**CHICAGO SECTION AMERICAN CHEMICAL SOCIETY**

**Public Affairs Award Meeting**

**FRIDAY, MARCH 18, 2005**

**Café La Cave**
2777 Mannheim Road
Des Plaines, IL
847-847-7817

**DIRECTIONS TO THE MEETING**

From 290 East/West — Take 290 from either direction and exit 294 North. Continue until you reach the exit for 190 West (to O'Hare). Exit and immediately pay toll. Exit Mannheim Road North. Go North for 1.5 miles. The restaurant is on the right side after the second stoplight.

From 90 East/West — Take 90 from either direction and exit 190 West (to O'Hare). Then follow 290 East/West directions given above.

From 294 North/South — Take 294 from either direction and exit 190 West (to O'Hare). Then follow 290 East/West directions given above.

From 88 East — Take 88 East to 294 North. Take 294 and exit 190 West (to O'Hare). Then follow the directions for 290 East/West given above.

**PARKING:** Go directly to parking lot for self-parking. Valet parking also available.

**WCC PANEL DISCUSSION:** 5:00 - 6:00 P.M.
A panel of distinguished women chemists will answer questions on their careers as chemists. The women who will be part of this discussion include Alanah Fitch (Loyola), Gretchen Shearer (McCrone), and Marion Thurnauer (Argonne).

See page 9 for more details.

**JOB CLUB** 5:15 - 6:15 P.M.

**SOCIAL HOUR** 6:00-7:00 P.M.
Complimentary Hors D’oeuvres served butter style. Cash Bar

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**DINNER** 7:00 P.M.

**Menu:**
- Cream of Tomato Soup with Spinach and Pasta; Squillo Salad with Walnuts and Cranberries; Choice of either a Breast of Chicken Combination (Sautéed Breast of Chicken with fresh mushrooms & shallots with a Sherry Cream Sauce and Sautéed Breast of Chicken with Shiitake mushrooms with a Marsala Wine Sauce), Seared Salmon with a Ginger Sauce, or Fresh Vegetables with Pasta; Anna Potatoes; medley of fresh vegetables; Chocolate cake with Raspberry Sauce; a variety of breads; beverage.

Dinner reservations are required and should be received in the Section Office via phone (847-647-8405), fax (847-647-8364), email (chicagoacs@ameritech.net), or online (http://chicagoacs.org) by noon on Tuesday, March 15. The dinner cost is $30 to Section members who have paid their local section dues, members’ families, and visiting ACS members. The cost to non-Section members is $32. The cost to students and unemployed members is $15. Seating will be available for those who wish to attend the meeting without dinner. PLEASE HONOR YOUR RESERVATIONS. The Section must pay for all dinner orders. PLEASE HONOR YOUR RESERVATIONS.

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**NOTICE TO ILLINOIS TEACHERS**

The Chicago Section-ACS is an ISBE provider for professional development units for Illinois teachers. Teachers who register for this month’s meeting will have the opportunity to earn up to 4 CPDU’s.

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**PUBLIC AFFAIRS AWARD**

**ADDRESS** 8:00 P.M.

**PUBLIC AFFAIRS AWARDEE:** Dr. Thomas Kucera

**Title:** “The Shifting Paradigm of the Central Science”

**Abstract:** Since the end of WWII, there has been an ever-increasing understanding of the role of chemistry in American life. This has led to greater involvement of ACS as a society as well as individual ACS members with the American body politic. Increased awareness of the importance of chemistry to many public and private problems has led to changes in emphasis in the organization of the ACS and in the attitudes of the public. The areas of particular interest and their impact on laws and regulation as well as on the ACS divisions and local sections will be explored.

The Awardee: Tom Kucera certainly does not need any kind of introduction to most of us, given the fact that he has been involved in the affairs and busi-
ness of the section and the society for more than fifty years. But as this year's Public Affairs Awardee he deserves an appropriate introduction such as we traditionally give for those who have received this award since it was first given more than twenty years ago. When I began my activities with the section, Tom was already a veteran, having already served on many committees as well as editor of the Chemical Bulletin. In 1986, the Chicago Section was one of a half-dozen sections that were invited to participate in and serve as a pilot for a new program called "Chemistry Day." Working with the late Lou Sacco, who served as the initial chair, Tom was a major force in organizing the first Chemistry Day Activity at the Museum of Science and Industry. After the successful pilot program, the program eventually became "Chemistry Week," with involvement by nearly all sections of the American Chemical Society.

When Lou passed away several years later, Tom became Chair of the Section's Chemistry Day/Week Committee, and has led the effort since. It this continuous and diligent effort in bringing chemical science to the public through National Chemistry Week that the Section is recognizing in conferring this award.

Of course, there are so many other important activities that Tom has carried out for the section. Tom is above all else, extremely, modest, does not want to be lauded for all the good work he does for the section, the society, and the community, but when we honor him we are, in a very real sense, doing it for ourselves. We need to do this to show that we are not unappreciative when one is so generous and gives so much of himself. So, Tom, thanks very much, for being such an inspiration to all of us; for so long. With permission of our editor, I am going to list several participants have received outreach help with resume preparation and marketing strategies to present their best attributes to prospective employers. The group actually critiqued some individual resumes and made suggestions for improvements in a positive way!

The Job Club is also for employers seeking chemists. Employers need to be prepared to describe the positions to be filled and requirements for these positions.

Should you wish to attend the Section meeting following the Job Club, the cost for unemployed members is $15 and you can continue your networking activities. Please call the Section office for reservations and indicate that you are eligible for a discount. Also, the Chicago Section's website has a link to the Job Club's yahoo job forum group. So when you can't get to the Job Club, you can still find out about job openings and other information.

FREE T-SHIRTS

The Hospitality Committee raffles one T-shirt at each monthly dinner meeting. The shirt has Chicago spelled out using the periodic table. So come to a monthly meeting and maybe you'll win one! Congratulations to T-shirt winner Val Notermann (January meeting).
**CHEM SHORTS** For Kids

The Elementary Education Committee of the Chicago Section ACS presents this column. They hope that it will reach young children and help increase science literacy. Please cut it out and pass it on to your children, grandchildren, or elementary school teachers. It is hoped that teachers will try to incorporate some of the projects in this column into their lesson plans.

**Bath Bubblers**

Kids, “bath bubblers” or “bath bombs” are fancy bath bars that can be found at bath & body stores. But even better, they are easy to make with materials found in the home. A chemical reaction occurs when a bath bubbler comes in contact with water which involves citric acid (H₃C₆H₅O₇, a weak acid) and baking soda (NaHCO₃, a weak base).

You will need baking soda, cornstarch (C₆H₁₂O₅), citric acid, Epsom salts (MgSO₄ 7H₂O), sweet almond oil, witch hazel, a fragrance oil, food coloring, molds (three small plastic Easter eggs, small muffin tins or ice cube trays), aluminum foil, plastic wrap, and rubber gloves. Measure these dry ingredients into a large bowl: 1/2 cup baking soda, 1/4 cup cornstarch, 1/4 cup citric acid, and 2-1/2 Tbsp Epsom salts. Grind the lumps out with a large plastic spoon and mix well. Measure and combine these liquid ingredients into a small cup: 4 tsp almond oil, 3/8 tsp witch hazel, 1/8 tsp of fragrance oil, and 1 drop of food coloring. Seal plastic wrap over the cup. While holding the wrap in place over the top of the cup, swirl the ingredients to mix them well.

The next step is for an adult partner. While stirring constantly with gloved hands, have them slowly add the liquid mixture to the dry mixture in the bowl. (If too much liquid hits the dry ingredients a reaction will start, so go slowly; using witch hazel instead of water helps). Mix in all of the liquid. The mixture should be crumbly (like damp sand). Now you can pack the damp mixture into molds. Press firmly. Work quickly so that it does not dry out completely. (When using egg molds, pack each side and then add some loose mixture to one half and firmly push the halves together. Do not twist, and the halves do not need to fit together perfectly). Let the molds rest undisturbed for 48 hours. Unmold the bubblers onto aluminum foil, tapping gently against the tabletop. Without twisting, unmold one side at a time.

Try two bubblers by placing one in a container of hot water and another in cold water. Record your observations about the fizzing. Can you guess what gas is causing the bubbles in this reaction? Store the rest of the bubblers for yourself in a sealed container (most plastic wraps will let humidity in).

Why is water needed to start the reaction? Water dissolves the solids and enables the ions to move, collide, and produce a reaction in solution. The reaction is citric acid with baking soda to produce carbon dioxide. Carbon dioxide fizzes and the bubbler releases the fragrant oils into the bath water as it whirls and spins. How does the water temperature affect the action? Bath bubblers will spin and fizz in water. The rate of bubbling increases with an increase in water temperature. Why could humidity lead to problems? If high enough, humidity can provide enough moisture to dissolve the solids and start the bubbler reaction.

**Notes:** Sweet almond oil and citric acid can be found in natural food stores; fragrance oils are in craft stores that sell soapmaking supplies. Soap molds from craft stores can be used for fancier shapes. Do not substitute ascorbic acid for citric acid because it yellows and freckles the bar.

EDITED BY K. A. CARRADO, ARGONNE NATIONAL LABORATORY

**References:** Journal of Chemical Education, 2003, 80(12), 1416A by Mary E. Harris and Barbara Walker; Brenda Sharpe at http://www.ncf.carleton.ca/~aj471/BathBombs.html

All past “ChemShorts”: http://membership.acs.org/C/Chicago/ChmShort kiddindex.html

**“AIR - HERE, THERE, EVERYWHERE”**

Chemists Celebrate Earth Day is an environmental awareness campaign. The event provides activities that are designed to enhance public awareness of important contributions made through chemistry in preserving our planet and improving our environment. The event is held annually on April 22. For more information visit chemistry.org/earthday.


**CONTACT THE CHAIR**

Do you have any questions, suggestions, recommendations, ideas, gripes, complaints, or pet peeves relating to the Chicago Section? Do you want to volunteer, help out, or lend a hand with Section programs or activities? Then contact your Chair. Simply log onto the Section’s Web Page at http://chicagoacs.org, find the green button “Contact the Chair”, and send me an e-mail. If I can answer your query I will respond personally. If I can’t I will forward your e-mail to someone who can, or try to provide you with a contact -- all in a timely manner. The Section belongs to you and the other 5,100 ACS members who reside in the Chicago area (northeast Illinois and northwest Indiana). Only you can make it work for you by being involved. But you can also make it fall by not being involved. I look forward to hearing from you.

RUSS JOHNSON
Chicago Section Chair

**STAY IN TOUCH WITH THE EDUCATION DIVISION**

ChemunityNews is a bimonthly electronic newsletter that connects chemistry educators to the activities of the ACS Education Division. It provides updates on newly published resources and materials, programs for students and educators, and upcoming workshops and meetings. You may view a recent issue by visiting the ChemunityNews Archives at chemistry.org. To subscribe, simply email education@acs.org.
The Public Affairs Award was established by the Public Affairs Committee of the Chicago Section of the ACS in 1982. The award was established to recognize individuals who were involved in science and public policy issues. During the years 1983-1987, the award was given annually. Beginning in 1989, the award was presented biannually.

The award is made on the basis of outstanding activities that have advanced the public’s understanding of chemistry and the chemist’s concern for the effects of chemistry on public affairs. Examples of such activities include:

1. Publication of books, monographs or a series of research papers;
2. Distinction in teaching in the area of chemistry in the public interest;
3. Public advocacy of an effective or distinguished nature;
4. Distinguished administration and organization of chemistry and public affairs activities; and
5. Significant accomplishments over a long period of time, resulting in the advancement of the area of chemistry and public affairs.

The awardee need not be a chemist or a member of the ACS, but should have been a resident of the EPA Region V during the time period for which he/she is being recognized. Region V contains the states Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin.

Past recipients of the Public Affairs Award are listed below, along with their achievements:

1983 Dr. Carl Moore
Professor of Chemistry, Head of Department of Chemistry, Loyola Univ.; For outstanding public service, as an advisor to local governments in science and public policy.

1984 Dr. Ananda Chakrabarty
Research Scientist, General Electric Inc., Professor of Biochemistry, Univ. of Illinois. For obtaining the first patent for a living organism, as a bacterium for use in pollution control.

1985 Mr. Valdas Adamkus
Regional Administrator, Region V EPA; For outstanding administration of the regional office, and for standing strong against attempts to weaken pollution control regulations and politicize the office. Mr. Adamkus returned to his native Lithuania as president two years ago.

1986 Dr. James Shoffner
Senior Research Chemist, Allied Signal-UOP, presently Adjunct Professor of Science in Columbia College Science Institute; For pioneering work in establishing the Public Affairs Committee, and working with state, local and regional governments on science and public policy issues.

1987 Dr. Etcyl Blair
Consultant, Industry-Government Relations, Retired Vice President Health and Environmental Sciences, Dow Inc. For outstanding work in devising corporate compliance policies, and for managing analytical methodologies to provide effective pollution control.

1989 Dr. William Beranek
Advisor to Governor of Indiana, Head of Indiana environmental consulting firm. For work done in risk-benefit analysis and environmental improvement strategies championed nationally.

1991 Dr. Leon Lederman
Nobel Laureate in Physics, Director Emeritus, Fermilab, Professor of Physics, Univ. of Chicago, Illinois Institute of Technology. For speaking for science nationally and internationally, championing science funding and for being a leader in science education.

1993 Dr. Walter McCrone
President and Founder, McCrone Institute, Internationally known chemical microscopist, exposed Shroud of Turin and Vinland Map as forgeries. For world class work on fiber and particle identification, especially asbestos fibers, and for socially relevant contributions as President of the Board of Ada S. McKinley Community Services, one of Chicago’s leading social agencies.

1995 Dr. Walter E. Massey
President, Morehouse College, former VP Research, Univ. of Chicago, Director, Argonne Lab, VP Academic Affairs, Univ. of California. For public service on federal, local and state boards and commissions, speaking and writing on science and public policy, and for leading efforts to maintain the viability of Argonne Lab.

1997 Dr. Zafra Lerman
Head of Science Institute, Columbia College; For outstanding contributions in the areas of human rights and science education. Since receiving this award, she has received numerous other awards, most recently the Jose’ Vanconcelos Award for Education, presented at the U. of Witwatersrand, S.A, in November 2001.

1999 Mr. Bill Kurtis
Host for award winning documentaries on A & E Network; For using the medium of television to educate schoolchildren and enlighten the general public regarding the role that science and technology continue to play in shaping our civilization.

2001 The Hon. Harris Fawell
Congressman Fawell served 7 terms in congress, and retired in 1998. For representing the researchers and scientists in his district while in Congress. He served on the Committee on Science, Subcommittee on Energy, as well as the Committee on Education and the Workforce, Subcommittee on Employer - Employee Relations (Chair), and Subcommittee on Workforce Protection Oversight. He appeared as a speaker on a symposium at the ACS National Meeting in Chicago in 1985. He utilized members in his district to advise him on science and public policy issues.

2003 Dr. Inara Brubaker
For pioneering the development of programs and activities that established the agenda for a decade of state and local section cooperation on a wide range of public policy issues; for setting the performance standard for the ACS Congressional Fellowship by her significant achievements during her fellowship year of 1977; and for serving her community in various ways.
DEATH NOTICE

Longtime Chicago Section member, Fran Seabright, died January 27. Fran received a M.S. in Chemistry and had been an instructor at U of I Chicago and a part-time travel agent for many years. She had been active in her church and had also been a member of Iota Sigma Pi. She lived in Elmhurst for many years and is survived by a son and grandson.

Though she was 92, Fran continued to attend our dinner meetings. Her cheerful disposition will be missed.

CONTINUING EDUCATION COMMITTEE

The Chicago Section has available for loan to section members the following books:


Teaching Chemistry to Students with Disabilities: A Manual for High Schools, Colleges, and Graduate Programs, 4th Ed., ACS Publications (2 copies)


To borrow any of these books, please call the section office at 847-847-8405.

FRED TURNER
CONTINUING EDUCATION CHAIR

SECTION'S A/V TAPE LIBRARY

A list of audio and video tapes that are available for loan to members of the Chicago Section is available in the March 2002 issue of the Chemical Bulletin and also at our section's web site www.ChicagoAcs.org.

The Continuing Education Committee requests suggestions for tapes and/or books that could be added to our collection. Please forward any requests to the section office, 847-847-8405, by e-mail at chicago@ameritech.net, or to Fred Turner, ftturner@roosevelt.edu.

DONATION POP TOP RINGS

Save the environment and help the Ronald McDonald House at the same time. The Chicago Section American Chemical Society collects pop top rings, those little rings on top of your soda can. The section has a goal of collecting one million pop top rings by the end of December.

Just a little trivia, one million pop top rings weigh 790 pounds.

What will we do with all those pop top rings? They will be taken to a collection site near Loyola University Medical Center and the money from the aluminum will be donated directly into the operating costs of the Ronald McDonald House. Ronald McDonald House provides a temporary "home away from home" for families of seriously ill or injured children who are in the hospital.

So, please help the cause by bringing your pop top rings to a monthly section dinner meeting and putting them in the jar at the registration desk.

LETTERS TO THE EDITOR

"Apathy in the Chicago Section", December 2004 issue, p. 5

Dear Fran:

I fall into the category you describe as an apathetic Chicago ACS member (poor excuse for a "professional chemist"). From the 1980's until recently I have worked in the Chicago area as a chemist. Most of my years were spent working downtown where I took public transportation (Metra). I did not have the funds or transportation to make it to many meetings. I found it hard to network (for me) with people I did not know as I could attend so infrequently. Couple this with a wife that worked in Joliet (as a chemist), the logistics were just too much.

Since I did not attend, did not know (both my shortcomings) I found it impossible to vote for people I never met, yet I found no problems voting for Presidential candidates that were even far more removed than the local ACS.

Now I find my self being even farther removed from the ACS as I am in the process of moving to Dubuque, IA. I have taken a position with Barnstead International (high purity water system) as their Sr. Product Development Chemist. I have switched my affiliation to the "local section" there, but I am as clueless as a freshman at NIU looking for Revis West (now DuSable Hall).

For me it seemed to be about logistics, Fridays (when I could make the meetings) always seemed to be the most logical to me. I guess I have succumbed to the new generation and have become too me-centered. Maybe it's time to seriously re-evaluate my life and involvement in the ACS.

CAL CHANY

Dear Mr. Chany:

First of all thank you for responding to my article. I am sorry you fall into the category of an apathetic Chicago Section member. The Chicago Section has always made sure to find one way or another to get a member to a meeting; whether it be getting them a ride or finding a way to get them a reduced dinner. I am sorry you never took advantage of our hospitality. I hope that you will take advantage of your new section's hospitality. I have always found the networking to be a benefit in my career. Good luck in your new section.

FRAN KRAVITZ

The Chicago Section's e-mail address is chicagoacs@ameritech.net

REGISTER TO ATTEND MONTHLY SECTION MEETINGS ON LINE at www.ChicagoACS.org

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ANALYSIS FOR THE CHEMICAL ELEMENTS

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SCIENCE HISTORY TOUR 2005

We intend to continue the journey from where we finished last year's trip, so will explore some more of eastern Germany, then continue into the Czech Republic and Prague, and end the trip in Vienna. Our theme this time will be "Science Behind the Iron [Fe] Curtain". We will all meet in Leipzig to start the trip on June 22, 2005, and will begin with a welcome lunch. The tour will end in Vienna after breakfast on July 6.

Tour members frequently choose to arrive at the starting point a few days early, or else to stay on for a few days after the trip ends. Yvonne can give you advice on this, as she can often help with ideas or hotel suggestions.

The itinerary includes Dresden and the marvelous collection of the Zwinger museums. Dresden is also of great interest for its architecture - wonderfully restored after almost complete destruction in WWII. A visit to the fabulous Meissen factory will enable you to see early examples produced in Europe’s first porcelain factory and also to see present day Meissen porcelain being manufactured. The composition of porcelain was a secret, manufacture being a monopoly in the Orient, until the secret was re-discovered by an alchemist in the employ of Augustus the Strong of Saxony. Other visits will take place in the Saxony region (whose wealth was based on silver-mining) where there are lovely castles and gardens and small towns that most tourists have not yet found. There are also a number of very old collections of scientific interest, just emerging from obscurity.

We will then travel throughout the length of the Czech Republic exploring its wealth of science history. Prague, with its connections with Tycho Brahe and Kepler, and Brno, the place where Mendel founded the science of genetics, will be two of the places we will stay. Visits to the other towns now coming to life after years under Communist domination, but as yet largely undiscovered by tourists, will be a delight.

The tour will end with a couple of days in Vienna, a lovely city with connections to many scientists and famous Naturalischeshistorisches Museum.

Walking tours of many cities, lectures from local experts and visits to the homes of scientists will be included in the tour. Those who wish can explore the cultural offerings of the cities of Dresden and Prague and Vienna, where concerts and operas abound. Along the way we will take a short cruise of the Elbe from Dresden to the Castle at Pillnitz.

Evidence of the stultifying and in some cases perverse influence of the Soviet regime on science will be found in many places and will provide a strong contrast to the degree of scientific freedom seen in the United States.

Accommodation will be in comfortable welcoming hotels where all rooms have private bathrooms. Room-sharing arrangements can be coordinated for those persons who are traveling alone, but would like to share a room to save single room supplements. We will travel either by luxury coach that will stay with us while we are touring, or sometimes by train. Inexperienced international travelers will be given as much help as they need. Those traveling alone will find a warm welcome from this congenial and interesting group where it is easy to make friends.

During the tour all land transportation, hotels and breakfasts, at least (or average) one other meal per day - often with a glass of wine, all admissions to museums, lecture fees, and taxes are included. Your additional expenditure will be for the few meals when the group does not eat together, incidentals such as theater or concert tickets, and personal expenditures.

TRANSATLANTIC AIRFARE IS NOT INCLUDED.

The cost of the 2005 tour will be $2975 per person, double occupancy. We regret the necessity to increase the price over last year's, but the large decline in the value of the dollar makes this inevitable. You will find that you receive excellent value for money. Graduate credit is available. CPDUs are also available for teachers.

For further information and/or to be put on the mailing list, contact either:

Yvonne Twomey, 841 Kinston Court, Naperville, IL 60540, 630-961-9811, ytrowemy@mindspring.com; or Lee Marek, 630-420-7516, Lmerek@aol.com

See the following web page presentations on our past trips and more info on this year’s trip: http://www.chem.uc.edu/marek/

LLEE MAREK

The mission of the Chicago Section of the ACS is to encourage the advancement of chemical sciences and their practitioners.

CHEMAGINATION

Chemagination is a creative innovation and writing contest for high school science students. In the contest, students are asked to imagine that they are living 25 years in the future and have been invited to write an article for ChemMatters, a magazine for high school students that focuses on the role of chemistry in everyday life. The subject of the article is: "Describe a recent breakthrough or innovation in chemistry (and/or its applications) and how it has improved the quality of people’s lives today." In addition to the article, students are asked to design a cover for the magazine.

Finalists are named at three levels: local, regional and national. For more information visit chemistry.org/chemagination.

For advice on these or other community activity programs available through ACS, contact the Office of Community Activities at 800-227-5558 x 6097 or 202-872-6097.

DEADLINES FOR CHEMICAL BULLETIN

Please submit all Chemical Bulletin copy to the editor before the deadlines listed below for each issue. Articles can be emailed to the editor, Cheryl Bradley, cbrad1027@aol.com.

Since we like the Bulletin to be as timely as possible, we need the lead time indicated. You can help by early planning and submission of your information or articles.

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LABORATORY SAFETY INSTITUTE

The LSI Speakers Bureau will provide free speakers to schools, colleges, universities, and other not-for profit organizations. Presentations of up to one-hour will be available on a wide-range of laboratory health and safety topics.

To request information about (1) becoming an LSI Speakers Bureau Presenter, (2) available presentations, and/or (3) scheduling a free presentation, contact Shannon Capen, LSI Speakers Bureau Coordinator, scapen@labsafety.org, 508-647-1900 (Monday thru Thursday, 9AM to 3PM).

The Laboratory Safety Institute is a nonprofit international organization for safety in science and science education. Go to website www.labsafety.org
"LINUS PAULING AND THE NATURE OF THE CHEMICAL BOND: A DOCUMENTARY HISTORY"

The story of one of the most important discoveries in modern science — and the basis for the most-cited scientific publication of the twentieth century — is given fresh life in a vast new website launched by the Oregon State University Libraries. "Linus Pauling and the Nature of the Chemical Bond: A Documentary History", featuring a trove of over 800 documents, is available at
http://osulibrary.oregonstate.edu/specialcollections/coll/pauling/bond/index.html

December 10, 2004 marked the fiftieth anniversary of Linus Pauling's receipt of the Nobel Prize for Chemistry. The prize was awarded to Pauling (1901-1994) for "research into the nature of the chemical bond and its application to the elucidation of complex substances."

The impact of the research that led to these accolades is difficult to overstate. By applying the new quantum physics to the study of structural chemistry, Pauling revolutionized the science world's understanding of how atoms join together to form molecules. Pauling's work is, today, the foundation of contemporary structural chemistry. Indeed, Pauling's 1939 book, The Nature of the Chemical Bond has gone down in history as the most frequently-cited scientific publication of the twentieth century.

More than 800 digitized letters, manuscripts, photographs, audio-clips and video excerpts - most of them never before available outside of archives - form the heart of the Chemical Bond website. They include a number of important and unique items, such as:
- The complete manuscript of Pauling's germinal first paper on the nature of the chemical bond, written in April 1931.
- Hundreds of additional pages of manuscripts and notes written by Pauling as he expanded and fine-tuned his theories of structural chemistry throughout the 1930s.
- Pauling's extensive correspondence with many of the major chemists of the era including G.N. Lewis, A.A. Noyes and Irving Langmuir.

The original documents are tied together with a narrative describing the details of Pauling's discoveries, and are amplified by a "Day-by-Day" calendar, which notes all of Pauling's personal and professional activities throughout the 1930s as well as his Nobel year of 1954.

For further information, contact Clifford S. Mead, Head of Special Collections, Valley Library 121, Oregon State University at 541-737-2083 or go to
http://osulibrary.oregonstate.edu/specialcollections/

Submitted by PETER LYKOS

IIT RESEARCH CAPABILITIES: AN INVITATION TO BUSINESS

As a private research university, Illinois Institute of Technology (IIT) seeks companies interested in collaborating on research projects around its core programs: engineering, science, psychology, architecture, business, design and law.

Resources and opportunities include:
- Faculty and Senior Staff Research Database — Provided by the Graduate College, the database contains a profile about each researcher's interests and areas of expertise. Search by topic and/or researcher name. The database has more than 1,000 keywords on topics ranging from acoustics to X-ray photoelectron spectroscopy.

http://gradweb.iit.edu/gradresearch/searchengine.htm

Research Centers — Twenty research centers include the IIT Research Institute Life Sciences and the National Center for Food Safety and Technology. Other research center topics include: Particle Physics, Complex Systems, Polymer Science, Synchrotron Radiation, Fluid Dynamics, Power Electronics, and Crystalization.

To work with an IIT Research Center, contact the center director noted on the web page www.grad.iit.edu/research/IITResearchCenters.html

In one example of IIT-corporate collaboration, IIT provided a mid-size battery manufacturer with electrical engineering and chemical engineering expertise for a short-term project in the area of mathematical modeling of batteries. In addition to receiving a completed project, the company also hired two IIT graduates. IIT also partners with companies to sponsor projects where interdisciplinary teams of students work on a sponsor's topic. Go to
http://ipro.iit.edu

IIT has a wide range of research expertise and several ways of partnering with companies to help them achieve their goals. Contact Bob Anderson, Director, Intellectual Property & Technology Transfer, Anderson@iit.edu, 312-567-3462; or Ruth Sweetser, Director, Professional Learning & Business Relations, sweetser@iit.edu, 630-562-6020.

AICHE SYMPOSIUM

The Chicago Section of the American Institute of Chemical Engineers will have a symposium "Chemical Engineering: At the Cross Roads of Technology" April 19-20 at the Illinois Institute of Technology, Herman Union Building, Campus & Conference Center Ball Room, Chicago. The symposium is cosponsored by IIT's Department of Chemical and Environmental Engineering. Features include sessions on sustainable engineering, including fuel cells; a nanotechnology short course; biomedical and biochemical biotechnology; and AIChE Chicago Section's Annual Student Poster Competition and Awards. More information is at www.aiche-chicago.org.

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"THE JOY OF TOYS" — NCW

National Chemistry Week (NCW), a community-based outreach program, is designed to reach the public with positive messages about chemistry and to make a positive change in the public's impression of chemistry. Activities include chemical demonstrations, hands-on activities, lectures, open houses, displays, contests and games. NCW is celebrated annually from Sunday through Saturday during the fourth week of October. This year, NCW is October 16-22. For more information visit chemistry.org/ncw.
Members of the Chicago Section’s Women Chemists Committee (WCC) are developing outreach plans for Chicago Area section members and the community. These plans include a column in the Chicago Bulletin covering topics such as networking, career development, and vignettes of women in chemistry. This month’s topic is about Lin X. Chen, Chemistry Division of Argonne National Laboratory, as told by Kathleen Carrado.

Dr. Lin X. Chen and I have worked in the same corridor for more than 15 years. While not in the same research group, we are well aware of each other’s projects and have even co-organized a symposium at Argonne together (on in situ methods). Her research is fascinating and her work ethic indomitable. We took the excuse of this article to have an extended conversation about Lin’s current research interests, what led her to science as a career, and what drives her now.

Dr. Lin Chen’s scientific career ranges from peptide synthesis to laser and x-ray physics, from bacterial photosynthetic reaction center proteins to semiconductor nanoparticles. Lin recognizes that many recent scientific breakthroughs rely on interdisciplinary research and she is known for her diverse scientific interests and capabilities. Her pioneering research on the time-domain combined laser and x-ray pulses method has established an entirely new approach for excited molecular structure determination. Although x-rays have been used for static molecular structure determination for almost a century, their potential to capture short-lived transient molecular structures remained untapped until recently. Dr. Chen has been leading a research project that successfully determined structures of short-lived molecular intermediates in solution after photodissociation using light pulses from a laser with simultaneous x-ray pulses from the Advanced Photon Source at Argonne. This research requires knowledge of organometallic compound synthesis, the photochemistry of organic molecules, laser optics, and synchrotron x-ray methods.

Featured in a Science article recently, Lin’s work determined the structure of a photodissociated metalloporphyrin in solution with nanosecond time resolution. This particular molecule is an analog of the heme functional group that carries oxygen in myoglobin and hemoglobin, which relates to oxygen transport in blood. She also captured another transient molecular structure with a copper center that undergoes photoinduced electron transfer, resulting in a short-lived intermediate with a distinctly different structure from the ground state molecule. Probing these transient molecular structures has significant impact towards understanding the mechanisms of molecular interaction with light. These are essential processes in photosynthesis, molecular devices, and solar energy conversion and storage. A thorough review of Lin’s work can be found in a 2004 issue of Angewandte Chemie, in which the abstract ends with this tantalizing statement, “By using other ultrafast x-ray facilities that will be completed in the near future, time resolution for excited-state structure measurements should reach femtosecond timescales, which will make “molecular movies” of bond breaking or formation a reality”.

Dr. Chen obtained her B.S. in chemistry from Peking University and then came to the U.S. to pursue her graduate education. Lin joined the University of Chicago Chemistry Department where she received her Ph.D. in 1987 in Physical Chemistry under the guidance of Prof. Graham R. Fleming. Her thesis projects involved protein dynamics using ultrafast laser spectroscopy and molecular modeling. Lin was awarded a prestigious NATO fellowship during that time. After this, Lin went on to perform postdoctoral research in the Department of Chemistry at the University of California at Berkeley with Prof. Herbert Strauss and Dr. Robert Snyder. There her work involved molecular dynamics of long chain alkanes and peptides using vibrational spectroscopy. Since 1989, she has worked in the Photosynthesis Group in the Chemistry Division of Argonne National Laboratory.

Lin attributes her love of scientific research to her upbringing and deeply appreciates the support from her family and mentors. As the daughter of two organic chemists, Lin was inevitably exposed to scientific research from an early age. Although her parents never tried to make her a chemist, she was fascinated by the glassware and colorful solutions in her father’s laboratory, and played with a wooden CPK molecular model set at home as a child. She thought the clusters of hexagons representing fused aromatic rings in her father’s notebooks were beautiful tortoise shells. Later in her graduate career, she considered herself very fortunate to have Prof. Fleming (now at UC Berkeley), one of the pioneers in ultrafast molecular dynamics, as her advisor. He is not only a world-class scientist, but also an extremely effective mentor to his students. Lin found his research group to be a place where people with different backgrounds and strengths were able to flourish in their own way. This positive experience in graduate school encouraged her to pursue a career in fundamental research. Dr. Chen is married to another chemist, Dr. Di-Jia Liu, whom she met in Peking University. Their family includes daughter Victoria who was born in 1986 while Dr. Chen was a graduate student.

As a result of her experiences, Dr. Chen believes that many scientific accomplishments result from dedication and an innate thirst for knowledge. The multidisciplinarity of Lin’s research exemplifies the way she thinks and approaches her work. As she learns more about the natural world through her research, Lin becomes ever more captivated by the way that sophisticated and beautiful molecules are organized in nature. One of her favorite quotes is from K. Hokusai, a famous Japanese painter: “All I have produced before the age of seventy is not worth taking into account. At seventy-five I have learned a little about the real structure of nature—of animals, plants, and trees, birds, fishes, and insects. In consequence, when I am eighty, I shall have made still more progress. At ninety I shall penetrate the mystery of things; at a hundred I shall certainly have reached a marvelous stage, and when I am a hundred and ten, everything I do-- - be it but a line or a dot-- - will be alive”.

DR. KATHLEEN A. CARRADO

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WOMEN CHEMISTS
COMMITTEE PANEL
DISCUSSION

Have you had some questions/concerns about how successful you can be as a woman chemist? Are there some special concerns that women chemists have that their male counterparts don't have to think about? We have assembled a panel of distinguished women chemists to answer questions on their careers as chemists. The women who will be part of this discussion are Alana Fitch (Loyola), Gretchen Shearer (McCrone) and Marion Thurnauer (Argonne). A brief biographical sketch of each woman is provided below.

The panel discussion will be from 5:00PM — 6:00 PM, but there will be time for discussion with the panelists before the dinner at 7:00 PM.

Alana Fitch received a B.A. in Cultural Anthropology/Latin American Studies in 1975 from Antioch College, Ohio, a M.S. in Soil Fertility in 1977 from the University of Arizona to Soil Chemistry and a Ph.D. in Soil Chemistry from the University of Illinois Champaign Urbana in 1981. Her chemistry experiences inspired her into a career in chemistry starting with postdoctoral appointments at the University of Iowa and the University of Chicago. She joined McCrone Associates in 1995. She is a Senior Research Chemist and is responsible for performing chemical analysis using infrared spectroscopy, Raman microspectroscopy, gas and liquid chromatography, polarized light microscopy and microchemical techniques. She has problem solving experience in a wide variety of industries including pharmaceutical, paints and coatings, electronics, forensics, polymers and metals. She has been particularly interested in the identification of foreign matter in pharmaceutical products, evaluation of surface defects and adhesion failures in coatings and the application of spectroscopic techniques to the study of art and archaeological samples. In addition to her consulting work, she is an instructor for the McCrone College of Microscopy and is a contributor to the McCrone's on-line Atlas of Small Particles which is due to be released in April 2005.

Marion C. Thurnauer received a Ph.D. (1974) in Chemistry from the University of Chicago. She has served as Group Leader of the Photosynthesis Research Group, Director of the Chemistry Division, and Argonne Women in Science Program Initiator. Her research involves studies of sequential electron transfer in natural photosynthetic systems of photosynthetic bacteria and green plants and model photosynthetic systems. Recently she has been interested in applying epr to study these processes in surface modified nanocrystalline metal oxide colloids to mimic the energy transduction of natural photosynthesis. She was awarded the 2002 Francis P. Garvan-John M. Olin Medal by the American Chemical Society. Other honors include: the University of Chicago Award for Distinguished Performance at Argonne in 1991; the Agnes Fay Morgan Research Award in 1987; elected as a Fellow of the American Association for the Advancement of Science in 1998; the Argonne Director’s Award in 1990 for extraordinary effort in organizing the Science Careers in Search of Women Conference. Her professional activities include: Member, Editorial Board of Biophysical Journal (2000-2003); Member and Vice Chair, National Research Council and Chemical Sciences Roundtable (1998-2001). She was instrumental in initiating the Annual Science Career Conference for young women and was one of the founders of the Women in Science and Technology Program at Argonne National Laboratory. She has served on several role model panels for Women in Science.

Gretchen L. Shearer received a B.A. in Chemistry from the College of Wooster (Ohio) and a Ph.D. in archaeology from the University of London. Her doctoral research topic was the application of Fourier transform infrared spectroscopy to art and archaeological samples. She was an L.W. Frohlich Research Fellow at the Metropolitan Museum of Art where she studied reactions of alkoxysilane based stone consolidants. After further postdoctoral appointments at the University of Iowa and the University of Chicago, she joined McCrone Associates in 1995. She is a Senior Research Chemist and is responsible for performing chemical analysis using infrared spectroscopy, Raman microspectroscopy, gas and liquid chromatography, polarized light microscopy and microchemical techniques. She has problem solving experience in a wide variety of industries including pharmaceutical, paints and coatings, electronics, forensics, polymers and metals. She has been particularly interested in the identification of foreign matter in pharmaceutical products, evaluation of surface defects and adhesion failures in coatings and the application of spectroscopic techniques to the study of art and archaeological samples. In addition to her consulting work, she is an instructor for the McCrone College of Microscopy and is a contributor to the McCrone’s on-line Atlas of Small Particles which is due to be released in April 2005.

REGISTRATION IN FORM for
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UNIVERSITY OF CALIFORNIA, IRVINE CHEMIST WINS ACS TOP AWARD IN INORGANIC CHEMISTRY

For his many contributions to the chemistry of lanthanide elements, the American Chemical Society has awarded UC Irvine's William J. Evans its 2005 Award in Inorganic Chemistry. The annual award is the highest honor the ACS bestows in the field of inorganic chemistry.

Evans' research on lanthanides, metals once considered not worth studying because they do not form compounds easily, has made the elements a fertile subject of study in chemistry. Over the years, lanthanides found their way into daily life — for example, providing the red color on television screens.

The ACS award recognizes and encourages "fundamental research in the field of inorganic chemistry" and gives special consideration to "independence of thought and originality." The award, established in 1960, includes a $5,000 prize and a certificate. Evans will receive the award March 15, 2005, at the ACS National Meeting San Diego.

"I am deeply honored to receive the award," said Evans, professor of chemistry and the only UCI faculty member to win the ACS Award in Inorganic Chemistry. "It is a validation of the choice I made years ago to study lanthanides. I hope the award draws more research interest to these formerly undervalued metals. They remain under-explored compared to the other metals in the periodic table, and their potential for new chemistry and applications is yet to be fully realized. It is an honor also to join the list of chemists who received this award in past years."

Lanthanides, named after lanthanum, the first member of the series, are metals found in the ground as oxides. The physical properties of lanthanides lead to several applications in daily life. Cerium is an essential component in catalytic converters in automobiles. Gadolinium is used in magnetic resonance imaging (MRI) measurements.

The chemical properties of lanthanides, on the other hand, were ignored by chemists for many years. While the chemical properties of most elements arise from the action of their valence (or bonding) electrons, for a lanthanide metal, the valence electrons are buried in the interior of the atom. As a result, the metals do not form compounds easily and were thought to have uninteresting chemistry. Over the years, however, due in large part to Evans' work, the metals have been shown to exhibit unique reactivity.

Currently, Evans' laboratory is developing lanthanides for use in the preparation of pharmaceuticals, as catalysts for making natural rubber, and for use in hydrogen-based fuel cell recycling.

PROJECT BOOKSHARE

In 1984, the ACS launched an initiative to assist institutions that have a need for scientific publications. Project Bookshare, as the program has come to be known, is charged with collecting chemistry textbooks and back numbers of journals from donors and making these materials available to libraries in selected small U.S. colleges and to university libraries in mostly developing countries. Donated books and journals from Project Bookshare have reached across the United States (Alabama, Kentucky, Louisiana, Michigan, Montana, South Dakota, and Tennessee, among others) and around the world to help improve the educations of chemists and chemical engineers in Africa (Chad, Eritrea, Ethiopia, Ghana, Kenya, Niger, Nigeria, Sierra Leon, Sudan), Asia (China, Kazakhstan, Korea, Mongolia, Pakistan, Philippines, Sri Lanka, and Thailand), Europe (Albania, Armenia, Cyprus, Czech Republic, Estonia, Greece, Latvia, Lithuania, Macedonia, Poland, Romania, Russia, and Turkey), and Latin America (Argentina, Bolivia, Brazil, Chile, Costa Rica, Guatemala, Mexico, Panama, Paraguay, and Venezuela).

If you are interested in making a donation to Project Bookshare, you are asked to submit a list of publications to be donated to the ACS Office of International Activities, listing each book by title, author, and date, and journals and magazines by title and issue date. Books should be no more than ten years old, except for "classic" titles. Donors are asked to cover the costs of shipping to U.S. addresses. Whenever possible, Project Bookshare staff try to match donors and recipient institutions to save time, money, repacking, and excessive handling.

Project Bookshare is intended to bring U.S. chemists closer to colleagues in less advantaged situations worldwide. The generosity of ACS members, U.S. corporations, institutions of higher learning and others has made Project Bookshare a true national and international success. Send your list of publications to:
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Lab Safety Testing

Our laboratories typically have numerous safety programs or initiatives including monthly safety programs, CAP training, safety audits, etc. In addition to communicating this vital information to our staff, we also have a responsibility as managers to make certain that our staff understands the information that we communicate. This concept is very common in academia where understanding is measured through testing. Why don’t we use the same approach?

Whether viewing a video, reviewing safety rules, or receiving safety training, people will listen more intently if they know that they will be tested at the end of the program. Testing can enhance the learning experience, provide feedback to help improve future presentation of the material, and, if you use a bit of creativity, can actually be fun for the staff. Inject a little humor in your tests or use the tests as a competitive game to build staff acceptance.

At a past ALMA Conference, some of our members from Ashland Specialty Chemicals passed along an interesting safety idea. They reported an exercise where they went into the lab, blindfolded an analyst, and asked him to find the eyewash station. This practical demonstration turned into a real learning event that emphasized the importance of the safety equipment in the lab and awakened new safety awareness in the staff. Sharing experiences such as these is the reason for our conference and for our organization. Give this exercise a try in your lab and let me know how it works.

Past ALMA (Analytical Laboratory Managers Association) e-News editions are available at the website http://www.labmanagers.org/.

If you have any comments, cost saving suggestions, opinions, etc. let me hear from you.

WAYNE COLLINS
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SECTION SURVEY

Did you know that there is an ACS Chicago Section Survey available on our website? The Membership Committee invites you to fill out and send in the survey for the purpose of finding out your opinions and preferences on the monthly dinner meeting locations, meeting format, and topics. Go to http://ChicagoACS.org to fill out the survey.

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March 13-17, 2005: The 229th ACS National Meeting will be in San Diego, CA.

March 23, 2005: The Robert H. Lurie Comprehensive Cancer Center and Chemistry of Life Processes Institute at Northwestern University will co-sponsor the 2005 Basic Science Colloquium entitled, "Cancer at the Chemical Level: Strategies, Therapies and New Horizons." For further information, contact Sheryl Corey at s-corey@northwestern.edu or Kim McCumber at tvo-sec@chem.northwestern.edu.


April 10-14, 2005: The Spring 2005 American Institute of Chemical Engineers (AIChE) National Meeting will be at the Hyatt Regency, Atlanta, GA. If you have any questions or need additional information, please contact Cheryl Teich, (215) 619-5342, cteich@rohmhaas.com

April 12-13, 2005: A two-day course on "Practical Phase Transfer Catalysis" will be held in Chicago. For details, contact Marc Hapiren at 856-222-1146 or go to www.phasetransfer.com/courses.htm


April 22, 2005: Chicago Section's monthly dinner meeting.

April 22, 2005: "AIR - HERE, THERE, EVERYWHERE" - Chemists Celebrate Earth Day. For more information visit chemistry.org/earthday.


June 24, 2005: Chicago Section's monthly dinner meeting. Professor Ronald Breslow, Columbia University, will be the speaker.

August 12-21, 2005: Illinois Local Sections' cooperative program at the Illinois State Fair.

August 28 - September 1, 2005: The 230th ACS National Meeting will be in Washington, DC.

September 23, 2005: Chicago Section's monthly dinner meeting.