

# The Chemical Bulletin

<http://chicagoacs.org>

JANUARY • 2013

## CHICAGO SECTION AMERICAN CHEMICAL SOCIETY Joint Meeting with the American Institute of Chemical Engineers THURSDAY, JANUARY 17, 2013

European Crystal Banquet & Conference Center  
Parlor BC  
519 W. Algonquin Road  
Arlington Heights, IL 60005  
847-437-5590

### DIRECTIONS TO THE MEETING

#### From Chicago:

Take I-90 West. Exit at Arlington Heights Road and turn right (north). Go to the first stoplight, which is Algonquin Road. Turn left onto Algonquin and go ½ mile to European Crystal.

#### From Northern Indiana and South Suburbs:

Take I-294 North to I-90 West. Exit at Arlington Heights Road and turn right (north). Then follow the directions given above.

#### From I-290/I-355 or Route 53:

Northbound I-290 & I-355 merge with Route 53. Take these combined roads to Higgins Road exit. Merge onto East Frontage Road and turn right onto Golf Road. Go 2 miles and turn right onto Algonquin Road. Go 1/3 mile to European Crystal.

**PARKING:** Free

**PRE-DINNER TALK**

5:30 – 6:15 P.M.

**JOB CLUB**

5:00 - 6:00 P.M.

**RECEPTION: Cash Bar**

5:30- 6:30 P.M.

**DINNER (see page 2)**

6:30 P.M.

GENERAL MEETING

7:30 P.M.



**Dr. Joseph A. Kocal**, Corporate Fellow, Performance Materials and Applications, Honeywell-UOP

**Topic: Ionic Liquids: Status After 15 Years of R&D**

**Abstract:** Ionic liquids (ILs) are ionic compounds which are liquid below 100°C (by definition). Many are liquids at room temperature (RTILs). These novel materials are composed of a bulky organic cation and a smaller anion. The size mismatch leads to the low melting points relative to typical ionic compounds such as NaCl. ILs have experienced a comet-like boost in the last 15 years because of their attractive properties,

*(continued on page 2)*

### IN THIS ISSUE

2	Dinner Information	6	ACS-GREET
2	Help Wanted	7	Project SEED 2013
3	ChemShorts for Kids	7	Research Space Available
3	ACS Scholars Program	7	Ad Index
4	ACS and AIChE	8	The Un-Comfort Zone
5	Chicago's Specialty Chemical Co.- Stepan	8	Job Club
		8	Calendar

*(continued from page 1)*

such as low vapor pressure, good solvency, high ionic conductivity, and heat transfer properties. The properties are adjustable by via compositional variation. Considerable R&D has been conducted using ILs as catalysts, electrolytes, heat transfer media, green solvents, gas absorbents, and solvent extractants. In the laboratory, ILs have shown promise for many applications, however only a few demonstration and commercial applications are known today. The development of ILs will be discussed including possible reasons why more applications have not been commercialized.

**Biography:** Dr. Kocal joined UOP in 1981 after earning a Ph.D. in inorganic chemistry from the University of Wisconsin. He has developed catalyst and process technology in the areas of fuels and chemicals which has led to 52 patents and numerous publications. He has been principal investigator on teams leading to the commercialization of numerous processes including production of detergents via alkylation of benzene with n-C10 to n-C14 olefins using a heterogeneous catalyst to replace hazardous HF acid. A different heterogeneous catalyst was developed for isoparaffin alkylation with light olefins for motor fuel gasoline. Dr. Kocal was technical leader of UOP's exploratory research group of which a key objective was to develop economical technology for conversion of natural gas to chemicals and fuels. He was principal author and principal investigator (PI) of the 3-year ATP-NIST funded program for conversion of methane to methanol. More recently, Dr. Kocal has worked with a team to develop technology for the utilization of renewable resources. He was principal author and PI of several DARPA and DOE programs for the conversion of biomass to fuels. Currently, he is scouting potential new technologies to be implemented within Honeywell.

## PROFESSIONAL EDUCATION & TRAINING

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Sci-Mind™, the newest training product from the ACS Department of Professional Education, is a revolutionary and innovative learning community designed to challenge chemists to continuously invest in their professional scientific development. It combines the best aspects of social networking, knowledge sharing, and blended learning to offer professional scientists an interactive and engaging environment that meets their professional training needs.

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The next cohort in Separation Science begins **January 28, 2013**, and the next Toxicology for the Scientists cohort starts **February 18, 2013**. For more information, visit [www.ProEd.acs.org](http://www.ProEd.acs.org).

## DINNER INFORMATION

Dinner reservations are required and should be received in the Section Office via **phone** (847-391-9091), **email** ([chicagoacs@ameritech.net](mailto:chicagoacs@ameritech.net)) or **website** (<http://chicagoacs.org>) by noon on Monday, January 14.

The cost is \$35 to Section members who have paid their local Section dues, members' families, and visiting ACS members. The cost to members who have NOT paid their local section dues and to non-members is \$37. The cost to students and unemployed members is \$20. 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.**

**Menu:** Entrée choice of Brochette of Beef on Bed of Rice with Three-Peppercorn Sauce, White Fish with Rice Pilaf, or Vegetarian (Sautéed vegetables in phyllo with vegetable puree); dinner includes vegetable medley of broccoli, baby carrots & rutabaga, rolls and butter, beverage. Dessert is Apple Crumb Cake.

### WANT TO REACH CHEMISTS AND CHEMICAL ENGINEERS? ...

### FOR SALES? ... FOR EMPLOYMENT? ... FOR ATTENTION? ...

Contact the Section office at 847-391-9091 or email at [chicagoacs@ameritech.net](mailto:chicagoacs@ameritech.net) about advertising your business.

## HELP WANTED

### Analytical Chemist

**HNC Products Inc., an international R&D and Custom dermatology products manufacturing company centrally located on a 15 Acres campus, outside of Clinton, IL, is looking for an experienced Analytical Chemist to join their Q.C./Q.A. group.**

**Ideal candidate should have a B.S or M.S in chemistry or bio-chemistry and several years of analytical assay experience working with nutraceuticals, cosmeceuticals and OTC actives. The candidate should be very strong in method developments, testing methods and challenges. This hands-on position requires GLP and cGMP guidelines knowledge using HPLC, GC, FT-IRs and other testing instruments. Please forward your resume to:**

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Clinton, IL 61727  
Fax-217-935-8938  
E-mail: [cspotini@yahoo.com](mailto:cspotini@yahoo.com)

**No Phone Calls please.**

## WCC COLUMN - AUTHORS NEEDED

Members of the Chicago Section's Women Chemists Committee (WCC) outreach plans for the Chicago-area section members and the community include a column in The Chemical Bulletin covering topics such as networking, career development, and vignettes of women in chemistry.

Please consider writing an article about a woman, who is living or dead, by interview or research on the web, or write an article on a topic of interest to women. Both women and men are welcome to join WCC in this activity.

Please make the article around 500 words long and include a photo if possible. Many of the previous articles have been shown as posters at various ACS Chicago Section and National ACS functions with great success. Thank you to everyone who has participated in this WCC effort.

MARGY LEVENBERG  
TERI COLLINS  
WCC CO-CHAIRS

## "CHEM SHORTS" For Kids

The Elementary Education Committee of the Chicago Section ACS presents this column and hopes it will reach young children and help increase their interest in science. 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.

### Crystal Snowflake Ornaments

Kids, learn how to cover a paper snowflake with crystals to make a glittering crystal snowflake decoration! You will crystallize borax onto homemade paper snowflakes, in any size you like. You will need: round paper coffee filters, borax, water, scissors, and food coloring (optional).

1. Cut a paper snowflake (or other shape) from the coffee filter. Go to this link <http://chemistry.about.com/b/2008/12/21/cut-out-science-decorations.htm> for actual snowflake paper cut-out shapes.
2. Have an adult partner prepare your crystal solution by stirring 3 tablespoons of borax into 1 cup of very hot water. It's okay if there is a little undissolved borax. Add a drop of food coloring, if you want colored snowflake ornaments.
3. Place the paper snowflake onto a plate or saucer. Have your adult partner carefully pour the crystal solution over the snowflake, making sure it is completely covered. Try to leave any undissolved borax behind in the cup.
4. Allow crystals to grow on the snowflake as the solution cools until you are satisfied with their size. Small crystals take about an hour to form. You can allow the crystals to grow overnight if you want larger crystals.
5. Pour off the crystal solution and carefully dislodge the crystal snowflake from the plate. This is best done with a fingernail or butter knife. You can remove any crystals that are stuck in the holes of the snowflake.
6. Allow the crystal snowflake to fully dry before removing it and hanging it up.

Borax is a natural mineral with a chemical formula  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$ . The formal name for borax is sodium tetraborate decahydrate, but it's more commonly known as sodium borate. It is one of the most important boron compounds. Borax is found in laundry booster, certain hand soaps and in some toothpastes. You can find it as 20 Mule Team Borax (pure borax) in the laundry detergent aisle of stores.

Borax has many uses on its own, plus it is an ingredient in other products such as the following: buffer solutions, flame retardants, teeth bleaching products, glass, ceramics and pottery, and enamel glazes.

#### Reference:

Anne Marie Helmenstine at About.com: Chemistry  
<http://chemistry.about.com/od/holidayhowtos/a/Crystal-Snowflake-Ornaments.htm>

Submitted by DR. KATHLEEN CARRADO GREGAR

To view all past "ChemShorts for Kids," go to:  
<http://www.chicagoacs.net/ChmShort/kidindex.html>

### 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.

### 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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## ACS SCHOLARS ACCEPTING NEXT ROUND OF APPLICATIONS

The ACS Scholars Program is now accepting online applications for awards beginning with the 2013-2014 academic year. The program is targeted at minority groups considered by NSF to be under-represented in the sciences. It is open to graduating high school seniors, college freshmen, sophomores and juniors majoring in a chemical science. Go to [www.acs.org/scholars](http://www.acs.org/scholars) for complete information and the link to the application. Potential applicants can also call 202-872-6250 or send an email to [scholars@acs.org](mailto:scholars@acs.org). The application deadline is March 1, 2013.

### 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!

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## INTERACTION BETWEEN ACS AND AIChE

The following is a condensed version of an article written in 2005 by Ressano De Souza-Machado when he was a member of the subcommittee on local section alliances of the ACS Local Section Activities Committee.

At the 227th ACS meeting in Anaheim, CA, held in March 2004, ACS Councilors were briefed on the status of partnership efforts that had been initiated between the ACS and AIChE, (American Institute of Chemical Engineers). The ACS and AIChE had begun exploring programmatic, membership and operational alliances that would more fully serve the needs of their members and the chemical enterprise, while enhancing both organizations' abilities to achieve their missions.

The ACS has about 160,000 members\* and a \$400m annual budget, whereas the AIChE has about 45,000 members\* with a \$20m budget. About 8,000 members of the ACS are common to AIChE. While no merger or acquisition is planned, the two organizations have pledged to work collectively and cooperatively for the long term in several areas. In one such area, then Board-Chair James Burke reported that both organizations could strive to enhance the chemical sciences by more frequent co-programming at local, divisional, regional, and national events.

Chemistry is now the central science where scientists and engineers associating themselves to other disciplines now work at the molecular level. The boundaries between traditional disciplines have become blurred, and multi-disciplinary approaches are likely to be the means to scientific advances and breakthroughs.

What does this all mean for us? The typical involvement of an ACS member does not extend much beyond the local section. Nevertheless, that involvement does carry a responsibility. We are the ones that can demand programming at the local section level that may involve AIChE thus meeting the goals of the national ACS. If there is no AIChE section nearby, perhaps an interaction involving the ACS and some other scientific organization is in order! After all, if multi-disciplinarity is the goal of the day, why not foster the approach at the local section level? The end result could be rewarding for all participants, even to the point of the ACS increasing its membership and generating further amicable interactions and collaborations between scientists and engineers.

\* in 2005

## CHICAGO'S SPECIALTY CHEMICAL COMPANY PIONEERS (PART 5)

by Edward A. Knaggs

This historical series about some of the individual chemists in Chicago who successfully established new specialty chemical businesses during 1920-1940 concludes with this article.

### Stepan Chemical Company (1931)

Alfred C. Stepan, Jr. was well steeped in the chemical business since his father worked his way up to become a senior executive at New York's Roessler & Hasslacher Co., a German chemical firm later bought by DuPont in 1930. Alfred Stepan Jr. graduated from Notre Dame University in economics (disappointing his father). He dabbled in law at Northwestern, and took a few chemistry courses at Armour Institute in Chicago (43).

In June of 1932, at age 23, on learning of Dow's success treating some unpaved dusty Michigan roads with calcium chloride, borrowing \$500 from his mother, he arranged a consigned shipment to Barrington, IL where he went door-to-door, and was successful in treating their dusty roads. In September 1932, he rented desk space at the North Pier Terminal Co. located at North Avenue and the Chicago River. Calling his company "Chemical Distributors" he started "jobbing" chemicals such as methyl chloride, sulfur dioxide and Freon™ refrigerants, and sold carbon tetrachloride for dry cleaning (43).

Chemical Distributors rented space across the street at 1265 W. North Avenue in 1935, installed a kettle and started "sulfonating" vegetable and fish oils to make and market non-foaming shampoos and hide tanning agents. When Procter & Gamble acquired the property in 1936 Stepan looked for and found a building at 1353 N. Branch Street on Goose Island. The sign on the building read "Religious Statuary Company," a front for Capone's illicit bootlegging operations which had been under lock and key and a Federal Judge's control. Stepan purchased the property through the Federal Government and soon resumed "sulfonation" operations there, supplying shampoo ingredients to American Beauty Products, Marrow Oil, Lucky Tiger and Fitch, who preferred a local producer rather than by importing. In 1940 the company name was changed to Stepan Chemical Company. With the advent of World War II, Stepan developed and marketed their pH6 hand cleanser to the

U.S. Navy and for use by war plant workers (43).

Stepan's first big break came in 1947 due to Al Stepan's aggressive sale visits, this time at Lever Brother's Cambridge, MA office, finding that Lever was looking for a midwest sulfonater to supply detergent alkylate sulfonate slurry to their Hammond, IN plant. Stepan got the contract, expanded the plant and completed the contract.

When high foaming shampoos started to be marketed based on sodium lauryl sulfate, Stepan obtained an American Hyalsol license to produce it using chlorosulfonic acid. Stepan was soon supplying lauryl sulfate to Toni, White Rain, Luster Cream, Warner Lambert, Colgate, etc.

Stepan had outgrown their Goose Island plant by 1951, bought 10 acres of land and moved to 3250 S. Kedzie Avenue, where they resumed detergent production, installed a liquid detergent packaging operation packaging Lever's Liquid Lux, etc. In 1954, when Lever's contract expired, since it represented 85% of Stepan's business, they were in big trouble, requiring a reassessment of their business plans and strategy. First off, Stepan concluded that their Kedzie Avenue plant wasn't the location for industrial chemical manufacturing. In 1954 Stepan purchased 150 acres (later increased to 380 acres) of land (called Millsdale) near Joliet, IL, on the Des Plaines River connecting to the Illinois waterway and to the Mississippi River for their main chemical manufacturing site.

Stepan became convinced that they could play a major and dominant role in the rapidly growing liquid detergent market by vertically integrating (making their own chemical feedstocks where feasible), by diversification, and by acquisition (43). Accordingly, Stepan proceeded to heavily invest and install manufacturing equipment and facilities at Millsdale in order to make their own raw materials, one after another.

In 1956 Stepan acquired a plant site in Los Angeles for their oleum sulfonation detergent operations. Stepan sales were

\$7.1 million. Emulsol had been Stepan's major competitor in Chicago, and was bought by Witco Chemical Company in 1955, whose combined sales were \$35 million making them a most formidable competitor. Stepan bought Ninol Laboratories during 1957 who marketed a large number of surfactant products to many customers in numerous markets. Stepan's combined sales in 1957 were \$12 million. Ninol had developed considerable expertise in SO<sub>3</sub> sulfonation, including a process for continuous SO<sub>3</sub> sulfonation, yet to be commercialized.

In 1959 Stepan purchased Maywood Chemical Works of Maywood, NJ, maker of lithium and rare earth chemicals, protein based skin cleansers, flavors, aromas, etc. They also acquired General Aromatic Products of Skokie, IL. During 1959 all of the Kedzie Ave. production and research operations were shut down. Stepan moved their administrative offices and their research operations to Northfield, IL during 1960. Ninol's 103rd Street plant was shut down and their production was moved to Millsdale, where its continuous SO<sub>3</sub> sulfonation unit was soon used to more economically produce Stepan's sulfated and sulfonated products, and SO<sub>3</sub> process patents were filed. Stepan Chemical Company shares were publically offered in 1961.

A decision was made in 1961 to produce phthalic anhydride used in the rapidly developing plastics market, licensing von Heyden's catalytic process. Stepan was able to switch catalysts from naphthalene feed stock to von Heyden's new orthoxylene feed stock catalyst, whereas competitor Witco was stuck with the naphthalene catalyst and the more expensive process causing Witco to eventually shut down both their Chicago and their Perth Amboy, NJ plants (43).

Stepan seized upon an opportunity buying the Fieldsboro, NJ bankrupt Bzura's molasses citric acid fermentation plant in 1964, but was unable to rectify their production problems, and converted the Fieldsboro site to a detergent facility, installing a large continuous SO<sub>3</sub> sulfona-

(continued on page 6)



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(continued from page 5)

tion unit to supply east coast customers. Stepan was well prepared and pre-empted the detergent industry's switch to biodegradable detergents (44-50), and were opportunistic in being able to use their new continuous SO<sub>3</sub> sulfonation plants to economically produce alcohol ether sulfates (replacing non-degradable nonylphenolether sulfates) for the major detergent companies, etc.

In 1965, Stepan looked for other growth opportunities and acquired Chevron's specialty alkyd resin and polyester business and plant at Anaheim, CA, consolidating their detergent operations and installing a continuous SO<sub>3</sub> sulfonation unit there. National Polychemicals Ltd. of Wilmington, MA, makers of specialty chemical additives for the rubber and plastics markets, was purchased by Stepan. Stepan's interest in polyurethanes resulted in the purchase of Diamond-Shamrock's Nopco Polyurethane Division foam systems in 1972.

Stepan expanded their Northfield, IL research facilities during 1968. Al Stepan's son, F. Quinn Stepan became president and CEO in 1973 with the father becoming chairman of the board. Westvaco's Winder, GA specialty surfactant business and plant site were acquired by Stepan in 1985, and their continuous SO<sub>3</sub> sulfonation unit was upgraded. Stepan successfully prosecuted a continuous SO<sub>3</sub> process patent infringement suit in 1970, solidifying their dominant position in the sulfonation field (42, 52), becoming the world's largest sulfonator.

Quinn Stepan guided and accelerated the company's growth based on building on its core technologies in surfactants, urethanes and polymers with strong technical support and through acquisitions (53). He guided the company's globalization endeavors, establishing marketing and manufacturing operations in Canada, Mexico, Central and South America, with four European plants and three Asian locations. In 1995, F.Q. Stepan Jr. (a third generation Stepan) was appointed company president while his father remained chairman of the board. By the year 2000, sales had grown to about \$700 million, and in 2005 sales had increased to about \$1.1 billion (53).

This is a very impressive success story started by another chemical pioneer in Chicago.

(42) Knaggs, E. A., "Development of Continuous Falling Film SO<sub>3</sub> Sulfonation Technology," *Chemtech*, 1992, 22, 436-448.

(43) Stepan, A.C. Jr., "Stepan Chemical Company-A Chronicle of Its Founding and Development-1932-1972"; Ste-

pan Chemical Company, November 29, 1973.

(44) Knaggs, E. A., "Review of Detergent Water Pollution Problems and Biodegradable Detergents"; Stepan Chemical Company Report, November 9, 1962.

(45) Knaggs, E. A., "Light Duty Biodegradable Detergent Studies"; Stepan Chemical Company Report, August 1, 1963.

(46) Knaggs, E. A., "Light Duty Biodegradable Detergent Studies"; Stepan Chemical Company Report, December 1, 1963.

(47) Knaggs, E. A.; Fischer, E.; Yeager, J., "Biodegradable Detergents Developments; Technical Bulletin IIG"; Stepan Chemical Company, May 15, 1963.

(48) Knaggs, E. A.; Varenyi, L.; Yeager, J.; Fischer, E., "Alpha Sulfo Fatty Esters in Biologically Soft Detergent Formulations"; *J. A.O.C.S.* 1965, 42, 805-810.

(49) Knaggs, E. A., "The Detergent Dilemma," *Inter. Sci. Tech.* 1965, 41, 27-32.

(50) Knaggs, E. A., "Alkylolamides in "Soft" Detergents"; *Soap Chem. Spec.* 1964, 40, 79-82, 277 ; 1965, 41, 64-75.

(51) Knaggs, E. A.; Nussbaum, M. L. *U.S. Patent* 3,169,142, February 9, 1965.

(52) Federal District Court of California, Los Angeles, Judge D.W. Williams, Action 66-1259 DWW 1966; verdict rendered in October 1970.

(53) Donohue, J., "Building On Core Technology Is Key to Stepan Growth"; *Soap Cos. Chem. Spec.* 1987, 63, 34-35.

(54) Stepan Company History, <http://www.stepan.com> (accessed February 2012)

(55) Sandburg, C., *Chicago Poems*, Henry Holt, New York, 1916.

#### Reflections

These visionary risk-taking chemical pioneers and entrepreneurs toiled in Carl Sandburg's Chicago, a "stormy, husky, brawling city of broad shoulders"

(55), each finding a niche, creating new products, new processes, new markets, new companies, new jobs, new profits, developing new technologies, all contributing to Chicago's and the world's economies, and to the betterment of mankind. They each identified a market need and worked to fulfill that need, exemplifying the entrepreneur's mantra: "to satisfy the customer."

As noted in this historical documentary, each of these chemical pioneers, established and successfully grew their businesses. Some found it necessary to alter their company mission; some decided to eventually leave things for their successor to take over, while others took the merger route. The challenge of sustaining and improving corporate growth and profits (balancing growth by inter-

nal R&D innovation, diversification and acquisition) requires continuing strong decisive visionary leadership, constantly focusing and fine tuning the corporate mission. Also of equal importance are evaluating opportunities vs. risks, being willing to share responsibility and reward with key managers, overseeing and updating business plans, and utilizing capital judiciously, all in an ever increasingly competitive global business environment.

So Chicago spawned a lot more than Al Capone in the 1920's, '30's, and '40's, and the world is a better place due to these chemical pioneers' hard work and their successes.

EDWARD A. KNAGGS

### SECTION MEETING DATES 2013

Thursday, January 17  
Thursday, February 28  
Friday, March 22  
Thursday, April 18  
Friday, May 17  
Thursday, June 27  
Friday, September 27  
Friday, October xx (TBD)  
Friday, November 22  
Friday, December 13

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### CHEMICAL LANDMARKS AT LAND-GRANT UNIVERSITIES: NOYES LAB AT UIUC

Noyes Laboratory at the University of Illinois at Urbana-Champaign occupies a central place in the development of chemical sciences in the United States. Generations of scientists and engineers trained there under the leadership of renowned chemists such as William A. Noyes, founding editor of *Chemical Abstracts* and past editor-in-chief of the *Journal of the American Chemical Society*, and Roger Adams. ACS designated Noyes Laboratory as a National Historic Chemical Landmark in 2002. This year marks the 150th anniversary of the Morrill Land-Grant Act and 20th anniversary of the Landmarks program. Learn more online at [www.acs.org/landmarks](http://www.acs.org/landmarks).

## PROJECT SEED 2013

Applications are now being accepted to participate in the 2013 ACS Project SEED Program. The Project SEED Program places economically disadvantaged high school students in academic, industrial, and governmental research laboratories during the summer. Under the supervision of volunteer scientists, students work on projects that expose them to the chemistry environment.

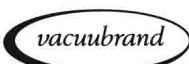
For additional information, visit the Project SEED website at [www.acs.org/projectseed](http://www.acs.org/projectseed). The application deadline is January 31, 2013. If you have any questions, please e-mail [projectseed@acs.org](mailto:projectseed@acs.org), call (800) 227-5558, ext. 4380 or contact Tracy Braun, our section's Project SEED chair, at [tracy.braun@gmail.com](mailto:tracy.braun@gmail.com).

## RESEARCH SPACE AVAILABLE

Two offices and a lab are available for rent in Lake Villa. The following equipment is available: chemical hood, biochemical hood, rotary evaporator (with bath and water aspirator), vacuum pumps, air compressor, spectrometer, hydrogenator, manometers, centrifuges, drying ovens, refrigerator, freezer, chromatography supplies, eppendorf pipettes, gases (nitrogen, oxygen, hydrogen) with regulators, assorted glassware, and miscellaneous lab supplies. For more information or to schedule a viewing, call Neil at (847) 549-0104.


## SAFETY CULTURES IN ACADEMIC INSTITUTIONS

The Safety Culture Task Force of the ACS Committee on Chemical Safety (CCS) has published a 57-page report entitled *Creating Safety Cultures in Academic Institutions*. This report includes discussion of common issues with respect to the safety culture in colleges and universities. Several recommendations are made. Appendices list suggested duties of institutional personnel and chemistry-based technicians. The references (called Endnotes in the report) are a timely listing of resources for those working in academic safety areas. An electronic version of the report can be downloaded from the CCS website, [www.acs.org/safety](http://www.acs.org/safety). A printed copy can be obtained from the ACS National Office, 1155 Sixteenth St. NW, Washington DC 20036.



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## THE CHEMICAL BULLETIN ADVERTISING RATE SCHEDULE

The official newsletter of the Chicago Section American Chemical Society, The Chemical Bulletin, publishes news and information of interest to the Section's 4,546 members, who are professional chemists and others in related professions in industry, academia and government throughout greater Chicago.

SIZE	DIMENSIONS	RATE
Full Page	7.5" wide x 10" depth	\$700
2/3 Page (2 columns)	4.917" wide x 10" depth	\$530
1/2 Page	3.75" wide x 10" depth	\$500
1/3 Page (1 column)	2.333" wide x 10" depth	\$360
1/2 Column	2.333" wide x 5" depth	\$190
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## CALENDAR

**January 17, 2013:** Chicago Section ACS Dinner Meeting held jointly with AIChE. This is a Thursday meeting. **See details in this issue.**

**January 26:** STEMfair at the Barrington Station Middle School. This Science, Technology, Engineering, and Math event will be from 10 am – 3 pm.

**February 28:** Chicago Section ACS Dinner Meeting at the Parthenon Restaurant. This is a Thursday meeting.

**March 17-21:** Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (Pittcon 2013), Pennsylvania Convention Center, Philadelphia, PA. For additional information, visit the Pittcon website at <http://pittcon.org/>.

**March 22:** Chicago Section ACS Public Affairs Dinner Meeting.

**April 7-11:** 245th ACS National Meeting & Exposition, New Orleans, Louisiana

**April 18:** Chicago Section ACS Dinner Meeting

**May 17:** Chicago Section ACS Willard Gibbs Award Banquet

**June 5-8: 2013** ACS Great Lakes Regional Meeting (GLRM 2013) in La Crosse, Wisconsin. Registration opens in mid-January; <http://glrm-lax.sites.acs.org/>



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## THE UN-COMFORT ZONE

with Robert Wilson

What's The Worst That Can Happen?

"Who wants to give their oral report first?" Asked Mrs. Davis, my sixth grade teacher.

The dreaded day had finally arrived when each of us would have to stand in front of the room and speak to the class. The butterflies in my stomach were flapping a tornado.

Not a single hand went up. In fact, there was no movement in the room at all. There wasn't a desk creaking under the shifting weight of a single body, no paper rustling, no pencils scratching, not even a cough. Nothing. The room had never been quieter. Every kid was sitting as still as a statue. The anxiety in the classroom was palpable.

"If someone doesn't volunteer, then I will start picking you at random."

Every student suddenly wished for invisibility. I saw a few heads bow in the hopes of achieving it. But, mostly I saw wide-eyed fright - the deer in the headlights look - predominate the room...

To read the entire article go to:

<http://www.jumpstartyourmeeting.com/articles/TUZ/36-whatstheworstthatcan.shtml>

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Robert Evans Wilson, Jr. is an author, humorist and innovation consultant. He works with companies that want to be more competitive and with people who want to think like innovators. Robert is also the author of the humorous children's book: *The Annoying Ghost Kid*. For more information on Robert, please visit <http://www.jumpstartyourmeeting.com>

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## JOB CLUB

The next meeting of the **Chicago Section ACS Job Club** will be held on **Thursday, January 17 at 5:00 p.m.** at the European Crystal Banquet & Conference Center. The meeting will include a review and discussion of some of the tools that a chemist can use to conduct a job search.

The Job Club provides a continuing opportunity for unemployed members of the Section to meet with one another, share their experiences and develop a network that may help in identifying employment opportunities. Bring plenty of resumes and business cards to distribute to your colleagues. Be prepared to talk about the kind of job you are seeking.

Several participants have received outsource help with resume preparation and marketing strategies to present their best attributes to prospective employers. The group has 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's dinner meeting following the Job Club, the cost is \$20 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. If you can't attend the Job Club, you can still find out about job openings and other information.

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