The Chemical Bulletin

http://chicagoacs.org

JUNE • 2009

CHICAGO SECTION AMERICAN CHEMICAL SOCIETY

Monthly Meeting

FRIDAY, JUNE 19, 2009

(Note: This is a Lunch Meeting)

Presentation of the 2009 DISTINGUISHED SERVICE AWARD to SUSAN SHIH (see page 5)

After-Lunch Speakers

Jerry Rice

Abstract: For 75 years, Chicago's Museum of Science and Industry has inspired the inventive genius in everyone through its captivating hands-on exhibits. Now, the idea is being taken a step further with Science Rediscovered, a campaign to inspire and motivate the next generation of inventors and innovators because today's children will make tomorrow's great scientific discoveries and breakthroughs that will change the world. The Museum's own Jerry Rice and Julie Parente will discuss Science Rediscovered, a blueprint for the future which is being implemented today. Learn about exciting new education initiatives and partnerships with Chicago Public Schools, spectacular new exhibits that are refreshing 90% of the Museum's exhibit space and incredible guest experiences at the Museum, online and throughout Chicago.

(continued on page 2)

Julie Parente

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 3 CPDU's.
(continued from page 1)

Biographies:

Jerry Rice, Communications Manager, External Affairs Division, Museum of Science and Industry

Jerry Rice oversees all communications and marketing related to the Science Rediscovered capital campaign to raise $205 million to help inspire the next generation of inventors, innovators and thinkers. Science Rediscovered is the Museum's blueprint for the future, prompting the development of a new Center for the Advancement of Science Education, a complete over-haul of 90% of the Museum's exhibit space and numerous new interactive guest experiences at the Museum, online and throughout Chicago.

Prior to joining the Museum in 2005, Mr. Rice was Associate Director of Leadership Giving with Northwestern University. He began his career working at Northwestern's McCormick School of Engineering and Applied Science. Mr. Rice holds a bachelor's degree in communication and public affairs from the University of Illinois and a master of science in managerial communication from Northwestern University.

Julie Parente, Education Communications Manager, Museum of Science and Industry

As Education Communications Manager at the largest science museum in the western hemisphere, Ms. Parente oversees marketing and public relations strategies to promote the Museum’s new Center for the Advancement of Science Education. The Center provides innovative programs for teachers, communities and students in order to help achieve the Museum’s vision, which is to inspire and motivate our children to achieve their full potential in the fields of science, technology, medicine and engineering.

Prior to joining the Museum in 2007, Ms. Parente was Director of Communications for Voices for Illinois Children, the state’s leading public policy organization for children. She began her career as a reporter and editor at daily newspapers in suburban Chicago and Fort Wayne, Ind. Ms. Parente has a bachelor’s degree in communication from Michigan State University.

POP TOP RINGS COLLECTION

Instead of throwing away those pop top rings from your pop cans, please bring them to the dinner meeting so we can donate them to a program at Ronald McDonald House.

(continued from page 1)

MENU: Fruit cup; Choice of entrée: Chicken Piccata, White Fish, or Vegetarian Tri-colored tortellini; Baked potato; seasonal vegetables; Mango sorbet; bread and butter; coffee, tea or milk.

Lunch reservations are required and should be received in the Section Office via phone (847-391-9091), email (chicagoacs@ameritech.net), or online (http://membership.acs.org/C/Chicago) by noon on Wednesday, June 17. The lunch cost is $25 to Section members who have paid their local section dues, members’ families, and visiting ACS members. The cost to members who haven’t paid their local section dues and to non-Section members and is $27. 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. No-shows will be billed.

SHORT COURSE SUMMER SALE

ACS knows that in this economy, money is tight. So we worked extra hard to find a very cost-efficient course location and are passing the savings on to you. The ACS Short Course Circuit in Tampa, FL from July 20-22, 2009 gives you a great opportunity to advance your career and invest in your future at a one-time only discounted price. Two- and three-day courses are $995 and one-day courses are $595. Visit our website at http://www.acs.org/shortcourses for complete details.

FEATURED COURSES include:

- Laboratory Safety - July 20-21
- Methods Development, Validation Procedures, and Conformity Assessment in the Analytical Laboratory - July 20-21
- Effective Supervision of Scientists and the Technical Staff - July 20-21
- Polyolefins 101 - July 20-21
- Introduction and Use of Standard Methods for Environmental Regulatory Analysis and Compliance - July 20-21
- Statistical Analysis of Laboratory Data - July 20-22
- Qualification and Validation of Laboratory Instruments and Equipment for Regulatory and QS Compliance (IQ, OQ, PQ) - July 22

IN THIS ISSUE

1 – Lunch Meeting
2 – ACS Short Course Summer Sale
3 – ChemShorts for Kids: Goldenrod Paper
4 – June Historical Events in Chemistry
5 – Distinguished Service Award to Susan Shih
6 – Job Club
7 – International Year of Chemistry – 2011
8 – Chicago Chromatography Discussion Group
9 – Help Fund the State Fair Project
10 – Ad Index
11 – State Fair Volunteers Needed
12 – Contact the Chair
13 – Calendar

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Contact:

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Bill Kidder – 763-568-2992
“CHES 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 their science literacy. Please cut it out and pass it on to your children, grandchildren, or elementary school teachers. It is hoped that teachers will incorporate some of the projects in this column into their lesson plans.

Goldenrod Paper

Kids, learn how to use a special color-changing paper to develop a hidden message! Certain brands of goldenrod (golden yellow) paper contain a special dye that turns bright red in solutions that are basic like ammonia or baking soda. The paper turns back to yellow with an acid like vinegar or lemon juice. You will need some sheets of goldenrod paper (available on-line at several sites or craft stores), cotton balls, household ammonia from the grocery store, safety glasses, and a candle.

1. Place a piece of goldenrod paper on the table. Make sure that table is clean and the work surface is dry.

2. Place a drop of water on one of the corners of the paper. Does anything happen?

3. Fill a jar with a small amount of ammonia water. Dip in a cotton ball and wipe it across the top portion of the goldenrod paper. Does anything happen?

4. As you continue to create designs on the top half of the goldenrod paper, notice that the paper does not stay red forever. What is causing the paper to change back to yellow?

5. Use the wax candle to write a secret message (such as “Chemistry is Cool!”) across the bottom half of the paper.

6. Wipe the cotton ball with ammonia water across the secret message to see what develops.

How does it work?

Goldenrod paper’s yellow color is from a dye that is found in turmeric powder, a deep orange-yellow spice. Turmeric contains 5% essential oils and 3% curcumin (another name for turmeric is curry). It is the active substance of turmeric and it is also known as Natural Yellow 3; the full chemical name is (hang on!): (1E,6E)-1,7-bis(4-hydroxy-3-methoxyphenyl)-1,6-heptadiene-3,5-dione (a polyphenol).

The ammonia on the cotton ball is a base and causes the dye in the special goldenrod paper to change color. You probably noticed that the red color fades over time and the paper eventually changes back to its original yellow color. Why? Carbon dioxide in the air reacts with ammonium hydroxide to make ammonium carbonate, which is neutral. If you use a stronger base like baking soda, the red message will not disappear in air. You will need to use a stronger acid like lemon juice or vinegar to change it from red to yellow. You can also use goldenrod paper as inexpensive pH paper to classify household products as being either acidic or basic.

References: http://www.stevespanglerscience.com (search “golden rod”); this link also has a video. Carl Ahlers - Prof Bunsen Science (www.profbonsen.com.au)

Edited by K. A. CARRADO, Argonne National Laboratory

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

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 OUR 50-YEAR ACS MEMBERS!

As part of our June 19 lunch meeting program, we will honor our section members who have been ACS members for 50 years! A 50-year membership card entitling them to free attendance at all ACS meetings is sent to each of them from the ACS National office in grateful appreciation of their many years of service to the Society.

At our meeting, each of them will be presented a handsome 50-year membership certificate to mark the occasion. Maybe you know or have worked with some members of this elite group. Take this opportunity to get together with your former colleagues for a nice lunch and an interesting presentation at our June meeting. We hope to see many of you there!
JUNE HISTORICAL EVENTS
IN CHEMISTRY

June 4, 1834  Jacob Volhard, whose research in organic synthesis included creatine, brominated organic acids, and thiophene compounds, was born.

June 6, 1943  Richard E. Smalley, a researcher in supersonic beam laser spectroscopy, was born. He shared the Nobel Prize in Chemistry in 1996 with R. F. Curl and H. W. Kroto for their discovery of fullerenes.

June 7, 1811  James Y. Simpson, an obstetrician who was the first to use chloroform as an anesthetic and introduced the use of ether in Great Britain, was born.

June 13, 1923  Lloyd Conover, who invented tetracycline, was born.

June 16, 1897  Georg Wittig, a researcher in the conversion of C=O to C=C (Wittig reaction), was born. He shared the Nobel Prize of 1979 with Herbert C. Brown for their development of the use of boron- and phosphorus-containing compounds, respectively, into important reagents in organic synthesis.

June 18, 1870  Charles Baskerville, who developed processes for refining & hydrogenation of oils, plastic compositions, & reinforced lead, was born. He was also a researcher in anesthetic chemistry.

June 20, 1944  L. B. Magnusson and T. J. La Chappelle isolated first microscopic quantity of compound of neptunium (Np) at wartime Metallurgical Laboratory at University of Chicago.

June 23, 1775  Etienne-Louis Malus, discoverer of polarization of light, was born. He also developed the theory of double refraction of light in crystals.

June 25, 1864  Walther H. Nernst, who elucidated the theory of galvanic cells, was born. His other contributions to science included deriving equations by which solids precipitate from saturated solutions, discovering the 3rd Law of Thermodynamics, developing an atomic chain reaction theory, and developing an improved electric lamp (Nernst lamp) and an electric piano (which did not gain the acceptance of musicians). In 1920, he received the Nobel Prize in recognition of his work in thermochemistry.

(continued on page 5)
SUSAN SHIH RECEIVES THE DISTINGUISHED SERVICE AWARD

The 2009 Distinguished Service Award will be presented to Susan M. Shih at the June 19 Chicago Section’s luncheon meeting.

The Distinguished Service Award was established in 1974 at the suggestion of Louis L. Lerner, who was consulting editor of The Chemical Bulletin at that time. It was established to recognize members of the Chicago Section ACS who have provided outstanding and devoted service to the section.

Since Susan became active in the section’s activities ten years ago, she has served on numerous committees as chair or co-chair as well as Chair of the section 2002-2004. Her vast committee work for the section includes Tellers Chair; National Meeting Host City co-Chair; National Chemistry Week; Long-Range Planning Co-Chair; GLRM Planning Co-Chair; Nominating; Gibbs Jurors Chair; Annual Report Chair; House; Public Affairs; Hospitality; Policy Chair; Office Affairs Chair; Women’s Chemist Committee co-Chair; Membership Affairs Co-Chair; Director; Finance Panel; State Fair. She also serves on committees for the National ACS.

Susan was born in Massachusetts but moved to Toronto when she started high school. After earning an M.S. in Inorganic chemistry, she became a temporary fulltime instructor at Roosevelt University where she met her future husband, Chang Shih, a physics professor. Following her marriage, she taught at Joliet Junior College, becoming the first female chemistry instructor there. She then temporarily retired to become a full time mother to her children, Jennifer and Andrew.

When both children were in school, Susan went back to teaching, this time at the College of DuPage. She took over the running of the department in the early 1990s and continued in this capacity until her retirement in 2008. While there, her husband suffered a massive disabling stroke and she had to raise her children on her own.

In addition to her ACS activities, she has done community work. She has served on her local library board for ten years and volunteered at her local food pantry.

Her current interests include gardening, working out, reading, and traveling, especially to visit her married children who live out east.

Please join us on June 19 as we honor Susan with the 2009 Distinguished Service Award for her meritorious service to the Chicago Section.
INTERNATIONAL YEAR OF CHEMISTRY – 2011

In celebration of the achievements of chemistry and its contributions to humankind, the United Nations General Assembly passed a resolution on December 30, 2008, formally declaring 2011 as the International Year of Chemistry (IYC). Working through ACS international alliances and networks, ACS leadership takes pride that the American Chemical Society played an instrumental role in the advocacy efforts culminating in the United Nations’ IYC designation. During the International Year of Chemistry, planned activities will do the following:

a. Increase the public appreciation of chemistry in meeting world needs. Chemistry, appropriately called the Central Science, is both a deeply philosophical inquiry and an applied scientific endeavor. The science of chemistry is fundamental to humanity’s understanding of the world and the cosmos. Molecular transformations are central to the production of foodstuffs, medicines, fuels, metals, i.e., virtually all manufactured and extracted products. Through IYC the chemical community will publicly celebrate the art and science of chemistry, its key contributions to developing human knowledge, advancing economic progress and fostering a wholesome environment.

b. Increase interest of young people in chemistry. In order to ensure that first-rate minds continue to be attracted to and challenged by the central science, IYC will underscore the role of chemistry in managing natural resources sustainably. In partnership with the United Nations, the International Year of Chemistry will make a strong educational contribution toward the goals of the UN Decade of Education for Sustainable Development, particularly in the key action areas of health and environment. National and international activities carried out during the International Year will emphasize the importance of chemistry in helping to sustain the natural resource base for life.

c. Generate enthusiasm for the creative future of chemistry. Humanity’s understanding of the world is grounded in our developing knowledge of chemistry. Creative opportunities to discover exciting new principles and applications continually appear as our understanding of molecular properties grows. Chemists will inevitably play a key role in overcoming the challenges facing today’s world, for example in helping to address the United Nations Millennium goals. A deep understanding of the science is essential for developing molecular medicine, for creating new materials and sustainable sources of food and energy.

d. Celebrate the 100th anniversary of the Mme. Curie Nobel Prize and the 100th anniversary of the founding of the International Association of Chemical Societies. The year 2011 marks the one-hundredth anniversary of the Nobel Prize in Chemistry awarded to Marie Skłodowska Curie, recognizing her discovery of the elements radium and polonium. Dr. Curie’s achievements continue to inspire students, especially women, to pursue careers in chemistry. The year 2011 also marks the one hundredth anniversary of the founding in Paris of the International Association of Chemical Societies to address the need for international cooperation among chemists and international standardization of nomenclature, atomic weights, physical constants, and scientific communication.

The International Year of Chemistry – 2011 will improve the understanding and appreciation of chemistry by the public; enhance international cooperation by serving as a focal point or information source for activities by national chemical societies, educational institutions, industry, and governmental and nongovernmental organizations; promote the role of chemistry in contributing to solutions to global challenges; and build capacity by engaging young people with scientific disciplines, especially the scientific method of analysis developed by hypothesis, experiment, analysis and conclusions.

SPONSORS NEEDED--ILLINOIS STATE FAIR PROJECT

The Chicago Section, along with the other Illinois Sections of the ACS, is again planning to have a tent at the Illinois State Fair August 14-23. Last year, over 14,600 people visited our tent. The tent provides outreach to the public on chemistry through demos, hands-on activities, literature, and giveaways. We are looking for individuals and companies to help sponsor our tent. In return for financial contributions we will promote your company’s name at the front of the tent as a sponsor as well as on CDs with information given to over 300 school teachers throughout the state of Illinois. This is a great way to get your company recognized in the public as well as promoting chemistry. If you are interested in making a donation to help keep this worthwhile public outreach project going strong, please call the Section office at (847) 391-9091. Thank You!

CHERLYN BRADLEY
FRAN KRAVITZ
Co-Chairs, Ad-Hoc Committee of the Illinois Sections of the ACS Cooperative State Fair Project

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CHICAGO CHROMATOGRAPHY DISCUSSION GROUP
Please check out our new website at: www.ccdg.org
Our new site features the convenient benefits of signing up for membership online, information on our upcoming events and links to all things chromatography.
JOIN US AT THE FAIR!

The Chicago Section, along with the other ACS Illinois Sections, again plans to have a cooperative tent at the Illinois State Fair August 14-23 in Springfield, IL. Our joint-sections' tent activities provide information to the public on chemistry with demos, hand-on activities, computer quizzes, posters, literature, and give-aways and give us a chance to show the positive aspects of chemistry to many Illinois citizens and governmental leaders. Last year, over 14,600 people visited our tent—a record attendance!!

We particularly need volunteers to help during the fair. Student affiliates and other student volunteers are welcomed! If you are interested in helping us for a few hours in this fun and worthwhile outreach activity (you do get free admission to the Fair, free parking and a T-shirt if you sign up to volunteer in time!) -- call the Section office at (847) 391-9091 and go to our website at http://membership.acs.org/C/Chicago/statefair/index.html for information and to sign-in using our online volunteer scheduler.

Whether you spend your summer traveling, going to school, working, or playing....Have a wonderful summer and see you in the Fall with the September issue!----Editorial Staff

CONTACT THE CHAIR

Do you have any questions, suggestions, ideas, gripes, or complaints 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 4,600 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 fail by not being involved. I look forward to hearing from you.

AMBER ARZADON
CHICAGO SECTION CHAIR