that go from the roots to the leaves. Capillary action is strong enough to suck water upward for a few yards but most of the work is done by pulling. At the top, leaves use sunlight, carbon dioxide, and water for photosynthesis. In the leaves at the top of the tree, the water pipe has decreased in size by branching and branching until the stoma in the leaf is about 10 nanometers across. Sunlight heats the leaf and a water molecule is pulled away from the rest by evaporation. Now there is a space at the top where surface tension is pulling a new molecule to replace it. This happens all down the channel and water is pulled to the top.

The book is very readable for the non-scientist as well as the scientist and makes the world around us interesting in ways we haven't thought of yet.

THE BUCKET LIST FOR SENIOR CHEMISTS

The two following articles continue our series of short travel articles for senior chemists, written by senior chemists. Write to us if you have an idea for this series.

River Trips by Susan Fahrenholtz, Member of the Senior Chemists Committee Additional information by Lynn Hartshorn, Newsletter Editor

River cruising is a great way to travel for seniors because you visit interesting places, you don't have to pack and unpack, and you don't get seasick. Viking and the other companies will even help you with your travel arrangements. We have taken trips on the Rhine, the Danube, the Elbe and the Rhone with Vanguard and Viking Companies and enjoyed all of them. The boats usually travel overnight, and you wake up in a new destination each day. Usually there will be a tour, and then you are free to do what you wish, or simply stay on the boat. Cruises vary from seven days to about two weeks, depending on the itinerary. The cabins are comfortable, and many have balconies. Food is excellent and service is good. Quite often evening programs about the region are offered. The boats vary in size, with the newer "Longships" carrying about 200 passengers. The older boats have fewer passengers.

More information may be found at the Viking web site, www.vikingrivercruises.com or you can call 1-877-668-4546. Other river cruising companies include:

Uniworld: www.uniworld.com
Avalon: www.avalonwaterways.com
Vantage: www.vantagetravel.com

Viking has also started offering ocean cruises. The boats are larger than the river cruising bots at 930 guests, but still small compared with the usual ocean cruises. The website is vikingoceancruises.com

Travelling in Italy: Two Interesting Museums by David Bowen

David Bowen is a US chemist who worked as an analytical chemist for about 24 years in the US and the UK and then moved into computing and information management. He is now partly retired and lives in Canterbury (UK) and Mondovi (Italy). He has been an ACS member since the 1960s and continues to rely on "C&E News", and the RSC's "Chemistry World", for truthful and encouraging news. He is happy to assist any seniors who might be planning a trip to this area of Italy, and advise reasonable hotels and good B&Bs. His email address is david.bowen@audata.co.uk

For chemists travelling to the Turin region of Italy, I recommend the Museo Ceramica (Ceramics Museum) in Mondovi, about one hour south of Turin. It is an example of the many small museums scattered about Italy. The exhibits show the history and manufacture of ceramics in this area. See www.museoceramicamondovi.it for details.

Another interesting museum is the "Museum of the Risorgimento" in Turin. This refers to the period or the movement for the liberation and unification of Italy, 1750-1870. While not specifically scientific, it gives the Italian perspective on this movement, (and on Napoleon) and the change in Europe from feudal to "enlightened. "There is plenty more in the region to see also. See the following from "TripAdvisor.com" (Editor's note)

In Turin, the capital of the Piedmont region of northwest Italy, sports cars and chocolate are a matter of pride. The city is also home to the Museo Egizio, one of the most impressive collections of Egyptian artifacts in the world. A stroll around Piazza Castello and along the Via Roma encompasses many of the must-see sights. Valentino Park houses an 18th-century

castle, botanic garden and medieval village. When you've worked up an appetite, sample casual trattorias for pastas, regional wines and coffees.

SENIOR CHEMISTS EVENTS AT ACS REGIONAL MEETINGS 2017

SCC has begun a new activity: arranging events for Seniors at regional meetings. If you are helping to plan a regional meeting and would like a senior activity, then please contact our committee at seniorchemists@acs.org. Three reports of regional meetings follow.

Mid-Atlantic Regional Meeting (MARM) by Don Clarke, SCC Member

MARM 2017 was held in Hershey, PA. The Senior Chemists breakfast was held on Monday, June 5. Attendance was capped at 25 because of the room size. After a short introduction and recognition of 50 year members present by Lorena Tribe, co-chair of MARM 2017, Brad Miller staff liaison for the ACS International Activities Committee thanked those in attendance on behalf of the IAC which funded the breakfast. Those who preregistered received a refund via a gift card from the Hershey store. Dorothy Phillips from the ACS board of directors introduced the speaker, Kabrena Rodda, of Pacific Northwest National Laboratory. Her talk was entitled “Responsible Science and the Role of the Chemist. Toward a Safer, More Secure World.” Among those in attendance were ACS president elect Peter Dorhout, past president Ned Heindel 1994) and Ingrid Montes from the ACS board of directors.

Kabrena Rodda’s talk addressed the importance of individuals and governments acting responsibly. Responsible science can be defined as a set of shared attitudes, values, goals and practices characterizing both individual and organizational commitment to honest, verifiable, safe, ethical and peaceful scientific research for the common good. Stated more generally, the responsible conduct of science is simply good citizenship applied to the practice of science. An awareness of responsible science is the first step in empowering scientists to make ethical, safe, honest and responsible choices even when they are under pressure or when a course of action appears ambiguous. Recent efforts led by the American Chemical Society in the development and adoption of the Global Chemists’ Code of Ethics were described. The talk was followed by a lively question and answer period as well as animated conversations.

The Northern Regional Meeting (NORM) by Warren Ford, SCC Member

NORM was held in Corvallis, OR, June 25-28, 2017. Seniors were invited to a social hour in a room adjacent to the site of the whole meeting social hour at 5 pm on the first full day of the meeting. All registered attendees, including seniors, were given one free drink ticket. No seniors program was scheduled at the social hour. The outcome was that at least 15 seniors appeared at the room, all enjoyed the usual social hour conversation, but there was no formal promotion of SCC activities. I also distributed copies of the May 2017 SCC Newsletter and the SCC Strategic Goals card at the Portland Local Section table at the exposition. A representative of the Puget Sound Section was particularly interested in establishing a local section program, and I gave her a copy of the Local Section Senior Chemists Group & Activity Starter Kit. I had Senior Chemists ribbons available to attach to meeting name tags. I wore one and gave one to Gerry Meyer, but there were no other takers of whom I am aware. Overall, NORM organizers publicized a senior chemists’ social well, but had no special program.

The Great Lakes Regional Meeting (GLRM) by Lynn Hartshorn, SCC Member

The GLRM was held in Fargo, ND from June 27-30. There were 245 people registered for the meeting and Lynn Hartshorn attended for the senior chemists. The SCC poster was prominently displayed close to the registration desk, together with handouts: the SCC Newsletter, the cards with the goals and aims of SCC and Senior Chemist ribbons. A Senior Chemists Coffee event was scheduled for Wednesday morning from 8am to 9am, in the room which following this event became the all-day hospitality room. Some of the hand-outs were moved into the room, and coffee, tea, lemonade and pastries were provided.

Although 47 people registered for the event, only 12 attended. This may have been because some of the students who had registered thought that the event was only for seniors. There was also a room change.

However, the group that attended, that included members of ACS Governance, engaged in an excellent discussion, including a conversation about what form SCC events at Regional meetings might take. Suggestions included having a short program, (perhaps about careers in chemistry), having a sign saying that Senior Chemists would be available for informal discussions at various times in the room, (a modified version of the “Speed Networking” offered at National meetings,) and more advertising (perhaps an announcement at the plenary session on the first night of the meeting that students are welcome to come and chat to a senior chemist about careers for a few minutes). Many people also suggested that there should be a small charge for the event on the registration form. It is more likely that people show up if they have paid for an event. Though attendance was small, those present enjoyed the event.

Have a Hot Science Topic to Discuss?
Share It on the Senior Chemists Group on the ACS Network

A Senior Chemists Group was established on the ACS Network to encourage communication among senior chemists. Members of the group can communicate with their peers, post announcements about upcoming Local Section events for senior chemists, and start discussions about "hot topics" of interest to senior chemists. Members will also receive information on how to participate in programs in need of your expertise and experience. PLEASE JOIN THE GROUP by selecting the following link that will take you directly to the ACS Network: https://communities.acs.org/groups/senior-chemists. Once you’re there, log in with your ACS username and password. Then select the “Browse” button and under that list, select “Groups.” It will bring up a listing of all the groups that have been established on the Network. In the filter/search window, type in “Senior Chemists” and the group will come up. You may select the group and then choose to join or follow the group. If you experience difficulty with logging in, please let us know by sending a message to seniorchemists@acs.org for assistance.

The Senior Chemists Group on the ACS Network is a great way to communicate with your senior chemist peers, so **SHARE A HOT TOPIC** with us and **LET'S START TALKING!**

SPECIAL ANNOUNCEMENTS

The ACS Scholars Program by Don Clarke, Member SCC

Eli Pearce, former ACS President, founded the Silver Circle which grew into the Senior Chemists Task Force and is now the Senior Chemists Committee. One of his favorite charities was the ACS Scholars Program which he helped found. You are probably aware of the impact this scholarship program has had for high-achieving African American, Hispanic and American Indian undergraduates in the chemical sciences and its transformative power for underrepresented students in this field. The Senior Chemists Committee helped to establish the Eli Pearce Memorial Scholarship. Several SCC members have made donations, as did the Eli Pearce family.

When $100,000 has been raised and invested in this fund, an ACS Scholars - Eli Pearce scholarship will be established and awarded annually to a deserving student. Your gift, combined with those of Eli's colleagues, family, and friends is important for achieving this goal. We are almost halfway there!

You may make your gift online at www.acs.org/donate, select "Other" and enter ACS Scholars – Pearce Scholarship. Or, contact Mary Bet Dobson in the ACS Development Office at m_dobson@acs.org or 202-872-4094 to pledge your donation over time, to make a gift of stock, or to give directly from your IRA.

This named scholarship will serve as a lasting and meaningful tribute to Dr. Pearce's dedication to mentoring in the chemical sciences and his influence nationally and internationally in promoting diversity in our profession.

The ACS Landmarks Program: Nominations Needed!

By John E. Adams, PhD ACSF
District V Director, American Chemical Society
Chair, Committee on Public Affairs & Public Relations (PAPR) and Chair, Board of Trustees, Group Insurance Plans for ACS Members

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As Chair of the Board Committee on Public Affairs and Public Relations (PA&PR), I invite Senior Chemists to help identify contributions to chemistry that warrant designation as National Historic Chemical Landmarks (NHCL). The stated mission of the NHCL program is "to enhance public appreciation for the contributions of the chemical sciences to modern life in the United States and to encourage a sense of pride in their practitioners for chemistry's rich history. The program does this by recognizing seminal achievements in the chemical sciences, recording their histories, and providing information and resources about Landmark achievements." One criterion for Landmark designation is that the achievement being honored must have occurred 25 or more years ago. Who better, then, to identify such achievements than Senior Chemists, who either may be aware of the contributions or may have been involved in the contributions themselves?

Eli M. Pearce
Image by Peter Cutts Photography

Eli M. Pearce, 86, a retired research professor at New York University Polytechnic School of Engineering and a past- president of the American Chemical Society, died at a Brooklyn hospital on May 18 2015 of complications from a broken hip and kidney disease.

“Eli was extraordinary in so many ways—a brilliant polymer scientist, a great leader at his university and within ACS, a passionate advocate for chemistry education reform, and a man who worked tirelessly his entire life for everyday chemists and to ensure that women and minorities had equal opportunities for advancement in society and in their professions,” says Madeleine Jacobs, former ACS executive director and chief executive officer. Born Eli Perlmutter to Russian immigrants, Pearce changed his name as a young man to circumvent anti-Semitism in the working world. He received a BS degree in chemistry from Brooklyn College in 1949 before serving in the Army during the Korean War. Pearce earned a PhD in chemistry from Polytechnic Institute of Brooklyn (now NYU Polytechnic School of Engineering) in 1958, studying under polymer chemistry pioneer Herman F. Mark and completing his thesis with Charles G. Overberger.

Early in his career, Pearce worked for DuPont, J.T. Baker, and Allied Chemical before becoming director of the Dreyfus Laboratory at Research Triangle Institute. In 1974, Pearce accepted an invitation from Mark to join the faculty at Polytechnic Institute of Brooklyn. Pearce was named University Professor of Chemistry & Chemical Engineering in 1990;

Even though more than 80 Landmarks have been designated to date, we know that there are many more that are worthy of consideration. We also know that there are large areas of the country, particularly in the West, in which there are no Landmarks currently sited even though there surely are contributions that ought to be recognized in those areas. Please help PA&PR and its Landmarks subcommittee identify these significant achievements in our science and profession that deserve NHCL recognition. More information about the program, including the list of current Landmarks and the nomination form, may be found at the ACS website under the Education tab. You also may contact the NHCL Program Manager at landmarks@acs.org with questions and assistance in preparing your nomination.

The OLLI Program: Volunteers Needed by Philip Carl

I am head of the science/technology subcommittee for Duke OLLI-a volunteer group in the Research Triangle Park area that organizes non-credit classes for retirees on a wide variety of subjects. OLLI is “The Osher Lifelong Learning Institute”. I’m always looking for people to teach classes on various aspects of chemistry. You can read about OLLI at http://learnmore.duke.edu/olli/. If you are interested in learning about this opportunity or know people who might be, please have them contact me via the email noted below.

he served as director of the Polymer Research Institute from 1980 until 1996 and as dean of Arts & Sciences from 1982 until 1990.

He published more than 250 papers on his research, which focused on polymer synthesis, degradation, and flammability. Pearce garnered many awards, including the 2006 H. F. Mark Medal from the Austrian Research Institute for Chemistry & Technology. In 2009, he was named an ACS Fellow.
An emeritus member of ACS, Pearce served as the society's president in 2002 and director- at-large on the ACS Board of Directors from 1999 until 2000 and again from 2001 until 2003. He was also a Councilor with the Polymer Chemistry Division from 1982 until 1998, and an ex- officio councilor from 2004 until 2015.

Pearce was a strong supporter of the ACS Committee on Minority Affairs and the ACS Scholars Program, Jacobs says. He was also instrumental in establishing the Senior Chemists Committee because he believed that retired ACS members could be meaningful ambassadors in K–12 education and in the larger public, she adds. "His legacy is enormous, and he will be greatly missed."

OLLI classes are directed towards retirees. They are non-credit and there are no grades. Classes are typically ten sessions fall and winter semesters, and six sessions in the spring. Teachers can receive up to $400 for the ten week classes and $200 for the six week classes Class sessions are typically 90 minutes. Students come with all sorts of different backgrounds which makes teaching both challenging and fun. Class size is typically 10-20 students. We could use teachers in all areas of chemistry. Interested individuals can email me, and we can get together to talk about possibilities.

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Editor Note: These classes are taught on-site at Duke University, but if you are interested and do not live in the area there are over 100 similar programs at universities and colleges across the US. See the website: osherfoundation.org

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EDITOR'S NOTE by Lynn Hartshorn

Many thanks are due to all the authors listed above, and to the editing group. If you would like to help with occasional editing, I would love to hear from you. Please email me at LGHARTSHORN@stthomas.edu.

We welcome submissions for articles from all of our readers. Some ideas of the range of articles can be seen by looking at this Newsletter. If you are not sure if your article would be usable, please send an outline of your article to seniorchemists@acs.org. Articles should be a maximum

of 500 words and be submitted to me as a Doc or DocX. The deadline is January 15 for articles that will be included in the spring newsletter that will be published in March 2018.

ACS SENIOR CHEMISTS COMMITTEE

The Senior Chemists Committee was established in January 2013 as a Joint Board-Council Committee and consists of 16 members and seven associate members. The Committee serves two constituencies within the ACS: (1) seniors who are still active either as full time or part time employees and consultants, or those who 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 and are looking for guidance in how to progress.

SCC VISION

Improving lives using the knowledge and experience of senior chemists

SCC MISSION

Address and support the needs and ambitions of senior chemists and to utilize their experience and knowledge