

# The Chemical Bulletin

<http://chicagoacs.org>

MAY • 2010

**THE NINETY-NINTH PRESENTATION OF THE  
WILLARD GIBBS MEDAL  
(Founded By William A. Converse)  
to  
PROFESSOR MAURICE BROOKHART  
sponsored by the  
CHICAGO SECTION AMERICAN CHEMICAL SOCIETY  
FRIDAY, MAY 14, 2010**

Casa Royale  
783 Lee Street  
Des Plaines, IL 60016  
847-297-6640

**From Chicago or the west:** Take I-90 to I-294 North, exit I-294 at Touhy West and go to Mannheim Road. Turn north onto Mannheim Road. Mannheim becomes Lee Street. Casa Royale is located 2 miles north of Touhy on Lee Street.

**From Milwaukee or the north:** Take I-294 South, exit onto Golf Road West (Rte 58)  
*(continued on page 2)*

**RECEPTION** **6:00 P.M.**  
Hors-d'oeuvres  
Two Complimentary Drinks

**DINNER** **7:00 P.M.**  
*(continued on page 2)*

**AWARD CEREMONY** **8:30 PM**

The Willard Gibbs Medal

Dr. Ken Fivizzani, Chair  
Chicago Section, ACS

**Introduction of the Medalist**

**Presentation of the Medal and Citation**



**Dr. Maurice Brookhart**, William R. Kenan, Jr. Professor of Chemistry, University of North Carolina, Chapel Hill, North Carolina

*(continued on page 2)*

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**ACCEPTANCE ADDRESS**

“Alkane Metathesis: A Route to Tomorrow’s Fuels?”

**Abstract:** There are now numerous transition metal-based systems known that will activate carbon-hydrogen bonds of alkanes via oxidative addition reactions. Only a few such reactions have been incorporated into viable, efficient catalytic cycles.

This presentation will focus on the use of pincer iridium complexes in catalytic transformations in which C-H bond activation is the key step. These processes will include the following: a) intermolecular hydrogen transfer reactions as a method for introducing carbon-carbon double bonds into alkanes and b) coupling such reactions with alkene metathesis which provides a method for converting linear alkanes to alkanes of higher and lower carbon number.

This alkane metathesis reaction can potentially be used for converting alkanes generated via the Fischer-Tropsch process to alkanes in the diesel range, thus providing increased efficiency for producing transportation fuels from coal and biomass. Homogeneous and supported catalysts will be described and mechanistic aspects of these processes will be highlighted.

**THE MEDALIST**

**Maurice Brookhart** (b. 1942) grew up in the mountains of western Maryland and attended Johns Hopkins University in Baltimore where he received an A.B. degree in chemistry in 1964. He carried out his doctoral work in physical organic chemistry at UCLA under the direction of Saul Winstein. After finishing the Ph.D. degree in 1968, he spent six months as a National Science Foundation postdoctoral fellow at UCLA with Winstein and Frank Anet, followed by a year of study at Southampton University as a NATO postdoctoral fellow.

Brookhart joined the University of North Carolina faculty in 1969 and is currently a William R. Kenan, Jr. professor of chemistry. He has spent research leaves at the University of Rennes (1981), Oxford (1982-83), UC-Berkeley, (Fall, 1996), Seville (Spring, 1997), University of Marburg (Spring, 2001) and the Max Planck Institute, Muelheim (Spring, 2003).

He served as associate editor of *Organometallics* (1990-96) and received the 1992 American Chemical Society (ACS) Award in Organometallic Chemistry, a 1994 ACS Cope Scholar Award and the 2003 ACS Award in Polymer Chemistry. He was elected to the American Academy of Arts and Sciences in 1996 and the National Academy of Sciences in 2001 and received the North Carolina Award in Science in 2008.

Brookhart’s research interests span mechanistic, synthetic, and structural organometallic chemistry. Most recently efforts have focused on the development and mechanistic understanding of late transition metal complexes for olefin polymerizations and employing carbon-hydrogen bond activation processes in catalytic transformations of small molecules.

**Directions (continued from page 1)**

and go to River Road (Rte 45). Turn south onto Des Plaines/River Road and go to Thacker/Dempster. Turn west onto Thacker/Dempster and go to Lee St./Mannheim Rd. Note: Lee St. is northbound only. Go north one block to Casa Royale.

**From Northern Indiana or the south:**

Take I-294 North, exit I-294 at Touhy West and go to Mannheim Road. Turn north onto Mannheim Road. Mannheim becomes Lee Street. Casa Royale is located 2 miles north of Touhy on Lee Street.

or:

Take I-294 North, exit at Dempster (Rte 14) west. Take Dempster west to Des Plaines River Road and turn south onto Des Plaines River Road to pick up Dempster west again. Turn west onto Dempster/East Thacker and turn right/north onto Lee St./Mannheim Rd. Go north one block to Casa Royale.

**Parking:** Free

**DINNER (Continued from Page 1)**

Dinner reservations are required. To reserve your tickets, please call the Chicago Section office at 847-391-9091 or register at <http://ChicagoACS.org> by **Monday, May 10** and pay \$40 at the door, or fill out the reservation form on page 11 and mail it with your payment of \$40 by Wednesday, May 5 to the address given on the form. If you are not a member of the Chicago Local Section, you are not eligible for half price tickets for students, unemployed, or retired Chicago Section members. Tickets and nametags will be available at the door. No refunds will be made after noon on Monday, May 10, 2010.

Tables of 10 may be reserved. If you request seating for a group, please include a list of names of the people in your group and their meal choices. Tickets and nametags will be available at the door.

Seating will be available after the dinner for people not attending the dinner but interested in hearing the speaker.

**THE MENU:** Cream of Asparagus soup, Signature Salad pre-dressed with Raspberry Vinaigrette dressing; an entree choice of either Chicken Wellington with Sherried Duxelle Mushroom Cream Sauce encrusted in a Puff Pastry, Baked Salmon with Dill Sauce, or Eggplant Parmigiana; Duchesse Potatoes and Green Beans Almondine; Warmed Apple Cobbler à la mode with Caramel Sauce; Wine

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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 CPDU’s.

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## "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 their science literacy. Please print it out and pass it on to your children, grandchildren, or elementary school teachers. Teachers are encouraged to incorporate the projects in this column into their lesson plans.

### The Brazil Nut Effect

Kids, why is it that the largest nuts in a can of mixed nuts always seem to be on the top when you open the can? The "Brazil nut effect" is a phenomenon in which the largest particles end up on the top when a granular material containing a mixture of objects of different sizes is shaken. In a typical container of mixed nuts, the largest will be Brazil nuts.

The phenomenon is also known as the muesli effect since it is seen in breakfast cereal that has pieces of different sizes but similar density, such as muesli mix. It seems counter-intuitive that the largest and (presumably) heaviest particles rise to the top, but there are several possible explanations:

- Smaller particles can fall into the spaces underneath a larger particle after each shake. Over time, the larger particle rises in the mixture. In other words: The center of mass of the whole system in a random state is not optimized. When a can of mixed nuts is shaken, gravity will make sure the center of mass of the system moves down and this can only be done by moving the Brazil nuts up. Gravity will also make sure they stay up.
- When shaken, the particles move in vibration-induced convection flow: individual particles move up through the middle, across the surface, and down the sides. If a large particle is involved, it will be moved up to the top by convection flow. Once at the top, the large particle will stay there because the convection currents are too narrow to sweep it down along the wall.
- Including the effects of air in spaces between particles, larger particles may become buoyant or rise.

This effect is of serious interest for some manufacturing operations; once a

heterogeneous mixture of different sizes of granular materials is made, it is usually undesirable for them to segregate. Several factors determine the degree of the Brazil nut effect, including the sizes and densities of the particles, the pressure of any gas between the particles, and the shape of the container. A rectangular box (such as a box of breakfast cereal) or cylinder (such as a can of nuts) works well to counter the effect, while a cone-shaped container results in what is known as the reverse Brazil nut effect.

References:

[http://en.wikipedia.org/wiki/Brazil\\_nut\\_effect](http://en.wikipedia.org/wiki/Brazil_nut_effect)

This link contains some videos: <http://jfi.uchicago.edu/~jaeger/group/Mixed%20Nuts.html>

Submitted by DR. KATHLEEN CARRADO

All past "ChemShorts for Kids": [http://chicagoacs.org/CS\\_home.html](http://chicagoacs.org/CS_home.html)

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## FREE MULTIMEDIA CLIMATE CHANGE ASSEMBLIES FOR HIGH SCHOOLS

The Alliance for Climate Education presents 45–60 minute interactive presentations for high school students explaining global climate change and its effect on our planet. Go to <http://www.acespace.org/>

May, 2010 Vol. 97, No. 5. Published by the Chicago Section of The American Chemical Society, Editorial Staff: Cherlyn Bradley, Editor; Fran Kravitz, Associate Editor; Richard Treptow, Proofreader; Frank Jarzembowski, Publications Business Manager. Address: 1400 Renaissance Dr., Park Ridge, Illinois 60068; 847/391-9091. Subscription rates: \$15 per year. Frequency: monthly-September through June.

## RUSS JOHNSON RECEIVES THE DISTINGUISHED SERVICE AWARD

The 2010 Distinguished Service Award will be presented to Russell W. Johnson at the June 17 Chicago section meeting. Come and honor Russ with us!

## MESSAGE FROM THE CHAIR

We welcome Professor Maurice Brookhart of the University of North Carolina to Chicago for the **2010 Gibbs Medal Dinner** on May 14. Details of the award and information about this year's medalist are found in this issue. In July, the Gibbs Jury will begin the selection process for the 100th recipient of the Gibbs Medal in 2011.

Have you begun to make plans for your summer? Why not spend some time helping us at the **Illinois State Fair in Springfield!** Ten of the ACS Illinois local sections sponsor a tent at the State Fair. We provide information, games, demonstrations, and fun activities for chemists of all ages! **The dates for the fair are August 13-22** (this is the week before the Boston National Meeting). You can sign up on our website to volunteer for this public outreach activity at the fair. We also need financial support from individuals and organizations that can make a donation to support this worthwhile project. One of our longtime financial supporters is not able to contribute this year. If you can help with a small or moderate gift (big gifts are also ok), contact the section office.

We also want to fill an opening on the **Chemistry Day** Committee. We need an individual who is willing to contact the organizations and industrial companies who have provided a booth on Chemistry Day. You would make a few calls to the organizations (we have the contacts' names for most of them) and ask if they wish to participate again this year. Contact the section office if you can help with this task.

KEN FIVIZZANI

## THE WILLARD GIBBS AWARD

### Founded by William A. Converse

The award was founded in 1910 by William Converse (1862-1940), a former chairman and secretary of the Chicago Section. The medal was named for Professor Josiah Willard Gibbs (1839-1903) of Yale University. Gibbs, whose formulation of the Phase Rule founded a new science, is considered by many to be the only American born scientist whose discoveries are as fundamental in nature as those of Newton and Galileo.

Mr. Converse supported the award personally for a number of years, and then established a fund for it in 1934 that has subsequently been augmented by the Dearborn Division of W. R. Grace & Co. Considerable contributions to the award have also been made by J. Fred Wilkes and his wife. Since the sale of the Dearborn/Grace division to Betz, the BetzDearborn Foundation, located in Horsham, Pennsylvania has most generously offered to continue the historic relationship between the Section and Dearborn. This Foundation has contributed annually since the purchase toward the Willard Gibbs Medal Fund to help defray the cost of the medal and of the banquet itself-helping to make the banquet award the outstanding and gracious event that it is. We are most appreciative of their support.

The purpose of the award is "to publicly recognize eminent chemists who, through years of application and devotion, have brought to the world developments that enable everyone to live more comfortably and to understand this world better." Medalists are selected by a national jury of eminent chemists from different disciplines. The nominee must be a chemist who, because of the preeminence of his or her work in and contribution to pure or applied chemistry, is deemed worthy of special recognition.

The award consists of an eighteen-carat gold medal having, on one side, the bust of J. Willard Gibbs, for whom the medal was named. On the reverse is a laurel wreath and an inscription containing the recipient's name.

Given annually for ninety-eight years, the recipients span nearly a century of chemistry. Most of the names are familiar to chemists regardless of specialty. This fame may result from later recognition, including, in many cases, the Nobel Prize. Another reason for the familiarity of these names may be that textbooks have permanently associated many of these names with classic reactions or theories. In any case, the fame achieved by the Gibbs medalists has crossed the boundaries between chemistry specialties.

Svante Arrhenius	1911	Joel H. Hildebrand	1953	M. Frederick Hawthorne	1994
Theodore W. Richards	1912	Elmer K. Bolton	1954	Sir John Meurig Thomas	1995
Leo H. Baekeland	1913	Farrington Daniels	1955	Fred Basolo	1996
Ira Remsen	1914	Vincent du Vigneaud	1956	Carl Djerassi	1997
Arthur A. Noyes	1915	W. Albert Noyes, Jr.	1957	Mario J. Molina	1998
Willis R. Whitney	1916	Willard F. Libby	1958	Lawrence F. Dahl	1999
Edward W. Morley	1917	Hermann I. Schlesinger	1959	Nicholas J. Turro	2000
William M. Burton	1918	George B. Kistiakowsky	1960	Tobin J. Marks	2001
William A. Noyes	1919	Louis Plack Hammett	1961	Ralph Hirschmann	2002
F. G. Cottrell	1920	Lars Onsager	1962	John I. Brauman	2003
Mme. Marie Curie	1921	Paul D. Bartlett	1963	Ronald Breslow	2004
Julius Stieglitz	1923	Izaak M. Kolthoff	1964	David A. Evans	2005
Gilbert N. Lewis	1924	Robert S. Mulliken	1965	Jacqueline Barton	2006
Moses Gomberg	1925	Glenn T. Seaborg	1966	Sylvia T. Ceyer	2007
Sir James Colquhoun Irvine	1926	Robert Burns Woodward	1967	Carolyn Bertozzi	2008
John Jacob Abel	1927	Henry Eyring	1968	Louis Brus	2009
William Draper Harkins	1928	Gerhard Herzberg	1969		
Claude Silbert Hudson	1929	Frank H. Westheimer	1970		
Irving Langmuir	1930	Henry Taube	1971		
Phoebus A. Levene	1931	John T. Edsall	1972		
Edward Curtis Franklin	1932	Paul John Flory	1973		
Richard Willstätter	1933	Har Gobind Khorana	1974		
Harold Clayton Urey	1934	Herman F. Mark	1975		
Charles August Kraus	1935	Kenneth S. Pitzer	1976		
Roger Adams	1936	Melvin Calvin	1977		
Herbert Newby McCoy	1937	W. O. Baker	1978		
Robert R. Williams	1938	E. Bright Wilson	1979		
Donald Dexter Van Slyke	1939	Frank Albert Cotton	1980		
Vladimir Ipatieff	1940	Bert Lester Vallee	1981		
Edward A. Doisy	1941	Gilbert Stork	1982		
Thomas Midgley, Jr.	1942	John D. Roberts	1983		
Conrad A. Elvehjem	1943	Elias J. Corey	1984		
George O. Curme, Jr.	1944	Donald J. Cram	1985		
Frank C. Whitmore	1945	Jack Halpern	1986		
Linus Pauling	1946	Allen J. Bard	1987		
Wendell M. Stanley	1947	Rudolph A. Marcus	1988		
Carl F. Cori	1948	Richard B. Bernstein	1989		
Peter J. W. Debye	1949	Richard N. Zare	1990		
Carl S. Marvel	1950	Gunther Wilke	1991		
William Francis Giauque	1951	Harry B. Gray	1992		
William C. Rose	1952	Peter B. Dervan	1993		

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### DEADLINES FOR THE 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](mailto: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.

<b>2010 Issue</b>	<b>Deadline</b>
June	April 30
September	July 9
October	August 27
November	September 24
December	October 22

## DEATH NOTICE



Thomas J. Kucera, 1925 - 2010

With great sadness we report that Tom Kucera passed away on Sunday, March 14, 2010. Tom served many roles in the American Chemical Society and the Chicago Section. He was a major force in organizing the first Chemistry Day Activity at the Museum of Science and Industry in 1986 and served as the chair of our Chemistry Day committee for a number of years. Tom was a Chair of the Section, a long-time Councilor, Trustee and Director, and received the Distinguished Service Award in 1990. He was a past editor of the *Chemical Bulletin* and received the Chicago Section Public Affairs Award in 1995. He served on a number of Council committees, perhaps most notably on the Chemists with Disabilities Committee.

Tom received his B.S. from Loyola University in 1945, M.S. from IIT in 1952 and Ph.D. from Purdue in 1953. He was a Fulbright Scholar in 1953-54. He retired from Apeco Co. in 1981 as VP for research and development, and established T.J. Kucera Consultants. He had been especially active with the ACS Division of Professional Relations (DPR), having served as a program chair. He received both the Henry Hill and Lou Sacco Award from DPR. Tom was also active in the Chicago Technical Sciences Council.

Tom was in an automobile accident in his thirties and he had to use crutches ever since. More recently he needed to use a wheelchair and could be seen zipping about ACS meetings in a motorized wheelchair. Once a fixture at ACS meetings, declining health forced him to give up attending national meetings a few years ago. He is survived by his loving wife, friend and companion, Dorothy,

their children and grandchildren.

Tom was a model to many chemists. He will be missed by all of his many friends and fellow chemists.

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## ENERGY WEBSITE FROM THE NATIONAL ACADEMIES

The National Academies has launched the website "What You Need To Know About Energy," a rich resource designed to help general audiences make sense of our nation's energy situation. The friendly and accessible site includes an energy trivia quiz and other informative, interactive features, as well as a rich array of energy facts, all presented in an easy-to-navigate format that allows users to choose their own paths through the energy story. Go to <http://needtoknow.nas.edu/energy>.

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## ACS DIRECTORY OF GRADUATE RESEARCH 2009

The ACS Directory of Graduate Research (DGR) 2009 and DGRweb, the searchable online version of the DGR, are now available. For the first time, research institutions in Mexico are included in the DGR. The Directory facilitates research collaborations and enables networking across chemical sub-disciplines, providing the most comprehensive information on graduate research and researchers at universities across North America.

The 2009 print edition of the DGR provides information on

- 675 academic departments,
- 9,981 faculty members, and
- 64,331 publication citations.

DGRweb features include

- search capability for both faculty and areas of research;
- improved faculty search using multiple keywords for specific research interests;
- regional search features for faculty and institutions;
- "Print PDF" feature, which allows users to print individual department listings formatted as in the hardcover DGR; and
- access to the complete databases from 1999 through 2009.

As in the previous edition, DGRweb continues to be available free of charge at [www.acs.org/dgrweb](http://www.acs.org/dgrweb).

Copies of the print edition may be ordered by calling 1-800-227-5558 or by going online at [www.acs.org/dgrweb](http://www.acs.org/dgrweb).

## CHICAGO CHROMATOGRAPHY DISCUSSION GROUP

The 47th Annual Introductory Course in Gas Chromatography will be held May 10-14, 2010 at Roosevelt University, 1651 McConnor Parkway, Schaumburg, IL. The 3 ½ day course is intended to give the students sufficient theoretical and practical background to perform independent work in gas chromatography. The course includes both lecture and laboratory sessions.

Half the course will be devoted to lectures encompassing all major areas of gas chromatography likely to be encountered by workers practicing in the field. The lectures will be presented by outstanding Chicago area industrial and academic scientists who are very active in this field.

This course will emphasize practical laboratory training in capillary GC. Gas chromatographs, supplied by leading manufacturers, will be available for the students. During the three and ½ day sessions each student will spend about five hours in intensive laboratory work in the areas of qualitative and quantitative analysis. The fee for the course is \$795, which includes lunch, text and laboratory manual.

Register at [www.ccdg.org](http://www.ccdg.org). Deadline for registration is May 3.

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## SPEAKERS AND DEMONSTRATORS NEEDED

The Primary Education Committee is seeking ACS members, nonmembers, undergraduates and graduate students and industrial companies who would be interested in working with elementary schools (pre-K through 8th) in Chicago and surrounding suburban areas. We are looking for eager, energetic individuals who love chemistry and would like to present demonstrations in school, or partner with an elementary teacher or give talks. The committee will publish this list and distribute it into area schools and libraries. If you are interested please send your name, address, phone number with area code, e-mail address and whether you would like to be a demonstrator or partner with a teacher or provide talks or any combination to the Section office at: [chicagoacs@ameritech.net](mailto:chicagoacs@ameritech.net) or by mail at: Chicago Section, ACS, 1400 Renaissance Drive, Suite 312, Park Ridge, IL 60068. Please make sure to mark the subject line with "Speakers and Demonstrations".

FRAN KRAVITZ  
PRIMARY EDUCATION COMMITTEE  
CHAIR

**\$314,551**

On May 13, 1954 the Board of Directors of the Chicago Section American Chemical Society passed the following motion:

The Endowment Committee be empowered to include solicitation of contributions to such a scholarship fund from individual organizations, and that further action on the Education Committee's Report be deferred until the Endowment Committee reports the results of its solicitation.

On December 2 of that year the Endowment Committee reported that \$950 had been pledged toward the scholarship fund by ten persons, and that the fund should be able to provide \$1,700 to \$2,200 worth of prizes depending upon whether cash prizes could be awarded to teachers.

The first scholarship exam was held the morning of May 14, 1955 at Northwestern University which 190 students attended.

On September 13, 1956 the Board of Directors established an endowment fund to underwrite the scholarship program.

In January, 1957 the Board of Directors received a report that several contributors indicated they expect to make yearly contributions to the scholarship fund. In 1960 the trustees of the National Chemical Exposition recommended to the Board of Directors that a portion of the proceeds from the exposition be added to the Scholarship Endowment Fund. Exposition proceeds from that time until the exposition was taken over by the National ACS has provided the major portion of funding for the scholarship ever since.

In 1976 the Marshall S. Smoler Scholarship Award was established by Rachel L. Smoler, Marshall's sister, in his memory. She personally funded this award which is given annually to the highest scoring Chicago Public High School student. Upon her death in 2001 Rachel's estate provided \$5,000 to endow this award. This scholarship is awarded to the highest scoring student from the Chicago Public Schools.

In 1995 the Section established the Marie Lishka Scholarship Award which is presented to the highest scoring female student. Marie was very active in the Chicago Section, and died at a very young age.

In 2003 The Chicago Chemists Club transferred \$10,000 to the Chicago Section for investment with the Chicago Section's endowment funds. This money is used to finance the Bernard Schaar scholarship award. This award is administered by the Chicago Chemists Club through the Chicago Section's scholar-

ship examination.

Since its inception in 1954, this program has awarded 333 scholarships totaling \$314,551.

Herb Golinkin  
Chicago Section Comptroller

**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 13-22** 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 11,500 people visited our tent.**

**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://chicagoacs.org/statefair/index.html> for information and to sign-in using our online volunteer scheduler.

**SCHOLARSHIPS AVAILABLE FOR FUTURE SCIENCE TEACHERS**

Chicago State University recently received a grant to fund students preparing to be secondary science teachers. The project, "Establishing a Supportive Environment for the Recruitment, Preparation, and Retention of the Urban Science Teacher" is funded through the National Science Foundation Robert Noyce Teaching Scholarship Program. The Department of Chemistry and Physics and the Department of Biological Sciences will receive \$670,962 over 5 years. Scholarships are available for junior/senior undergraduates, certification students, and Masters of Arts in Teaching candidates. Individuals who have a degree in science and are looking into a career change are highly encouraged to apply for a full tuition scholarship for the certification or masters program. Please see our website <http://webs.csu.edu/~noycesch/> or contact the program director, Dr. Andrea Gay Van Duzer at [agay@csu.edu](mailto:agay@csu.edu), for more information.

**SCIENCE HISTORY TOUR ITALY - SEPT/OCT 2010**

We are going Italy in the fall when it is cooler and less humid. Our tentative plan is to begin in Como on Wednesday September 29, then travel for two weeks towards Rome, where we will end the trip on Wednesday October 13. To date, itinerary and price are not available but, we will probably visit Como to see Volta; Vicenza (with a day trip to Venice) to see some of Palladio's architecture; Bologna; Florence, for the superb Science Museum and Galileo's places; Urbino; and Rome for visits to the classical sites and some interesting science places. As usual, we will see museums, art galleries, sites of special interest in science and possibly Mount Vesuvius.

Many additions to this outline itinerary that will be announced later Included in the trip cost will be: all land transportation, hotel accommodation with private bathrooms, all breakfasts and at least (on average) one other meal per day. Also included are admissions to museums, lecture fees, and many incidentals. Not included are: airfare to and from Europe, the cost of getting from the airport to Como and from your last destination to your home-bound flight, and meals on your own during free time. We are a not for profit and people have said over the years we are an "excellent value" compared to other programs.

For further information or sign-up materials once they are available, E-mail me at [ytwomey@mindspring.com](mailto:ytwomey@mindspring.com) or [ytwomey@fnal.gov](mailto:ytwomey@fnal.gov) or Lee at [Lmarek@aol.com](mailto:Lmarek@aol.com) or [lmarek2@uic.edu](mailto:lmarek2@uic.edu)

For information about previous trips, see Lee's webpage at <http://www.chem.uic.edu/marek/> or tour member John Oliver's great pictures from previous tours at <http://community.webshots.com/user/oliverjcomo>

YVONNE TWOMEY  
LEE MAREK

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

**NEXT ISSUE:**  
the  
**June Section Meeting**  
presenting the Section's  
**Distinguished Service Award**  
and honoring our  
**50- and 60-year members**

## DR. ZAFRA M. LERMAN WINS GEORGE C. PIMENTEL AWARD IN CHEMICAL EDUCATION



Congratulations from the Chicago section ACS to our very own Zafra Lerman, recipient of the 2010 ACS George C. Pimentel Award in Chemical Education for her significant contributions to the promotion of chemical education! Dr. Lerman was honored at an awards ceremony held in conjunction with the 239th ACS national spring meeting in San Francisco in March.

The George C. Pimentel Award in Chemical Education is one of 53 annual awards administered by the ACS, all of which honor chemistry professionals for their contributions to the profession. Recipients of the George C. Pimentel Award in Chemical Education are selected because of their high-level commitment to chemical education, including the training of professional chemists, dissemination of reliable information about chemistry and integration of chemistry into the education system

An Israeli-born chemistry professor, Zafra has made her mark in chemistry as both an educator and human rights activist. A former Distinguished Professor of Science and Public Policy at Columbia College Chicago, she is credited with establishing the College's Institute for Science Education and Science Communication, that offered an innovative approach to teaching science to non-science majors. She also founded the Malta Conference, a biennial meeting of Middle Eastern chemical scientists dedicated to fostering peace and cooperation in the Middle East.

Zafra's contributions to chemical education and human rights activism have garnered her multiple prestigious awards, including the U.S. Civilian Research & Development Foundation's George Brown Award for International Scientific Cooperation, the Presidential Award from President William J. Clinton for Excellence in Science, Mathematics and Engineering Mentoring, ACS's Charles Lathrop Parsons Award and the New York Academy of Sciences' Heinz R. Pagels Human Rights Award. In addition, she was the recipient of the World Cultural Council's 2000 José Vasconcelos World Award of Education, the first international award presented in the new democratic South Africa.

Her ongoing commitment to helping others achieve their potential is what earned Dr. Lerman the George C. Pimentel Award in Chemical Education. According to ACS, Dr. Lerman was selected for being a remarkable, innovative educator who has created new ways to bring an understanding of chemistry to students, teachers, public officials and the general public.

"For more than four decades I've dedicated myself to making the subject of science accessible to all students – helping them realize how science is relevant and applicable to all majors and areas of interest," said Dr. Lerman. "Being honored with the George C. Pimentel Award in Chemical Education is a great accomplishment, as it reinforces my hard work and commitment to promoting science education."

In addition to the awards presentation, two symposia, titled "Innovations in Chemical Education" and "Human Rights, Diversity and Peace," were held in her honor during the ACS national meeting on March 23. Dr. Lerman provided the closing address, "Human Rights, Education and Peace – A Personal Odyssey."

The George C. Pimentel Award in Chemical Education is sponsored by Cengage Publishing and the American Chemical Society. The award consists of a \$5,000 honorarium and certificate.

### Short Bio on Dr. Zafra J. Margolin Lerman

Zafra received both B.Sc. and M.Sc. degrees from Technion Israel Institute of Technology in Haifa, Israel. In 1969, she received a Ph.D. in chemistry from Weizmann Institute of Science in Rehovot, Israel. As a postdoctoral fellow at Cornell University, she conducted research on isotope effects, which she continued at Northwestern University and the Swiss Federal Institute of Technology in Zurich, Switzerland. In 1977, she became the first science faculty member at Columbia College Chicago, marking the beginning of a more than 30-year career with the College that would include her leading the Department of Science and Mathematics and the Institute for Science Education and Science Communication. Dr. Lerman has received more than 35 national and international awards and recognition for her work promoting science education. She also has secured more than \$7 million in funding from the National Science Foundation, National Institute of Health, Joyce Foundation, Annenberg Foundation and State of Illinois, among other organizations.

## APPLY NOW FOR UNDERGRADUATE SUMMER RESEARCH OPPORTUNITIES

The ACS-IREU Program (International Research Experience for Undergraduates) is welcoming applications for participation in 2010 summer research. This National Science Foundation-funded international research program provides opportunities for undergraduates majoring in chemistry, biochemistry, materials science or chemical engineering to conduct intensive research for 10 weeks in laboratories in France, Italy, Germany, or the UK. To qualify, students must be in their sophomore or junior year, have one semester or summer of prior research experience, and must be US citizens or permanent US residents. Members of underrepresented minority groups are encouraged to apply. To learn more, go to [www.acs.org/ireu](http://www.acs.org/ireu).

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## **SPONSORS NEEDED-- ILLINOIS STATE FAIR PROJECT**

The Chicago Section, along with the other Illinois Sections of the ACS, is again planning to have an exhibitor's tent at the Illinois State Fair August 13-22. **Last year, over 11,500 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 display your company's name at the front of the tent as a sponsor and on CDs with information given to over 350 teachers throughout the state of Illinois. **This is a great way to get your company recognized in the public and to promote 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!

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

## **PROJECT SEED SUMMER RESEARCH INTERNSHIP PROGRAM FOR ECONOMICALLY DISADVANTAGED HIGH SCHOOL STUDENTS**

The ACS Project SEED summer research program opens new doors for economically disadvantaged students to experience what it's like to be a chemist. Students entering their junior or senior year in high school are given a rare chance to work alongside scientist-mentors on research projects in industrial, academic, and federal laboratories, discovering new career paths as they approach critical turning points in their lives. With guidance from mentors, they gain confidence, a solid sense of direction, and the ability to realize their own potential. For more information, visit [www.acs.org/education](http://www.acs.org/education) and the Project SEED link under High School Programs, or contact **Tracey Braun**, Project SEED coordinator for the Chicago Section at [tracey.braun@abbott.com](mailto:tracey.braun@abbott.com).



## MAY HISTORICAL EVENTS IN CHEMISTRY

- May 2, 1855** Pennsylvania and Lehigh Zinc Company was incorporated.
- May 4, 1892** T. L Willson of Spray, SC. synthesized acetylene.
- May 5, 1905** Proctor & Gamble Co. was incorporated.
- May 6, 1742** Jean Senebier, who showed that green plants in sunlight converted 'fixed air' (carbon dioxide) to 'dephlogisticated air' (oxygen), was born.
- May 7, 1871** Richard B. Moore, who advocated the use of helium for balloons and dirigibles, was born. He supervised the production of radium salts in the US.
- May 10, 1860** Robert Bunsen and Gustav R. Kirchhoff announced their discovery of cesium.
- May 12, 1910** Dorothy Crowfoot Hodgkin, who used X-rays to determine the structure of Vitamin B12, was born. She received the Nobel Prize in Chemistry in 1964 for her determinations by X-ray techniques of the structures of important biochemical substances.
- May 15, 1796** Edward Jenner inoculated a boy with cowpox virus.
- May 18, 1901** Vincent du Vigneaud, who studied sulfur-containing proteins, including insulin, was born. He researched trans-methylation and the metabolism of single carbon compounds. In 1955, he received the Nobel Prize for his work on biochemically important sulfur compounds, especially for the first synthesis of a polypeptide hormone.
- May 20, 1860** Eduard Buchner, who discovered alcoholic fermentation without yeast cells in 1896 and zymase in 1897, was born. In 1907, he was awarded the Nobel Prize in Chemistry for his biochemical researches and his discovery of cell-free fermentation.
- May 23, 1854** Edgar Fahs Smith, who was a researcher in electrochemistry and history of chemistry, was born. He served three times as President of ACS.
- May 26, 1865** Max Julius Louis Le Blanc, who did research on electrochemical polarization and the hydrogen electrode, was born.
- May 27, 1840** Lars F. Nilson, who discovered scandium in 1879, was born.
- May 28, 1887** Kasimir Fajans, who established the radioactive displacement law and initiated the concept of heat of hydration of gaseous ions, was born.

LEOPOLD MAY  
 Professor Emeritus of Chemistry  
 The Catholic University of America  
 Washington, DC

Additional historical events can be found at Dr. May's website, <http://faculty.cua.edu/may/Chemistrycalendar.htm>.

## IYC 2011

The International Year of Chemistry 2011 (IYC 2011) is a worldwide celebration of the achievements of chemistry and its contributions to the well-being of humankind.

Under the unifying theme "Chemistry—our life, our future," IYC 2011 will offer a range of interactive, entertaining, and educational activities for all ages.

The Year of Chemistry will extend across the globe with opportunities for public participation at the local, regional, and national level.

To keep in touch with the happenings of IYC 2011, go to [www.chemistry2011.org](http://www.chemistry2011.org) for the latest news, activities listings and ideas.

## NEW ACS PROFESSIONAL EDUCATION WEB SITE

Finding the training you need shouldn't be hard, so the ACS Office of Professional Education has dramatically revamped its web site and registration system – you'll be able to find the courses you're looking for in no time on the new site at <http://www.proed.acs.org>. You can now search our short courses, webcast courses, and ProSpectives Conferences by topic area, date, or location, and even browse our full instructor list. We are continuously investing in new course development, so if you don't see what you're looking for, just drop us a line at [short-courses@acs.org](mailto:short-courses@acs.org), and we'll do our best to serve your technical training needs.

## SUMMER SCIENCE CAMPS

From June 14 to July 30, the SciTech Hands-On Museum in downtown Aurora will offer 24 one-week camps for children, including the popular camps "Totally Ballistic!!" and "Kitchen Chemistry" as well as the new "Wild Weather Wonders" camp. The camp schedule and descriptions are available at [www.scitechmuseum.org](http://www.scitechmuseum.org). The cost per camp is \$225. Members receive a discount.

For more information and to sign up, call Joyce at 630-859-3434, ext. 214.

SciTech Hands On Museum  
 18 West Benton St  
 Aurora, IL 60506

# THE UN-COMFORT ZONE

With Robert Wilson

## Be a Copy Cat

Some of our goals require us to reach a mental threshold; some are more physical; while others are a combination of the two. One of my favorite forms of exercise and recreation is mountain biking. I get out once a week and hit the trails. Some of the trails have obstacle course-like obstructions called technical features; they are basically log and rock piles you ride over for an additional skill challenge. One trail has several advanced features including a seesaw. I rode past this particular challenge for weeks; wanting to do it, but frankly too scared to try.

Then one day I encountered another rider who rode across it. He went up to the center; it tipped and he rode down the other side. It looked easy enough, and so I asked him about it. He told me there was one trick to it. You needed to brake slightly when you hit the center, so that your weight would cause the 'up' end to tip down. If you didn't; it would function like a big ramp and you would fly off the end five feet off the ground. Hmm, good advice, because that was definitely what I didn't want to do.

Having seen someone do it; I was ready to tackle it. I rode across perfectly on the very first try. All I needed was to see it done.

We do this all the time -- sometimes consciously and sometimes unconsciously.

Last summer I was shopping at Dick's Sporting Goods in Atlanta where they have a three-story in-door climbing wall. My nine year old son was with me and asked to climb it. I bought him a ticket and the rock wall staff strapped him into the safety ropes. He went up about 12 feet and said he couldn't go any further. I was surprised because he is very athletic and picks up most sports immediately and effortlessly. I tried all sorts of encouragement, but he had made up his mind. The staff lowered him to the ground.

Then he asked me to climb it. I looked up and grimaced... it was not what I wanted to do that day, but I had done it once before with my older son, so I paid my way and started to climb. I climbed to the top and rang the bell, then enjoyed the real fun of repelling back down. Once I was down, my son wanted to try it again. I was skeptical and didn't want to waste another two bucks. But, I

gave in, and this time he scrambled like a lizard all the way to the top and rang the bell. Just like me and the bicycle seesaw, all he needed was to see that it could be done. Then he was on his way. Of course I'm totally refusing to acknowledge the unstated thought in his mind... "Hey, if my wimpy Daddy can do it -- it's gotta be easy!"

Think of the occasions where you found a role model to show you "how it's done."

I remember the night I decided to become a professional speaker. I was serving as a counselor to a group of teenagers attending a Hugh O'Brian Youth Foundation leadership seminar. Patty Kitching was the dinner keynote speaker. She was warm and funny and told wonderful stories to illustrate her points. Most of all she looked like she was having the time of her life. I turned to my wife and said, "I could do that. I want to do that!" Three years later, I was.

Go out and find someone who is already doing what you want to do. Watch them, talk to them, then get started!

--

Robert Evans Wilson, Jr. is a motivational speaker and humorist. He works with companies that want to be more competitive and with people who want to think like innovators. For more information on Robert's programs please visit [www.jumpstartyourmeeting.com](http://www.jumpstartyourmeeting.com).

## ARE YOU UNEMPLOYED?

Are you seeking a better job? Are you looking to improve your career? The place to start is with your resume. That is the single tool that will get you an interview, illustrate your professional strengths, and show how you can improve your importance to your employer.

You can get help improving your resume through the Career Consultants. These are volunteers trained by the American Chemical Society to assist its members with writing resumes, contacting prospective employers, and providing tips on interviews.

There are several Career Consultants in the Chicago Section who are willing to meet with you and help improve your resume. Simply call the Section office at 847-391-9091 and set up an appointment. Fifteen to thirty-minute sessions will be arranged at our monthly meetings. Should you require more time arrangements can be made with your consultant to continue discussions by telephone, by e-mail or by additional face-to-face sessions. You also can attend the Section's Job Club where you can network with other people having similar concerns.

We are here to help. All you need to do is pick up the telephone and bring copies of your resume to the next monthly meeting.



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Micron Inc.	10	302-998-1184	<a href="http://www.micronanalytical.com">www.micronanalytical.com</a>

# CALENDAR

**May 3-6:** The 2010 BIO International Convention, a global event for biotechnology, will be held in Chicago at McCormick Place. For information on the program, please visit <http://convention.bio.org>.

**May 6:** Chicago Section ACS Board meeting, 1400 Renaissance Dr., Suite 312, Park Ridge, IL 60068; 847-391-9091.

**May 10-14:** Chicago Chromatography Discussion Group: Introductory Course in Gas Chromatography, Roosevelt University, 1651 McConnor Parkway, Schaumburg. Go to [www.ccdg.org](http://www.ccdg.org) for details. **Deadline for registration is May 3.**

**May 14:** Chicago Section ACS Gibbs Award Banquet and Lecture. The medalist is Dr. Maurice Brookhart, University of North Carolina. **See details in this issue.**

**May 19:** The Catalysis Club of Chicago will have its 2010 Spring Symposium at the BP Research Center in Naperville, IL. For further information, contact Siddhesh Shevade, Program Chair, at [siddhesh.shevade@bp.com](mailto:siddhesh.shevade@bp.com)

**June 10:** Chicago Section Board meeting, 1400 Renaissance Dr., Suite 312, Park Ridge, IL 60068; 847-391-9091.

**June 14-July 30:** Summer Science Camps at the SciTech Hands-On Museum in downtown Aurora. Camp schedule and descriptions are at [www.scitechmuseum.org](http://www.scitechmuseum.org). For more information and to sign up, call Joyce at 630-859-3434, ext. 214. The SciTech Museum is located at 18 West Benton St., Aurora, IL 60506.

**June 17:** Chicago Section ACS Distinguished Service Award and 50 & 60-year member awards presentations. The speaker is Joe Alpert.

**August 5:** Chicago Section Board meeting, 1400 Renaissance Dr., Suite 312, Park Ridge, IL 60068; 847-391-9091.

**August 13-22: ACS Illinois Sections' cooperative tent project at the Illinois State Fair in Springfield.** For further information on this fun and worthwhile outreach activity, contact the section office at (847) 391-9091. Also, visit website <http://chicagoacs.org/statefair/index.html>

**August 22-26:** ACS National Meeting in Boston, MA.

**September 24:** Chicago Section ACS Dinner Meeting. This is Education Night at Loyola University.

**October 22:** Basolo Medal Award Lecture, Dinner, and Presentation; joint Chicago Section ACS's meeting with Northwestern University's Department of Chemistry. The Basolo Medal Awardee is Roald Hoffman.

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## 2010 GIBBS DINNER RESERVATION FORM

Name \_\_\_\_\_ Affiliation \_\_\_\_\_

Address \_\_\_\_\_ Phone (     ) \_\_\_\_\_

Email Address \_\_\_\_\_

# tickets for ACS members & guests \_\_\_\_\_ (\$40.00/ticket)

# tickets for students, unemployed members, and retirees who are Chicago Section members (\$20.00/ticket) \_\_\_\_\_

Note: Professors must make student reservations.

# dinners: Chicken Wellington with Sherried Duxelle Mushroom Cream Sauce \_\_\_\_\_

Baked Salmon with Dill Sauce \_\_\_\_\_

Eggplant Parmagiana \_\_\_\_\_

Total Enclosed \$ \_\_\_\_\_ Payable at time of reservation, if reservation is made by mail. Please include a list of your guests' names, affiliations and dinner selections with this form.

**Return with payment to: American Chemical Society, Gibbs Reservations  
1400 Renaissance Drive, Suite 312, Park Ridge, IL 60068**