

Subject: Fall 2012 Senior Chemists Newsletter

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Newsletter for Senior Chemists

December, 2012

Dear All:



WE ARE A COMMITTEE effective January 1, 2013! At the Council meeting in Philadelphia, the ACS Committee on Committees (ConC) chair, Dawn Brooks, brought a motion to the floor to constitute the Senior Chemists Task Force (SCTF) as a Joint Board-Council Committee of the ACS. Dr. Brooks did an excellent job of explaining the basis for the motion and answered several questions raised by a few councilors. The vote was overwhelmingly in favor. Soon after, the ACS Board of Directors ratified the Council vote and the Senior Chemists Committee was established.

The last meeting of the SCTF was excellent--a very full agenda. A recurrent theme of how senior chemists could support both the profession and the future was exemplified in two presentations made to the SCTF. Bill Suits, a councilor from the North Jersey Local Section, presented a report on the "Students to Science" program. There is a desire to enlist more senior chemists to expand the program. Another guest, Don Rea from Virginia, presented the AAAS/SSE STEM volunteer program. The objective of the program is to promote scientific literacy in public schools and motivate students to pursue STEM careers.

The SCTF sub-committees continue to function very effectively. There was programming at the Philadelphia meeting with future programming "in the works" for both New Orleans and Indianapolis. Our newsletter has an ever-expanding audience and continues to evoke many positive comments. The Senior Chemists Breakfast is again a sold-out event with overflowing attendance. We are working to increase the number of senior groups associated with Local Sections; a more aggressive effort in conduction with the Committee on Local Section Activities (LSAC) needs to be part of our agenda.

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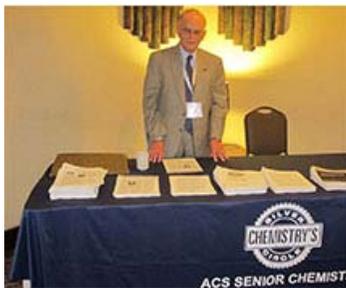
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Senior Chemists Newsletter Subcommittee:

For the first time, we had a presence at the 2011 Western Regional Meeting (WRM) where two senior chemists held one-on-one sessions with undergraduates. We duplicated this effort at the 2012 Fall Regional Meetings with a table manned by members of SCTF that was filled with resource materials and displayed a new Senior Chemists banner.



Robert Moore, SCTF member

The next newsletter you receive will be under the headline of the "Senior Chemists Committee". Again, a heartfelt thanks to all of you who have made that possible.

George E. Heinze, Chair
Senior Chemists Task Force

Senior Chemists Committee is Established

The establishment of the Senior Chemists Committee (SCC) as a Joint Board-Council Committee has been approved and will become effective January 1, 2013. The age demographics of the ACS powerfully illustrate the need for a Senior Chemists Committee. Of its more than 164,000 members, 37.10% are over the age of 50. This is one of the fastest growing segments of the Society.

The mission of the SCC will be:

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

The SCC will initially consist of 15 members and such associates and consultants as the ACS President and Chair of the Board of Directors deem necessary. 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. Examples are mentoring, career guidance and counseling, job training seminars and webinars, alternate career selection, problem support, workshops, and tutorials.

The Senior Chemists Task Force (SCTF) had formally requested to be reviewed and their request for the establishment of an ACS Committee on Senior Chemists (SCC) be evaluated. This task force had been functioning as a quasi-committee for three years, and was the culmination of more than a decade of task forces examining the need for a senior chemists committee.

The new committee will hold its first meeting in New Orleans on Monday, April 8, 2013 in conjunction with the 245th ACS National Meeting.

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The Newsletter for Senior Chemists is published by the American Chemical Society's Division of Membership & Scientific Advancement.

Mission Statement

The Senior Chemists Task Force was established in 2009 and is comprised of 21 members to function as the focal point for senior chemists over the age of 50 within the ACS and the chemistry enterprise at large. Their mission is:

1. To encourage and serve as a conduit for senior members to volunteer and contribute their energy and talent to the ACS, including governance, education, government affairs, mentoring, and community projects;
2. To provide useful service and information to seniors

NOAA Fisheries Chief Scientist Highlights Senior Chemists Breakfast

Steve Murawski, an internationally-recognized expert on marine ecosystems and natural resource conservation efforts, will be the keynote speaker at the Senior Chemists Breakfast in conjunction with the ACS National Meeting in New Orleans. His topic will be the development of interdisciplinary programs and research investigations and how activities such as recovery of the Gulf of Mexico marine ecosystem can be structured to achieve long term positive outcomes. The event is Tuesday, April 9, 7:30 a.m. Location to be announced.

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3. To foster networking opportunities among seniors, both nationally and locally;
4. To represent senior chemists in their interactions with other elements of ACS governance, bringing awareness of their needs, fostering, collaborations, and creating synergies.

Volunteering in Local High School Chemistry Classes

Senior chemists have a great deal of knowledge to share. They are, of course, experts in their particular field of chemistry, and also have a broad knowledge of chemistry. In addition, they can share their job experiences, and even advise students who are thinking of entering the field of chemistry as a career. This varied knowledge could be shared with a local high school teacher who is looking for volunteers. Two former high school teachers explain how a senior chemist could be of great help in a high school classroom.

Two years ago I retired from teaching after thirty-five years in public and private schools in Minnesota and New Jersey. The classes I taught included IB chemistry, honors chemistry, general chemistry and introduction to chemistry. For some of those years my workload numbered 150 students.

Occasionally I had the pleasure of having someone from the community or a parent volunteer to give a presentation to my students. Their talk might have been based on a science career, or a science-related topic in which they had expertise. Both my students and I appreciated so much the opportunity to hear from an expert about a practical application of chemistry, science research or a career opportunity.

The 3M Company's Wizards were a wonderful treat. These scientists came with experiments and demonstrations that impressed and excited the students.

Sometimes a volunteer helped in the classroom on a regular basis, assisting with labs or helping individuals with their work.

If you are a retired chemist or engineer, there are many volunteer opportunities that you are uniquely able to do. If you would like to help in schools, consider contacting the volunteer coordinator, principal or chemistry teachers at a school in your neighborhood. You will be welcomed with open arms.

After I retired, I read a stack of books, cleaned closets, and took classes. Then I realized that I was missing teaching teenagers. One can clean only so many closets. Now I meet weekly with a group of Somali girls at my former high school. I tutor them after school in chemistry. They are eager and grateful for the one-on-one help. I am delighted with the feeling of satisfaction that I get from helping them.

Jan Lane
High School Chemistry Teacher (Retired)

When I retired as a Chemistry Teacher two years ago, I still wanted to work with students and use my experience

Here in Minneapolis, to volunteer in public schools, I had to participate in a 3-hour orientation on a Saturday morning. At the orientation I indicated my areas of expertise and the age of students I wanted to work with. I was eventually contacted by the Volunteer Coordinator at my local high school who connected me with an interested teacher. We arranged for me to come in once a week for several hours, and he usually had me helping students work on problem solving. I enjoyed it so much that I later contacted Volunteer Coordinators at other area schools. Since I had completed the orientation, I was able to volunteer at those schools, too. One teacher had me helping out on lab days and another had me tutoring students one-on-one outside the classroom. Not every teacher or every student is open to help. Those occasional moments when I have helped a student understand something new have made it satisfying.

There are other opportunities as well. Many libraries have after school tutoring programs as does our local Community College. Use the internet to find out about volunteer tutoring opportunities and to apply for public school orientation in your area. You can make a difference, and you will enjoy it!

Janice Gepner
Retired High School Chemistry Teacher
Minneapolis-St. Paul, Minnesota



Memorial Gifts Honor ACS Member

Dr. Marjam G. Behar was born in Poland, moved from there to Portugal in 1930, and then to Cuba in 1939. By the time she was in high school, she was fluent in Polish, Yiddish, Portuguese and Spanish. With a doctorate from the University of Havana, she emigrated with her husband (also a chemist) and two year-old son to the U.S. in 1955. She worked for 20 years as a researcher in analytical chemistry at the Hospital of the University of Pennsylvania, and then served for another 21 years as a highly respected grants administrator at the National Institutes of Health, where she led a study section in biophysical and chemical sciences. [Read more about the influence and life of Dr. Behar.](#)

International Activities

The following articles are a summary of talks given at the ACS Philadelphia National Meeting Symposium "International Activities – Here's How We Did It" sponsored by the Senior Chemists Task Force (SCTF) and the Division of Professional Relations (PROF).

An International Meeting of Nobel Laureates and Students

The annual [Lindau Meeting of Nobel Laureates](#) began in 1951 in the island town of [Lindau](#), Germany, located in Lake Constance (Bodensee) near the Austrian border. Two physicians and Count Lennart Bernadotte, a relative of the King of Sweden and owner of the [garden island of Mainau](#) at the northwest end of the lake, initiated the meeting as a means of bringing young German scientists back into contact with the international scientific community.

In 1998 [Dr Ludwig Feinendegen](#), retired Director of the Institute of Medicine in Jülich, Germany, a noted expert in radiation biology and nuclear medicine, and a colleague at the Department of Energy (DOE), introduced me to the Lindau Meeting. Dr Feinendegen was Vice President of the Council governing the meeting, and convinced the DOE to support small student delegations to the 1998 and 1999 meetings, which I attended with my wife, Paula Jean. In 1999 Martha Krebs, Director of the DOE Office of Science (SC), met with Countess Sonja Bernadotte, President of the meeting and wife of Count Lennart, and decided that a larger delegation should be sponsored by SC for the [2000 meeting](#), the 50th meeting and the first with all three Nobel Prizes in the sciences participating. Dr Krebs named me to lead the effort.

SC could nominate one graduate student working on an SC project. SC staff evaluated the nominees and then forwarded the strongest ones to the Lindau Council for approval. The Oak Ridge Institute for Science and Education (ORISE) took responsibility for managing the arrangements for the delegation (and today handles the nomination process and other aspects for the American delegation). In 2001 the Oak Ridge Associated Universities joined in supporting students. Since then, NIST, NSF and NIH have become participants.

I was present as manager of the American graduate student delegation for nine years, 2000–2008. During this period the meeting evolved from one with nearly all of the students being from Germany and neighboring countries to a gathering of students world-wide, with more than 50 countries represented among the students each year.

The meeting brings together Nobel Laureates and students for a week of lectures and informal discussions and social events. The laureates each year are in one of the three scientific disciplines of the Nobel Prizes, Chemistry, Physiology or Medicine, and Physics. The [meeting in 2013](#) will focus on chemistry. A typical meeting includes 25 to 40 Laureates and 600 or more students. In years ending in 0 or 5, Laureates in all three disciplines are invited, with as many as 60 attending. A [separate meeting](#) of recipients of the Sveriges Riksbank (Bank of Sweden) Prize in Economic Sciences in Memory of Alfred Nobel is held every third year (most recently in 2011). The meetings are run by a Council that crosses disciplinary lines and includes members of the three Nobel Committees.

The meeting runs like this:

- Sunday afternoon: Opening ceremonies, then social activities in evening
- Monday through Thursday mornings: Laureates give lectures and participate in panel discussions
- Monday through Thursday noon: Lunches with groups of delegations, laureates
- Monday through Thursday afternoon: Closed small group discussions with laureates who gave lectures in morning
- Monday through Thursday evening: Dinners and informal get-togethers
- Friday: Boat trip for everyone from Lindau to Insel Mainau, with a panel discussion and closing ceremonies
- And, most important: all day, every day: Students meet laureates on the streets or in the meeting rooms and talk; students meet students from other countries and talk.

The [2002 meeting](#) was the first one focused on chemistry that was truly international. Madeleine Jacobs, ACS Executive Director & CEO and then Editor of C&EN, attended the meeting and wrote a [five-page article](#), “A Nobel Success” that was published in the August 19, 2002, issue of the magazine. Her article starts this way:

Once-in-a-lifetime opportunity.

Those are the words that kept coming up in conversation with students who attended the 52nd Meeting of the Nobel Laureates in Lindau, Germany, July 1–5. Whether they hailed from Germany, Israel, Brazil, India, Africa, or the U.S., the students were unanimous in their agreement that they never expected to meet a Nobel Laureate. But to actually have a meal with a number of Nobel Laureates; talk to them informally one-on-one; and discuss views on the nature of discovery, scientific research, and even spiritual matters--that was beyond their wildest dreams.

[Extensive comments from the students](#) attending this meeting are available.

Today the meeting attracts widespread interest in the scientific community. The meeting's [Mediatheque](#) includes many videos from the meetings, as well as information on the several hundred Laureates who have attended over the years. Countess Bettina Bernadotte, daughter of the late Count Lennart and Countess Sonja, is the President of the Council. [Members of the Council](#) include several prominent chemical scientists: Astrid Graslund, Hans Jörnvall, Wolfgang Lubitz and Hartmut Michel.

The unique character of the Lindau Meeting can be summarized in this [comment by the author](#):

I know of no other meeting in the world where leading scientists spend so much time to interact with students. There are many conferences organized around science, but this one organizes science around interaction.

Roland F. Hirsch
Office of Biological & Environmental Research
Office of Science, U.S. Department of Energy



Ludwig Feinendegen (then Vice President of the Council for the Lindau Meeting), the late Countess Sonja Bernadotte (then President of the Council), Paula Jean Hirsch (wife of the author), and Countess Bettina Bernadotte (current President of the Council)



Pedagogical Peripatetics: Chemistry Education from Israel to Italy and Beyond

International activities in chemical education can take on many guises. Much depends on contacts abroad, and much depends on simple serendipity. This talk focused on both official and unofficial forays in a number of countries: science study tours in some unlikely places, a Fulbright fellowship in Israel, invitations to be a plenary speaker at chemical education conferences, research on medieval manuscripts, participation in international workshops, and attendance/presentations at the meetings of foreign chemical societies.

All of this activity began with the development of a chemistry course for art majors, which led to a sabbatical at New York University and at the University of California at Los Angeles, which led to collaboration with an art historian & a color and dye expert which led to analysis of medieval manuscripts in situ (in Europe and the Middle East) & Peruvian mummy bundles (in museo). Some of this work led to an intersession course for non-science majors in the History of Mathematics and Science, which led to study tours in the United Kingdom (facilitated initially by my late friend and mentor, Prof. John T. Stock), and this led to more adults being interested, and this led to filling an intellectual need for science study tours which continue today.

An invitation by the then-Director of the British Museum, Robert G.W. Anderson, one of my contacts on the study tours to Great Britain, to participate in a symposium in Berlin on "Durability and Change: The Science, Responsibility and Cost of Sustaining Cultural Heritage", was the launching point for several additional international activities including a Fulbright Fellowship for Israel, and invitations to publish in international journals and monographs of foreign chemical societies. Additional contacts resulted in conducting chemical education workshops for teachers in Israel and for graduate students in Puerto Rico, as well as sitting on doctoral dissertation committees in Norway and Puerto Rico. Other contacts led to invitations to present plenary lectures at conferences in Australia, New Zealand and Israel, among other venues. Participating in the meetings of the History of Chemistry Division of the Italian Chemical Society was particularly gratifying since they were held in such interesting places throughout Italy. This also afforded me continued contact with a colleague at the University of Florence with whom I was collaborating on translating one of his books into English.

So, what are the lessons to be learned from all these international activities? I would like to sum them up by presenting this list, which cannot begin to cover all the benefits of such activity:

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- Collaboration
- Cultural immersion
- Contacts for students
- Personal contacts
- Language (learning new and refreshing old)
- ACS involvement especially as a tour speaker
- Informal U.S. ambassador
- Lifelong international friendships

Mary Virginia Orna
College of New Rochelle
New Rochelle, NY

International Connections: Post-doc, Collaborations, Conferences, and Study Abroad

In the summer of 1960, as a newly-minted Ph.D. from the University of Michigan, whose travels had mainly been between his home in New York City and the Catskills, Atlantic City, and Ann Arbor, I left to spend a postdoctoral year at Sheffield University in England. I returned to begin a career at Boston University, which has involved more than 50 years of international collaborations and conferences that have taken me to Europe, Asia, Latin America, the Middle East, and Mauritius.

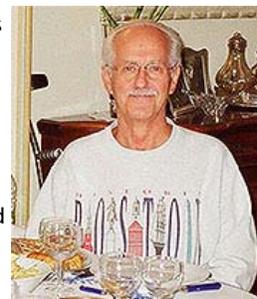
On my way to and during my postdoc in England, I had the opportunity to visit countries in western and eastern Europe, and the Middle East. As a young faculty member, I developed a research collaboration in inorganic photochemistry with Prof. Vincenzo Balzani (University of Bologna) that included work with Prof. Franco Scandola (University of Ferrara) and Dr. Giuliano Mulazzani (National Research Council of Italy). This collaboration with a grant from NATO on "Excited State Behavior of Cobalt, Rhodium, and Iridium Chelates", continued through 1979. My research connection with Mulazzani on free radical reactions of metal complexes, pulse radiolysis, the chemistry of coordinated radicals, and metal-center redox reactions, continued for more than 30 years, resulting in 21 publications, many reciprocal visits to Bologna and Boston, an eight-week research visit for each of two of my graduate students, and a lifelong friendship.

In the mid-1970's, I developed a collaboration with Prof. Nick Serpone (Concordia University, Montreal) on picosecond excited-state studies of metal complexes at the Canadian National Centre for Fast Laser Spectroscopy that resulted in many publications over 10 years and multiple visits from Boston to Montreal and vice versa. Additional NATO grants in the '80s and the '90s resulted in more travel and more publications: "Photo- and Radiation Chemistry of Heteropoly Compounds" with Dr. Elias Papaconstantinou (National Research Council, Athens); "Photoinitiation of Polymerization by Transition Metal Coordination Complexes" with Dr. Michèle Bolte (Université Blaise Pascal, Clermont-Ferrand).

In the mid-1980's, I was successful in obtaining an international collaborative research grant from NSF to work with Prof. Takeshi Ohno (Osaka University) on "Effect of Solution Medium on the Efficiency of Excited-State Electron-Transfer Reactions". The grant resulted in five trips for me to Japan, a year-long visit to Boston of one of Prof. Ohno's associates, and two six-week visits to Japan for one of my postdocs, all of which were scientifically and personally rewarding.

In addition, over the years I have attended international chemistry research and chemistry education conferences in many countries around the world.

Now emeritus, I am actively engaged in the development of science study abroad programs for Boston University, serve as the U.S. National Representative to the Committee on Chemistry Education of IUPAC, am a Member of the Organizing Committee of the Malta Conferences on Research and Education in the Middle East, continue to serve on the Steering Committee of the German Exchange Program between the Northeastern Section and the *Gesellschaft Deutsche Chemiker*, and have been an educational consultant for a U.S. State Department-funded Chemical Safety and Security Officer Training Workshop in Bangkok. My international connections have been an important part of my professional and personal life, and have provided me with new views on chemistry, wonderful friends and extended families, and deeper insights into history and culture.



Note from the author:

I would like to dedicate this presentation to the memory of Giuliano Mulazzani (May 11, 1941–January 31, 2010): scientific collaborator, co-author, and dearest friend.

Morton Z. Hoffman
Department of Chemistry
Boston University

Globalizing Science and Technology at DuPont

Founded in 1802 on the banks of the Brandywine River in Delaware, DuPont has grown in size, product lines and geographies to become the world's most dynamic science company by pioneering the development and application of science and technology to global megatrends driven by population growth. In October 2011, the global population reached 7 billion. The FAO estimates that that the world population will grow to 9 billion by 2050. With such a rapidly growing population, the world needs scientists and engineers to invent and innovate new ways to feed, protect and provide sustainable energy and materials to society more than ever before. At DuPont, we focus our global R&D engine on addressing these three key challenges. Our approach is to continue to strengthen our global R&D organization and to leverage the global R&D engine to meet local needs.

It comes as a surprise to many that over the past 30 years DuPont has continued to so aggressively expand its business footprint both technologically and globally that today more than half of DuPont's revenues come from outside North America and a third are derived from life science related businesses. Consistent with this growth, the DuPont R&D engine is composed of greater than 9500 scientists and engineers in more than 150 technical centers around the world. While many of these centers are small agricultural stations, necessary for understanding the microclimates in which our products are sold, these sites also include fully integrated world-class laboratories in China, India, Europe and the US. Our scientists have an unusually broad range of technical scientific competencies – from chemical engineering to biochemistry, from polymer chemistry to microbiology and from solid state photovoltaics to plant breeding, for example. Because we believe that new ideas are often generated at the nexus of disciplines and markets, we drive innovation through the integration of science into every aspect of new product development. Moreover, while we have strong competitors in the physical sciences and other strong competitors in the biological sciences we have few, if any, who can integrate these disciplines the way we can to create value for customers. This model becomes even more powerful with the addition of partnerships and collaborations with academia, governments and other institutions around the world to generate innovations that meet local needs.

Because of the importance of meeting the growing demands of people where they live, DuPont is continuing to grow its R&D organization outside of the U.S. through a three-part strategy: build market access, strengthen capability to serve, and optimize market presence.

From a historical perspective, DuPont's global R&D footprint largely evolved from a series of acquisitions and specific business opportunities. For example, DuPont traditionally utilized its existing offerings to build market access resulting in focused laboratories located close to strategic customers but lacking capabilities beyond those narrowly defined missions. Similarly, other laboratories had been acquired, along with manufacturing and business assets, built by parent companies to serve specific needs. Thus tactical needs delivered a somewhat balkanized footprint where many sites continued to play valuable roles but without the critical mass and integrated science capabilities of our Wilmington headquarters.

At the same time, with local demand increasing for products, DuPont continued to develop relationships within countries through recruitment and training of local talent.

So it was equally clear that by strengthening the local presence, DuPont could better serve the needs of customers in-market. And as a market-driven science company, we understand that integrating science expertise is essential to fully-leveraging our global R&D engine to meeting the local needs. As a result, more than a decade ago, when confronted with these challenges and a tactically-driven status quo insufficient to capture the full value from integrated sciences, DuPont developed a strategic plan for R&D that has resulted in placing scientists and engineers on five continents across the globe in mission-specific centers to identify and develop ideas for local markets. The new model has now delivered both integrated R&D centers and market-specific innovation centers, both of which are connected electronically to Core capabilities around the world.

The strategic laboratories developed under this plan were based on DuPont's Experimental Station, founded in 1903 as the prototype for integrated science.

Additionally, we had also understood the value of tapping into local talent as well as local market knowledge with our first interdisciplinary laboratory established outside of North America – the Meyrin, Switzerland site that has been successfully serving the entire European market since 1987. Together these models enabled DuPont to open new integrated sites in Shanghai, China in 2005 and Hyderabad, India in 2008 with another site still under development in Paulina, Brazil.

The first of these laboratories (Shanghai) has been so successful that it is now undergoing its second expansion. Home, today, to over 300 professionals, including 70 PhDs, Shanghai boasts state of the art applications development and customer tailored technical service capabilities with extensive networking throughout the Chinese academic community while, at the same time, being connected electronically to other centers of excellence around the world. This fully-integrated organization will swell to a staffing of 500 - 600 professionals when completed in 2013.

The DuPont Knowledge Center in Hyderabad, India, closely followed this model. Opened in 2007, it now houses more than 400 employees focused on developing sciences solutions for the India market, and leveraging India's science talent to global programs.

The most recent of our global R&D centers is now growing in Paulina, Brazil based on this same model. One of the key learnings from these experiences has been that while they may start out being low cost centers, this benefit is transitory; however, the ability to tap into creative scientists who really understand local cultures/markets and who are well-networked with thought leaders in regional universities and government labs is the real source of value in globalization.

In addition to building strategic R&D centers, DuPont has also found that there is still value in the small, targeted centers located close to customers. These facilities, which we have called "Innovation Centers" illustrate the company's latest technology offerings, applications and industry trends, and create collaboration spaces in-country to enable meetings between company clients and partners around the globe. They are extensively networked through videoconferencing to parent laboratories in-region as well as other strategic R&D labs around the world to provide customers with the best thinking of DuPont's entire technology workforce. Innovation Centers are now open in Russia, Japan, Korea, Taiwan, Thailand, India, Brazil, Mexico, and the United States. More are planned for Switzerland and Turkey.

In conclusion, DuPont is committed to market-driven innovation. Top talent with excellent capabilities in science and collaboration are key to building relationships and leveraging our global R&D engine to provide solutions for a growing world.

Henry Bryndza and Uma Chowdhry
E. I. DuPont de Nemours & Co.

Cultural Matters

With increased globalization and virtually instant communication, it is often assumed that research coordinated from the United States with numerous overseas sites holds few barriers to successful implementation and that the U.S. experience can be easily exported. The actual answer is both "Yes" and "No".

From a technical standpoint, "Yes"— a Diels-Alder reaction is the same everywhere; but from a cultural or management viewpoint, the U.S. approaches may not be clear. If you compare research management in the U.K. with that in Belgium, research in the U.K. is often organized much like that in the U.S. (i.e. project teams working on a single franchise), while in Belgium teams are often organized around an area of chemistry (e.g. imidazole chemistry). Language per se is not the principal barrier, however understanding what the language means can be critical—the same terms may have different meanings between countries.

The very concept of how information is used can differ widely. In the U.S. there is a strong emphasis on teamwork and information sharing. In much of Europe, information is guarded and has to flow thru formal channels, plus seniority and hierarchy are more emphasized in communicating. Moreover, in many European and Asian laboratories there are cultural differences deriving on whether there is a more "political" bent to management decisions versus influential senior scientists.

How can some of these differences be offset by U.S. management? You need to develop personal relationships with your peers, which can be done by encouraging social contacts, frequent "visits" by means of video conferencing or telephone contacts and initiating the concept of information sharing by being the first to share and suggesting reciprocity. Emphasizing the team and project approach can also enhance success. Finally, award credit inclusively—tangible rewards for excellent work, acknowledging all contributors and making management aware of all who participated, not just a chosen few.

George Heinze
North Jersey Local Section



American Workforce and Globalization

This presentation has two parts, loosely connected. The first is government support of education over 200 years and how it has strengthened the economy. The second describes the International Landmarks program and its ability to create stronger bonds with chemical societies in other countries.

Even before the Constitution was written the national government provided some support for education in the states. Such occasional funding continued in the 19th century climaxing with the passage of the Morrill Act of 1862. With it new institutions of higher learning were created. These were expanded in subsequent decades to include engineering schools and other programs dedicated to practical arts.

Education, formal and informal, was broadly available. The workforce was productive and innovative making the United States a major contributor to world trade.

The GI Bill of 1944 was comparable to the Morrill Act in its impact. Four million veterans received schooling. They were the foundation of an educated workforce and a growing economy in the last half of the 20th century.

In recent decades other nations have made advances similar to those the United States made during the Civil War and WWII. This country faces increased competition in the global marketplace. Past efforts in education no longer suffice to maintain our economy as preeminent.

* * *

Coupled to the changes above, the ACS is now interacting more with other national chemical societies. To create closer connections, the Landmarks program expanded its designations to include more foreign scientists who have had an international impact. The program was centered on the International Celebration of Chemistry 1999. Typically, a scientist was honored at a home location. A paired landmark celebrated advances in the U.S. coupled to those abroad. Among those in other countries were Raman, Priestley, Lavoisier, Staudinger and Fleming.

During the visits to Great Britain and Germany, conversations were held suggesting that they originate landmark programs to remind others of the many contributions of their scientists. Shortly after, Landmarks were initiated in both countries.



Edel Wasserman
Wilmington, DE

International Experiences in Chemistry: Expect the Unexpected

During my forty years as an academic chemistry professor, I had the privilege of participating in numerous international conferences, several joint research projects, a student exchange program between the UMass and the University of East Anglia (which provided unexpected X-rated experiences I won't detail here), sabbaticals in Denmark and Austria, hosting international visitors, ChemStudy trips, and a recent unsuccessful Nigeria trip (prevented by Icelandic volcanic dust grounding flights).

In 1970, I was invited to three successive chemistry conferences in Debrecen, Hungary, in the High Tatra Mountains of Slovakia and in Krakow, Poland. I had flown into Budapest and enjoyed music by a full orchestra during dinner in the Gelbert Hotel before heading for Debrecen where I met Asst. Prof. Frantisek Jursik from Prague and with whom I did joint research for the next three decades. (He remained an Assistant Professor for twenty more years because he wouldn't join the Communist Party and couldn't come to the US—all because of a superior who was an undercover KGB agent.)

A language problem arose because the telephone operators in Debrecen didn't understand or communicate in English so I missed an important call from the US while I was Debrecen. Then, during the first evening of the second meeting, I learned that the organizer of the meeting who had invited me was losing his position after the meeting. In the middle of the night, there was a knock on my door and I was invited by gestures from a bouncer-type individual to put on my shoes and come downstairs with him. I was petrified. However it had nothing to do with my host—it was a call telling me my mother-in-law had died and they had been trying to reach me for several days. Although I missed her funeral, the good news was that I also met:

- Prof. Fleming Woldbye, who invited me to the Technical University of Denmark to do my sabbatical in 1972. His Department even made my slides for talks I was giving elsewhere; however, at the University of Copenhagen, their slide projectors wouldn't accept the slides! Also, Fleming and I saved two young women from drowning off the Danish coast;
- Prof. Alina Samotus of Jagellonian University in Krakow, with whom I had joint researchers, and who introduced me to...
- Prof. Horst Hennig, who was managing a large photochemistry research program and was also Chancellor of the University of Leipzig. (Whereas Horst came to Amherst, the East German government wouldn't allow his wife to accompany him.)

Subsequent trips between our institutions brought many other unexpected adventures as well as invitations to a large number of other coordination symposia including several at a beautiful castle in Smolenice, a conference center for the Slovak Academy of Science.

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