

theCHEMICALbulletin

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MARCH • 2002

CHICAGO SECTION AMERICAN CHEMICAL SOCIETY

Regular Monthly Meeting

FRIDAY, MARCH 22, 2002

Chicago Marriott O'Hare
8535 West Higgins Road
Chicago, IL
773-693-4444

DIRECTIONS TO THE MEETING

From Downtown Chicago: Take the Kennedy Expressway (I-90 West) towards O'Hare. Exit at Cumberland Ave. North (79B). Turn left at the stop sign-Higgins Road. Remain on Higgins Road. The Hotel is past the first traffic light 0.5 block on the left side.

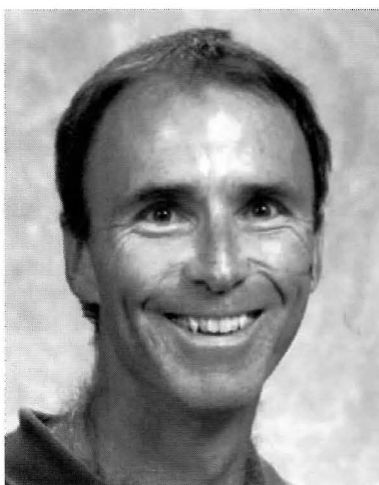
From the West: Take the Northwest Tollway (I-90 East) past O'Hare International Airport. Exit at Cumberland Ave. North (79B). Turn right at the end of the ramp and go over the expressway. Turn left at the first stoplight-Higgins Road. The Marriott is 0.5 block on the left side.

From the North: Take the Tri-Sate (I-294 South) to I-90 East (toward Chicago, NOT O'Hare). Exit at Cumberland Ave. North (79B). Turn right at the end of the ramp and go over the expressway. Turn left at the first stoplight-Higgins Road. The Marriott is 0.5 block on the left side.

From the South: Take the Tri-Sate (I-294 North) to I-90 East (toward Chicago, NOT O'Hare). Exit at Cumberland Ave. North (79B). Turn right at the end of the ramp and go over the expressway. Turn left at the first stoplight-Higgins Road. The Marriott is 0.5 block on the left side.

PARKING: Free self-parking available. Valet parking is also available for a charge.

TOPICAL GROUP 5:30 - 6:30 PM



"Catalyzed Organic Reactions in Ionic Liquids" by Dr. William M. Nelson, Process Evaluation Chemist, Illinois Dept. of Natural Resources-Waste Management & Research Center, Champaign, IL.

Abstract: The chemical industry is under considerable pressure to replace many of the volatile organic compounds (VOCs) that are currently used as solvents in organic synthesis. This is an important driving force in the quest for novel reaction media. Green chemistry principles provide the guidelines (in broad terms) for chemists engaged in organic synthesis. The key to waste minimization in chemistry is the widespread substitution of classical 'stoichiometric' syntheses by atom efficient, catalytic alternatives. Examples will illustrate two ways in which catalyzed organic reactions in ionic liquids exemplify green chemistry. Firstly, they yield significant rate enhancement and high yield/selectivity. This can be demonstrated across a broad range of reactions. Secondly, they can improve the "greenness" of the syntheses: less energy expenditure, improved atom-economy, reduced sol-

vent distribution into environment, and reduced environmental absorption. The range of reaction types run in ionic liquids will include name organic reactions (e.g., Diels-Alder and Friedel-Crafts) and general organic transformations e.g., (benzoylation, epoxide opening, arylations, and coupling).

Biography: Since June 1995 Dr. Nelson has been the Process Evaluation Chemist at the Waste Management and Research Center (WMRC) in Champaign, Illinois. In this capacity he directs the Alternative Cleaning Technologies Laboratory (ACTL) and the Alternative Chemical Process Laboratory (ACPL). The work in both labs focuses on the evaluation, design and implementation of cleaning and chemical processes, which will lead to pollution prevention. In addition, he is a Visiting Research Scientist in Chemistry at the University of Illinois. Dr. Nelson received a BS in chemistry from the University of North Carolina, Chapel Hill, an MS in Organic Chemistry from Washington University in St. Louis and a Ph.D. in Organic Chemistry from the Johns Hopkins University, Baltimore, Maryland. He joined WMRC, after post-doctoral work at the University of Illinois in photochemistry and a few years in university teaching and directing research on antimicrobial compounds.

SOCIAL HOUR: 6:00- 7:00 P.M.
Cash Bar

NOTICE TO ILLINOIS TEACHERS

The Chicago Section-ACS is an ISBE provider for professional development units for Illinois Teachers. Teachers who register for the March meeting will have the opportunity to earn up to 3 CPDU's.

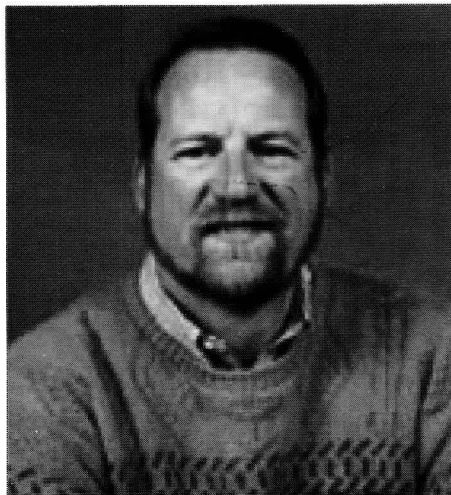
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DINNER**7:00 P.M.**

Menu: Soup du jour, Fancy Spring Salad (seasonal greens, Fuji apples, toasted almonds, raspberry vinaigrette), choice of either seared Breast of Chicken with Lemon Beurre Blanc sauce and baked potato and fresh vegetable, Baked Orange Roughy with Lemon Pepper sauce and baked potato and fresh vegetable, or Penne Pasta with assorted fresh vegetables and creamy Pesto Sauce; rolls and butter, Tiramisu dessert, and beverage.

Dinner reservations are required and should be received in the Section Office via phone (847-647-8405), fax (847-647-8364), or website (<http://membership.acs.org/C/Chicago>) by noon on Tuesday, March 19, 2002. The dinner cost is \$34.00 to Section members who have paid their local section dues, members' families, and visiting ACS members. The cost to non-Section members is \$36.00. The cost to students and unemployed members is \$17.00. **PLEASE HONOR YOUR RESERVATIONS.** The Section must pay for all dinner orders. No-shows will be billed.

GENERAL MEETING**8:00 P.M.**

Dr. Dennis L. Hjeresen, Director, The Green Chemistry Institute, American Chemical Society, Washington, DC

Title: Green Chemistry to Address Global Environmental Issues

Abstract: The dominant feature of environmental issues for this century will be the relation between an exploding human population, the use of natural resources and the environmental impacts of both. The growing population also creates a significant new demand for chemical goods and services. However, there are serious glob-

al environmental impacts attributable to population growth, the chemical enterprise, or both:

- Deforestation resulting from the demand for agricultural land, housing, and fuel;
- Loss of biological species in forests and in waters;
- Desertification, erosion, and salination of farmland from unsustainable agricultural practices;
- The pollution of fresh and marine waters further depleting food sources;
- The introduction of persistent organic pollutants, agricultural fertilizers, organochlorines, heavy metals, and volatile organic compounds into the ecosystem
- Changing climate with as yet unpredictable changes in the hydrologic cycle with manifestations in flood, drought, sea-level change, and the spread of infectious diseases;
- Energy generation from fossil fuels leading to greenhouse gas accumulation (Carbon Dioxide, NO_x, SO_x, etc.) with concomitant warming of the atmosphere.

Among environmental issues facing the world today, land-based sources of water pollution is one of the most pressing. Adequate supplies of satisfactory quality water are essential for the natural resources and ecological systems on which all life depends. Agricultural chemistry is a second area where human sustainability is brought into question by pollution. Finally, energy production and consumption have had a demonstrable effect on the environment and new alternatives are being sought.

Population growth brings an increased demand for chemical goods and services. However, sustainable growth depends on environmentally benign processes and products. Green Chemistry offers a scientifically based set of solutions to protect environmental quality. This talk will highlight examples of green chemistry approaches to each of these major problem areas.

Biography: Dr. Hjeresen currently serves on the Board of Directors of the Green Chemistry Institute and as GCI Director. He has a long history of creating pollution prevention programs and catalyzing partnerships. He established Los Alamos as lead DOE laboratory for EPA Green Chemistry Programs. He has lectured and given presentations in this area all over the world and established significant international interest in Green Chemistry. He also serves as a member of the editorial board for the Journal of Clean Products and Processes and the advisory board of the Journal of Environmental Science and Technology. Dr. Hjeresen serves as secretary and chair of the organizing

Committee of CHEMRAWN XIV World Congress on Green Chemistry. He serves as a United States Delegation Member - Organization for Economic Cooperation and Development (OECD) Joint Meeting of the Chemicals Committee and Working Party on Chemicals, Pesticides and Biotechnology; Working Group on Research and Development in the Context of Sustainable Chemistry.

Dr. Hjeresen also serves as director of the US/China Water Resources Management Program for the White House and coordinates the activities of 11 USG agencies, the private sector and NGO's as they relate to water in China. This is a treaty level activity under the US/China Joint Commission Meeting on Science and Technology. He has featured Green Chemistry as a key method for avoiding water pollution. He has worked in China with universities, industry and government to establish a national program and to promote US private sector opportunity. He has worked to establish an international program for the Green Chemistry Institute and established international chapters in 13 countries.

Dr. Hjeresen was a key author of the Industrial Waste Reduction Program and the Environmental Management Science Program for DOE and has developed industrial and government partnerships in a number of areas. He is currently serving as the Chair of the DOE Environmental Management Science Program Technical Program Committee. He also serves on the DOE Strategic Laboratory Council, an advisory body to Senior DOE Management.

Dr. Hjeresen received his M.S. in Neuroscience in 1982 and his Ph.D. in Neuroscience (minor in Ecology) in 1984 from the University of Washington in Seattle. His research career focused on biological effects of environmental pollutants and includes an extensive list of peer-reviewed publications and a history of professional service.

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"CHEM SHORTS" For Kids

Soda Science

Kids, here you'll be dabbling in the science of drinkable bubbles by making your very own root beer soda pop. Most sodas use pressurized carbon dioxide for the bubbles, but that would be very difficult to mimic at home. So instead we'll be using yeast to carbonate the brew. Last year we discussed the use of yeast in baking bread (12/00-2/01). The scientific process is called fermentation, where yeast eats sugar and makes carbon dioxide and alcohol by-products. (It's only a little alcohol here: an entire 2-liter bottle of root beer has less of it than is in one really ripe banana!).

What you'll need is a scrupulously clean and dry 2-liter plastic bottle and cap (sterilized is best), active dry yeast packets, tepid tap water, sugar, and root beer or vanilla flavoring. Wash your hands and all utensils very thoroughly. Fill a 2-cup glass measuring cup with tepid (room temperature to warm) tap water. Dissolve one tablespoon of sugar in the water. Add 1/8 teaspoon of yeast to the sugar water. Stir gently and let stand 5 minutes. This is called "proofing", and you are proving that the yeast is still alive.

In a 2-quart glass bowl combine 6 cups warm water, 1 cup sugar, and 1 tablespoon root beer flavoring. Stir thoroughly. If the yeast has a thin layer of froth (tiny bubbles) on top, it can be added to the bowl now. (If your yeast had no froth, try slightly cooler or warmer water, or buy a new supply). Stir thoroughly and pour the mixture into the bottle. Add more water until the liquid reaches about one inch below the bottle's neck. Cap, and let the bottle stand at room temperature for 2-4 days. You'll know it's ready when enough CO₂ has formed to expand the bottle and make it feel rigid, like it was just bought at the store. Now refrigerate for at least 2 days to stop the growth of the yeast. After this you can drink your very own soda. It is best consumed within one month.

People used to make soft drinks at home this way all the time using wild yeast, long before commercial brands were available. People still use wild yeast today to make sourdough bread starter. Root beer extract can be found now in large grocery stores near vanilla and other extracts in the spice aisle. In later batches, try to change the taste a little by changing from sugar to other sweeteners like brown sugar, honey, or molasses. Enjoy!

Reference: Beth Robelia, "Root Beer Chemistry" in Scientific American Explorations magazine, Winter 2002, page 12.

Submitted by DR. K. A. CARRADO.

All past "ChemShorts": <http://member.ship.acs.org/C/Chicago/ChmShort/kidin dex.html>.

HIGH SCHOOL EDUCATION COMMITTEE WEBSITE

The Chicago Section's High School Education Committee now has a website at

<http://www.glenbard.dupage.k12.il.us/south/staff/heinz/ACS/acshome.htm>.

There is a link for the site on the Section's Website Home page.

SCHOLARSHIPS

The Chicago Chromatography Discussion Group (CCDG) is offering two annual scholarships for students of the Chicago area. One is the membership scholarship, and the other is the research scholarship. Winners will be announced at the CCDG Annual All-Day Meeting in May of 2002, but awardee attendance is optional.

Applications and requirements for both scholarships are available on the CCDG web site (www.ccdg.org). Applications will be accepted until Tuesday, April 30, 2002. For more information contact the CCDG Awards Chairperson, Jim Michels, at (630)-305-2318 or jmichels@ondeo-nalco.com.

Membership Scholarship

This scholarship is intended for children of CCDG members who are undergraduates majoring in the sciences. The field of science doesn't need to be in separations. The award consists of \$1000 to be used at the awardee's discretion.

Research Scholarship


This scholarship is intended for undergraduate or Master's students performing research in separation science or using separations in their work. Previous winners have done work in lab-on-a-chip technology, cystic fibrosis research, and fullerene chemistry (to name a few). Eligible schools are anywhere in Illinois and southern Wisconsin. The award consists of \$1000 to be used at the awardee's discretion. The awardee is encouraged (but not mandated) to make a brief overview of their work at the May CCDG meeting.

March, 2002 Vol. 89, No. 3. Published by the Chicago Section of The American Chemical Society, Editorial Staff: Cheryl Bradley, Editor, and Fran Kravitz; Ellen Sullivan, Business Manager. Address: 7173 North Austin, Niles, Illinois 60714. 847/647-8405. Subscription rates: \$15 per year, \$15 outside North America. Frequency: monthly-September through June.

CONTACT THE CHAIR

Do you have any questions, suggestions, ideas, gripes, complaints, relating to the Chicago Section? Do you want to volunteer to help with Section programs or activities? Then contact your Chair. Simply log onto the Section's Web Page at <http://membership.acs.org/C/Chicago>, 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. I look forward to hearing from you.

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WHAT IS GREEN CHEMISTRY?

This meeting we are focussing on green chemistry. But what is green chemistry and why should we be interested in green chemistry? Green chemistry involves chemistry that is used to prevent pollution, by using chemistry in the design of chemical products and processes that reduce or eliminate the use and generation of hazardous substances. Green chemistry can also be known as sustainable chemistry. As will be described by our two speakers, green chemistry includes concepts such as waste minimization, solvent selection, atom utilization and alternative synthetic routes from sustainable resources. The challenge for chemists is to develop products, processes and services in a sustainable manner to improve quality of life, the natural environment and industry competitiveness.

The main principles of green chemistry may be expressed as follows:

- Waste prevention is better than treatment or clean-up;
- Chemical synthesis should maximize the incorporation of all starting materials and minimize derivatives;
- Chemical synthesis should ideally use and generate non-hazardous substances;
- Chemical products should be designed so as to be non-toxic;
- Catalysts are superior to reagents;
- The use of auxiliaries should be minimized;
- Raw materials should increasingly be renewable;
- Chemical products should break down into benign products;
- Chemical processes require better control; and
- Substances should have minimum potential for accident

Green Chemistry really got its start with in 1987 with the release of the United Nations report "Our Common Future." In the report, sustainable development was defined as development that met the needs of the present without compromising the ability of future generations to meet their own needs. In the U.S., interest in green chemistry began in earnest with the passage of the Pollution Prevention Act of 1990, the first environmental law to focus on preventing pollution at the source rather than dealing with remediation or capture of pollutants at the end-of-the-pipe so.

If you look on the internet, there are many groups/organizations that have programs on green chemistry. Most of the groups/organizations perform one or more of three actions. The groups/organizations

provide support for organizations to perform fundamental research to develop green chemistry. Second, the groups/organizations provide educational activities on green chemistry. Finally, the groups/organizations provide awards on innovative developments involving green chemistry.

Of course, the Environmental Protection Agency (EPA) is one of the organizations involved in Green Chemistry. The EPA's Green Chemistry Program promotes the research, development, and implementation of innovative chemical technologies that accomplish pollution prevention in both a scientifically sound and cost-effective manner. In 1991, the Office of Pollution Prevention and (OPPT) began looking into developing new or improving existing chemical products and processes to make them less hazardous to human health and the environment. OPPT launched a model research grants program called "Alternative Synthetic Pathways for Pollution Prevention". This program provides grants for research projects that include pollution prevention in the synthesis of chemicals. Since 1991, the Green Chemistry Program has built many collaborations with academia, industry, other government agencies, and non-government organizations to promote the use of chemistry for pollution prevention through completely voluntary, non-regulatory partnerships.

The Green Chemistry Network (GCN) was launched by the Royal Society of Chemistry and is based within the Department of Chemistry at the University of York. According to their website, the main aim of the GCN is to promote awareness and facilitate education, training and practice of Green Chemistry in industry, academia and schools. The GCN provides links to other organizations and government departments through its website, organizes conferences, workshops and training courses, and provides educational material for universities & schools. The Green Chemistry Network aims to help chemical companies and chemists by sharing best practice, promoting green technology transfer and providing data to show that adoption of green practices can also provide cost benefits for industry.

The Green Chemistry Institute (GCI) is a non-profit organization within the American Chemical Society (ACS) founded to promote green chemistry through research, education, conferences and symposia and international collaboration. The institute was originally organized on the Internet as a virtual nonprofit organization in May 1997 by a group of representatives from industry, academia, national labs, and other organizations. In early 2001 GCI formed an alliance with

the American Chemical Society. GCI works across disciplines and academic, government, and industry sectors to promote the development and implementation of chemical products and processes that reduce or eliminate the use and generation of hazardous substances.

Worldwide interest in green chemistry is reflected in the 20 international chapters currently affiliated with the Green Chemistry Institute. One of the 20 chapters is the Canadian Chapter, started in 2001. There is also the Centre for Green Chemistry at Monash University in Australia.

For more information on green chemistry refer to www.epa.gov/opptintr/green_chemistry or www.chemsoc.org/net_works/gcn.

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CHEMICAL SAFETY WEBSITE

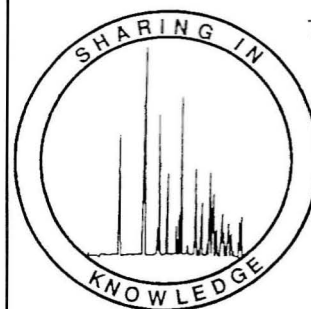
The American Chemical Society Committee on Chemical Safety web site has a new look, new content, and a new url. The new web address is <http://chemistry.org/committees/ccs>. Check it out for publications on laboratory safety for K-12, colleges, industrial labs, and small businesses.

Chicago Chromatography Discussion Group

39th Annual Introductory Course in Gas Chromatography

April 8 - 11, 2002

Roosevelt University, Albert A. Robin Campus, Schaumburg, IL



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www.ccdg.org

Please call (847) 647-0157 for an application.
Deadline for applications is March 29, 2002.

See the article in this issue for more information

THE 2002 PUBLIC AFFAIRS PROGRAM — GREEN CHEMISTRY

Each year in March, the Chicago Section Public Affairs Committee offers a program to bring a greater focus on public policy issues, either through the presentation of the Public Affairs Award or through the presentation of a speaker or program that deals with some aspect of science as it related to the public interest. Over the years we have sponsored programs on a wide variety of issues to us as scientists and citizens of the earth. Sometimes we have dealt with public policy issues, as in 1994 when we sponsored a panel on health-care reform, with particular emphasis on how it would effect the pharmaceutical, healthcare and hospital professions and industries. In 1996, we presented Dr. Sherwood Rowland, the Nobel Laureate, who spoke on his continuing work on atmospheric pollution. In 1998, Dr. Dale Kempf of Abbott Laboratories spoke to us about his work in developing the new protease inhibitors, drugs that had and continue to have a pronounced positive effect in extending the lives of AIDS patients. Our most recent Public Affairs lecture, given in 20002, was on the study of the human memory, a lecture given by Viscount David Samuel. Our program this year promises to be as interesting and exciting as any we have had in this series.

This year we are highlighting green chemistry at our Public Affairs meeting. As our after dinner speaker, Dr. Dennis L. Hjeresen, will describe to us in more detail, how green chemistry offers some solutions to protect our environment, while sustaining life. Dr Hjeresen is the Director of the Green Chemistry Institute, a non-profit organization, that is jointly supported by the ACS.

The other part of our program for the evening will be given as an early topical group presentation by Dr. William M. Nelson, from The Illinois Dept. of Natural Resources-Waste Management & Research Center, in Champaign, Illinois. Dr Nelson will speak on his work to utilize ionic liquids as a replacement for traditional organic solvents in order to minimize waste.

It promises to be a most exciting and intellectually stimulating evening. We hope that you will enjoy the program and learn how chemistry can and is making the world a better place for the future.

JAMES P. SHOFFNER
BARBARA E. MORIARTY
CO-CHAIRS, PUBLIC AFFAIRS
COMMITTEE

AWARDS FOR GREEN CHEMISTRY

It is, of course, always nice to be recognized for your work. Several organizations around the world provide awards that recognize corporations, institutions and individuals for their accomplishments in green chemistry. The annual **Presidential Green Chemistry Challenge Awards Program**, initiated by President Clinton in March 1995, recognizes outstanding chemical technologies that incorporate the principles of green chemistry into chemical design, manufacture, and use. The Presidential Green Chemistry Challenge Awards Program is an opportunity for individuals, groups, and organizations to compete for annual awards in recognition of innovations in cleaner, cheaper, smarter chemistry.

The Awards Program is open to all individuals, groups, and organizations, both nonprofit and for profit, including academia, government, and industry. Five awards are given each year. Three of the awards are given for specific green chemistry principles; these awards are the Alternative Synthetic Pathways Award, the Alternative Solvents and Reaction Conditions Award and the Designing Safer Chemicals Award. Two additional awards are presented: one to the academic community and one to a small business. An independent panel, selected by the American Chemical Society, judges nominations for the Awards. Presidential Green Chemistry Challenge Awards recipients receive national public recognition for their outstanding accomplishments in the research, development, and/or implementation of green chemical technologies.

The Royal Society of Chemistry sponsors The UK Green Chemistry Awards. These three annual awards are given for Green Chemistry Technology that offers significant improvements in chemical processes, products and services through research and commercial exploitation of novel chemistry, so to achieve a more sustainable, cleaner and healthier environment as well as creating competitive advantage. The Jerwood Salters' Environment Award is given to a young academic (under 40), preferably working in collaboration with industry. In addition, Two Annual Awards are given to UK companies for technology, products or services; at least one of these two awards must be given to one company a Small or Medium Enterprise.


The Royal Australian Chemical Institute sponsors The Green Chemistry Challenge Awards to recognize and promote fundamental and innovative chemical methods that accomplish pollution prevention through source reduc-

tion and that have broad applicability in industry, and to recognize contributions to education in Green Chemistry. The evaluation of the new technology's impact will include considerations of the health and environmental effects throughout the technology's lifecycle with recognition of the necessity for incremental improvements. The nominated green chemistry technology must have reached a significant milestone within the past 5 years in Australia (e.g. been researched, demonstrated, implemented, applied, patented, etc.).

Finally, national green chemistry awards also have been established in Italy and Germany.

Several Chicago — area companies and institutions have been recognized by receiving one of these awards. In 1996 The Donlar Corporation received the Small Business Award for "Production and Use of Thermal Polyaspartic Acid." In 1998 Argonne National Labs received the Alternative Solvents/Reaction Conditions Award for "Novel Membrane-Based Process for Producing Lactate Esters. Nontoxic Replacements for Halogenated and Toxic Solvents." Finally, in 1999 Nalco Chemical Company, now Odeco Nalco, received the Alternative Solvents and Reaction Conditions Award for "The Development and Commercialization of ULTIMER™ The First of a New Family of Water Soluble Polymer Dispersions."

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ANALYSIS FOR THE CHEMICAL ELEMENTS

YOUNGER CHEMISTS COMMITTEE - THE YEAR IN REVIEW

In 2001 we were involved in many outreach activities across Chicagoland. These included sitting on the T.E.E.N.S. panel discussion, participating in several Career Days by hosting booths about chemistry careers, and performing fun chemistry demonstrations at the Chicago Chemistry Day celebration at the Adler Planetarium. In addition, we had planned a Junior Technical Symposium for Chicago-area younger chemists. Unfortunately, this event had to be canceled last year because of low participation — hopefully this year we can get the word out to more younger chemists. We had a great time at the National ACS Meeting in Chicago this year. YCC members helped welcome area chemists at the Registration booth, and we presented a poster of the year's activities at the YCC mixer. To thank all our volunteers, a lunch was held and gifts were presented.

If you are interested in being on our Steering Committee (help plan events like those above!) or on our mailing list, let us know! Drop an email to the current Chair, Jen Horne, at jenhorne@att.net. More information can be found on our webpage, membership.acs.org/C/Chicago/ycc.html.

The Younger Chemists Committee of the Chicago Section of the American Chemical Society was formed to help identify the needs and concerns of younger chemists by developing programs responsive to their needs and to cultivate communication and interaction all in a collegiate atmosphere in the Chicago Area. The goals of the YCC are to

- Make the ACS relevant to younger chemists
- Increase involvement of younger chemists in the ACS at all levels
- Develop mechanisms to integrate younger chemists into the profession

DEADLINES FOR CHEMICAL BULLETIN

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

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

Issue	Deadline
April 2002	2/22/02
May 2002	3/29/02
June 2002	4/26/02

CHICAGO CHEMISTS' CLUB

Club History

The Chicago Chemists' Club was chartered December 30, 1919 as a social organization to promote good fellowship and camaraderie among Chicago-area chemists. Through the years, the Club roster has included many prominent members of the chemical profession.

Social Events

The social calendar of the Chemists' Club includes ten dinner meetings per year where spouses and/or guests are welcome to attend. Weekend events include a spring theater party, an annual dinner dance, and a summer outing in July or August. All other events are on the second Wednesday evening of the month at various restaurants in the Chicago metropolitan area. The programs include a variety of delicious cuisine—to the accompaniment of timely, stimulating speakers, ethnic music and dance, and other exciting types of entertainment. The Club is also a co-sponsor of the Chicago Section ACS' annual Holiday Party in December.

Civic Activities

The Club annually presents the Bernard E. Schaar award to the first place winner of the chemistry examination given by the Chicago Section ACS. The presentation is made at the Chicago Section ACS' Education Night meeting in June. The Club also contributes, from time to time, to philanthropic organizations.

Membership Benefits

Membership dues are \$50 per year. As a non-profit organization, the Club returns a portion of these dues to its members in the form of dinner price reductions. The Club also publishes an informational newsletter, the *Stirring Rod*, and a biannual Membership Directory.

Joining the Club

Membership is open to all persons interested in chemistry and its application. A person wishing to join must be sponsored by an active member and complete an application, which is subject to the approval of the Board of Trustees.

REGISTER TO ATTEND MONTHLY SECTION MEETINGS

ON LINE

at
<http://membership.acs.org/C/Chicago>

2001 EDITION OF THE ACS DIRECTORY OF GRADUATE RESEARCH

The Directory provides a wealth of information on faculty and their research at programs in chemistry, chemical engineering, biochemistry, medicinal/pharmaceutical chemistry, clinical chemistry, polymer chemistry, food science, forensic science, marine science, toxicology, materials science, and environmental science in the U.S. and Canada. It lists faculty member biographical information, area of specialization, titles of all papers published within the last two years, individual telephone numbers, and FAX numbers. It also contains listings for 696 academic programs, 10,618 faculty members, and 112,236 publication citations. Published in odd-numbered years by the ACS Committee on Professional Training, the 2001 edition of the Directory contains current faculty information for the 2001-2002 academic year. If you would like more information on how to order a copy of the Directory, call the ACS Office of Society Services at 800-227-5558.

SCIENTIFIC LITERATURE DATABASE

ScienceWise, now a division of TheScientificWorld, Inc., provides access to the world's scientific literature through sciBASE — a database covering 30 million documents from more than 30,000 journals with 10,000 new documents added each day. This service enables you to locate, purchase, and receive online individual scientific articles. In addition, be alerted to newly-published scientific research in your areas of interest through the pupALERT alerting service. For more information, go to <http://www.TheScientificWorld.com/>.

PATENT LITIGATION

JEROME S. BROZEK
REGISTERED PATENT ATTORNEY
2121 West Morse
Chicago, Illinois 60645
Phone: 773-743-3128

Desire to work with in-house counsel and patent prosecution attorneys regarding patent litigation. Small scale patent litigation can remain in-house or with your firm. Concentration in litigation since 1978; registered patent attorney since 2000; member of the Federal Trial Bar of the Northern District of Illinois. Extensive course work in and study of patent litigation and the latest case law. Chemistry background and active member of the Chicago Section of the American Chemical Society. Since working from a home-office, fees kept very reasonable. Resume, civil litigation samples, and references available upon request.

CONTINUING EDUCATION SEMINARS

The Continuing Education and Professional Relations Committees are continuing the series of short courses held at Loyola University on Saturday mornings, 9:00 to 12:00, at Loyola University, 6525 N. Sheridan Rd., Cudahy Science Building (building with the green dome), room 202.

The March program on Saturday, March 23, will be on Recent Developments in Nuclear Magnetic Resonance Spectroscopy presented by Dr. Robert Botto of Argonne National Laboratories.

Three CPU units of credit for school teachers if available for this course.

The cost for each of these courses is \$10 (free for students and unemployed chemists) and carries three hours of CPDU credit for teachers.

A parking garage is available on the Loyola campus and it is also easily reachable by public transportation.

For further details or to register call the section office, 847-647-8405.

223RD ACS NATIONAL MEETING

APRIL 7-11, 2002

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GC COURSE

The Chicago Chromatography Discussion Group (CCDG) will conduct its 39th annual Introductory Course in Gas Chromatography April 8 — 11, 2002, at Roosevelt University, 1651 McConnor Parkway, Schaumburg.

The 3 1/2 day course gives 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 are presented by outstanding Chicago area industrial and academic scientists who are active in the field.

The course will emphasize practical laboratory training in capillary GC. Gas chromatographs will be available for the students. Each student will spend about five hours in intensive laboratory work in the areas of quantitative and qualitative analysis.

Fee is \$595, which includes lunch, text and lab manual. Registration is limited to 45. For an application, contact CCDG at 847-647-0157. Registration deadline is March 29. A limited number of discounted registration fees are available for full-time students and unemployed individuals.

CHANGES TO NATIONAL MEETING PUBLICATIONS

Beginning in 2002, the national meeting Technical Program will now be mailed as a supplement to Chemical and Engineering News (C&EN), as opposed to being included into the issue. This technical program will be the same program available onsite at national meetings. For the most up-to-date information, go to the official version of the national meeting technical program on the Web, www.chemistry.org/meetings.

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 can win one.

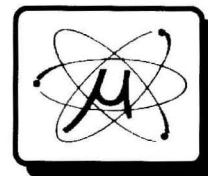
Congratulations to T-shirt winner Betty Aksamit (January meeting).

FRAN KAREN KRAVITZ
HOSPITALITY COMMITTEE CHAIR

UNDERGRADUATES WILL CELEBRATE IN ORLANDO

Undergraduate Programming at the ACS National Meetings will celebrate its 10th anniversary and the Student Affiliates Program will celebrate its 65th at the 223rd ACS National Meeting in Orlando, FL. On Sunday, April 7 from 8-11 p.m., a special Anniversary Reception/Poster Session will be held in honor of the two anniversaries. Current and past members of the SOCED Task Force on Undergraduate Programming at National Meetings will present posters on previous meetings, and student affiliates chapters will present posters on the history of either their chapter or their chapter's attendance at national meetings.

The Anniversary Reception will also include dancing and refreshments, and will be held immediately following the "always rousing" Student Affiliates Chapter Awards Ceremony. Both events will be held at the Orange County Convention Center. Other events planned for undergraduates at the Orlando meeting include symposia on forensic science and the chemistry of water at Walt Disney World, the Undergraduate Research Poster Session, and the ACS Corporation Associates Reception for Undergraduates. Check out the entire Orlando Undergraduate Program on the Web at www.chemistry.org/meetings.



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SECTION EDUCATIONAL TAPES

The following video and audio tapes are available for Chicago Section members to borrow. Tapes may be borrowed for up to 14 days. Members will have to pay mailing cost unless they pick up tapes from section office. Late charges of \$1 per day will occur if tapes are not returned in 14 days and if tapes are not returned in 60 days, members will be charged the cost of replacing the tape. For more information call the Section office at (847) 647-8405.

VIDEOTAPES

- 1) Chemistry: The Fundamental Science
ACS National Chemistry Week (1989)
Time: 30 minutes
- 2) Eminent Chemist Series — Hubert N. Alyes
ACS (1983)
Time: 21 minutes
- 3) Eminent Chemist Series — Melvin Calvin
ACS (1982)
Time: 28 minutes
- 4) Eminent Chemist Series — Arnold D. Beckman
ACS (1986)
Time: 55 minutes
- 5) Eminent Chemist Series — Anna J. Harrison
ACS (1989)
Time: 60 minutes
- 6) Jason's Journey — A Quest for Chemistry
Union Carbide (1988)
Time: 20 minutes
- 7) Molecular Modeling for Biological Systems
ACS Satellite Videocourse (1990)
Time: 4 hours
- 8) Carcinogens, Anticarcinogens and Risk Assessment by Bruce Ames
The Council for Chemical Research
Time 47 minutes
- 9) Multimedia Chemistry Show Opens in Chicago
ACS (1990)
Time: 2 minutes
- 10) At Work for Chemistry: People: Places: Program
ACS Report to the Membership
Time: 18 minutes
- 11) 1991 Chemistry Olympiad TV News Release — Forrest Michael
ACS (1991)
Time: 1:19
- 12) Chemists in the Classroom
ACS (1990) Two copies with booklet
Time 12:29
- 13) Working It Out
Career video funded by U.S. Dept. of Education and SmithKline Beeches aimed at minority students
ACS (1990)
Time: 10:37
- 14) Tracing the Path: African American Contributions to Chemistry in the Life Sciences
ACS (1991)
Time: 18 minutes
- 15) CFC's and the Ozone Layer - Disrupting A delicate Balance
Conversations with Nobel Laureates in Chemistry Series
ACS Satellite Television Seminar with booklet (April 24, 1996)
Time: 2 hours
- 16) Practical Solutions to Laboratory Safety Problems
Flinn Scientific Safety Seminar (1994)
- 17) Chemical Storage Hazards
Safety in the Research Laboratory Series
Howard Hughes Medical Institute (1995)
Time: 11 minutes
- 18) Glassware Washing Hazards
Safety in the Research Laboratory Series
Howard Hughes Medical Institute (1995)
Time: 10 minutes
- 19) Mammalian Cell Culture Hazards
Safety in the Research Laboratory Series
Howard Hughes Medical Institute (1997)
Time: 8:22 minutes
- 20) X-Ray Diffraction Hazards
Safety in the Research Laboratory Series
Howard Hughes Medical Institute (1997)
Time: 9:27 minutes
- 21) Centrifugation Hazards Safety in the Research Laboratory Series
Howard Hughes Medical Institute (1995)
Time: 9 minutes
- 22) Radionuclide Hazards
Safety in the Research Laboratory Series
Howard Hughes Medical Institute
Time: 12 minutes
- 23) Emergency Response
Safety in the Research Laboratory Series
Howard Hughes Medical Institute
Time: 12 minutes
- 24) Pollution Patrol: Targeting Tailpipes
Donald Stedman ACS
25) Auto Emissions Detector Piece
Donald Stedman ACS
- 26) Practicing Safe Science
Howard Hughes Medical Institute (1992)
Time: 29:10 minutes
- 27) Catalysis: "Technology for A Clean Environment"
Distributed as a joint effort of the Council for Chemical Research and ACS, Public Outreach Office
Time: 32 minutes
- 28) The Stuff of Dreams — Dow Plastics
- 29) Recycle This! Rock 'N' Roll and Recycling
The Dow Chemical Company (1990)
- 30) The Right Solution
Kids & Chemistry Series
Time: 9:24 minutes
- 31) Pure Enantiomers: Separation, Synthesis, Analysis
ACS (1992) Tape #1
Time: 90 minutes
- 32) Pure Enantiomers: Separation, Synthesis, Analysis
ACS (1992) Tape #2
Time: 90 minutes
- 33) Biological and Abiological Catalysis in Organic Synthesis
ACS (1992) Tape #1
Time: 90 minutes
- 34) Biological and Abiological Catalysis in Organic Synthesis
ACS (1992) Tape #2
Time: 120 minutes
- 35) Good Chemistry Means Forming Bonds With The Public
National Chemistry Week
ACS (1994) Two copies
- 36) National Chemistry Week
10th Anniversary Video
- 37) From Stress to Strength: How to Lighten Your Load and Save Your Life
Videotaped Seminar by Robert S. Eliot, M.D. (1994)

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- 38) Formula For Success: Turning Job Leads Into Gold
ACS Department of Career Services (1994)
Time: 26:36 minutes
 - 39) Career Transitions: Catalyst For Change
ACS Department of Career Services (1994)
Time: 27:18 minutes
 - 40) Imaging and the Mars Mission
Michael D. Mc Creary, Eastman Kodak Company
Chicago Section, ACS (December 11, 1998) 3 copies
 - 41) Dr. Lawrence F. Dahl — Willard Gibbs Award
Chicago Section, ACS (May 21, 1999) 2 copies
 - 42) A Look At The Road Ahead — Fred Webber, Chemical Manufacturing Assoc.
Chicago Section ACS & AIChE (November 18, 1998)
 - 43) Benzylic Carbanions — Are They Planar? — Ernest L. Eliel
Chicago, Section ACS (November 17, 1995)
 - 44) Barbara Moriarty, Chair of the Chicago Section ACS
Interview on Channel 23 (September 4, 1997)
 - 45) Dr. Jim Mitchell
Chicago Section, ACS (March 20, 1992)
Time: 31:52 minutes
 - 46) President Event — Industry's Creative Inventions
Earnest W. Daveport, Jr.
ACS 210th National Meeting (August 20, 1995) — 3 copies
 - 47) 100 Years of the Chicago Section, ACS
Chicago Section, ACS (August 20, 1995) — 2 copies
Time: 2:18 minutes
 - 48) Someone You Should Know
WLS-TV (February 24, 1998)
Time: 2:29 minutes
 - 49) The World of Chemistry — Annenberg/CPB Collection (1989)
17. The Precious Envelope (28:38 minutes)
18. The Chemistry of the Earth (28:37 minutes)
 - 50) Chemistry Day 1986
 1. Better Living Through Chemistry — Dr. Mary Good (45 minutes)
 2. Chemistry Monitoring of Lake Michigan — Mr. David Rockwell (40 minutes)
 3. Studies on Lead Pollution in the Chicago Area — Ms. Sara LaBelle (50 minutes)
 4. Chemistry Demonstration — Dr. Mark Ratner (1 hour)
 5. Chemical Inventions That Have Revolutionized Our Lives — Dr. Joseph Arrigo (45 minutes)
 6. Brief Exhibit Tour
- AUDIOTAPES**
- 1) Applications of Orbital Symmetry by Gerald L. Goe
ACS Audio Courses (1973) C-10
 - 2) Intermediate NMR Spectroscopy 2nd Edition by Joseph B. Lambert
ACS Audio Courses (1978) C-11R
 - 3) Modern Liquid Chromatography by Lloyd Snyder & J.J. Kirkland
ACS Audio Courses (1973) C-16
 - 4) Practical Technical Writing by J.R. Gould
ACS Audio Courses (1973) C-17
 - 5) Basic Gas Chromatography by Harold M. Mc Nair
ACS Audio Courses (1994) C-18
 - 6) Applied Problem Solving by J. David Reid
ACS Audio Courses (1977) C-35
 - 7) Oral Communication and People Problems by F.G. Sawyer
ACS Audio Courses (1977) C-36
 - 8) The Effective Utilization of Time by C.L. Hamman
ACS Audio Courses (1977) C-37
 - 9) Industrial Organic Chemistry by Harold Wittcoff
ACS Audio Courses (1979) C-45
 - 10) Polymer Chemistry and Technology by Raymond B. Seymour
ACS Audio Courses (1981) C-61
 - 11) Chemistry for the Non-Chemist by W. Frederick Ottle
ACS Audio Courses (1982) C-67
 - 12) Homogeneous Catalysis by Penelope A. Chaloner
ACS Audio Courses (1986) C-81
 - 13) Laboratory Safety and Health by James A. Kaufman
ACS Audio Courses (1986) C-87
 - 14) ACS Dimensions In Science Series
Put Science in Your Pocket
 - 15) ACS Dimensions In Science Series
 - 1442 — Teaching The Science Teachers
 - 1443 — The Future of Robots
 - 1444 — Curing Sick Buildings
 - 1445 — Minimizing Wastes
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 - 1454 — Liposomes
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 - 1458 — Art Safety
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 - 1460 — Vitamins Vs. Disease
 - 1461 — Queen Bee's Secret
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 - 1466 — The Last Meal
 - 1467 — Improving Memory
 - 1468 — Education and Competition
 - 1469 — Biomarkers
 - 21) ACS Dimensions In Science Series
 - 1470 — Managing Turfgrass
 - 1471 — New Cosmetic Safety
 - 1472 — Maintaining Life In Space
 - 1473 — Humans In Space
 - 22) ACS Dimensions In Science Series
 - 1474 — Instinctive Behavior
 - 1475 — Sound Chemistry
 - 1476 — Engineering Plants
 - 1477 — Scientific Fraud and Misconduct
 - 23) ACS Dimensions In Science Series
 - 1478 — Helping Sick Hearts
 - 1479 — Sun Protection
 - 1480 — What To Do With Our Garbage
 - 1481 — Back To The Moon
 - 24) ACS Dimensions In Science Series
 - 1482 — Lunar Life
 - 1483 — Changing How Chemistry's Taught
 - 1484 — Drug Delivery
 - 1485 — Aging Airlines

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- 25) ACS Dimensions In Science Series
 1486 — DNA Fingerprinting
 1487 — AIDS Trials
 1488 — Anti-Cancer Foods
 1489 — Sleep Apnea
- 26) ACS Dimensions In Science Series
 1490 — Insomnia
 1491 — Microwave Cooking
 1492 — Future Water Supply
 1493 — Crops and Drought
- 27) ACS Dimensions In Science Series
 1498 — Hormone Releasing Factor
 1499 — Science For The Disabled
 1500 — Pesticide Regulation
 1501 — Megacities
- 28) ACS Dimensions In Science Series
 1502 — Drugs For Drug Addiction
 1503 — National Institute On Drug Abuse
 1504 — Future of Biotech
 1505 — Landslides

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ACS PROGRAMS RECEIVE PRESIDENTIAL AWARD

The ACS Project SEED and the ACS Scholars Program received the sixth annual Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring.

On December 4, 2001 President Bush announced the recipients. Ten individuals and ten institutions received the award for promoting participation among women, minorities and persons with disabilities in scientific and engineering careers. ACS was one of the recipient institutions in recognition of Project SEED and the ACS Scholars Program.

These ACS programs introduce students from groups underrepresented in science, mathematics, and engineering to careers and higher education that will allow them to successfully pursue and complete relevant degree programs. Both programs provide mentors and financial assistance to academically accomplished, yet economically disadvantaged students.

"Increasing minority participation in the chemical sciences is a major focus of the Society," said Eli M. Pearce, 2002 President of the ACS. "Our goal is to increase diversity by removing barriers and expanding opportunities through programs like Project SEED and the ACS Scholars Program."

Since 1968, Project SEED's Summer Research program has provided an opportunity for more than 6,000 high school students to work in a laboratory doing hands-on research in chemistry guided by a scientist-mentor. College scholarships are available for SEED students planning to attend college.

ACS launched the ACS Scholars Program in 1995. This program targets African American, Hispanic, and Native American students interested in two- and four-year college and university degree programs in chemistry, chemical engineering, biochemistry, and environmental sciences. Over 1,100 students representing 390 colleges and universities in 48 states and territories have won scholarships.

The national mentoring awards, which have been given annually since 1996, recognize a long-term commitment to providing opportunities for greater participation in science and engineering by all Americans. The awards do this by honoring those whose personal and organizational activities demonstrate outstanding and sustained mentoring and effective guidance to a significant number of students at the K-12, undergraduate or graduate education levels and enable a substantial number of students from groups underrepresented in science, mathematics and engineering

to successfully pursue and complete relevant degree programs.

The national awards include a \$10,000 grant and a commemorative presidential certificate. The awards were presented December 12, 2001 at a ceremony in Washington, DC.



Visit the
Chicago Section

at
<http://membership.acs.org/C/Chicago>

SCHOLARSHIPS

The Illinois Chemical Education Foundation Scholarship Program provides \$2,000 Undergraduate Scholarship Awards for qualified Illinois residents enrolled in chemistry, biochemistry or chemical/environmental engineering at post-secondary educational institutions located in Illinois. For more information contact the Chemical Industry Council of Illinois at 847-823-4020. <http://www.cicil.net>

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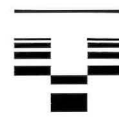
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Jerome S. Brozek (Registered Patent Attorney)	6	773-743-3128	
Micron Inc.	7	302-998-1184	www.micronanalytical.com
Stonebridge Holistic Consulting Agency, Ltd	7	877-283-3344	www.StonebridgeHolistic.com/labassist.nsf
Northup RTS	10	847-579-0049	www.toxconsultants.com
Mass-Vac, Inc.	10	978-667-2393	www.massvac.com
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CALENDAR

March 17-22, 2002: Pittcon 2002 will be held in New Orleans. For further information, call 412-825-3220 or go to <http://www.pittcon.org>.

March 23, 2002: Continuing Education short course on "Recent Developments in Nuclear Magnetic Resonance Spectroscopy" will be held at Loyola University, 6525 N. Sheridan Rd., Cudahy Science Building (building with the green dome), room 202 from 9:00 a.m. to 12:00 p.m. **See article in this issue.**

March 23, 2002: The Chicago Section of the Society of Women Engineers Conference. Contact Diane Peters at diane.peters@worldnet.att.net.

April 7-11, 2002: The 223rd National ACS Spring Meeting will be held in Orlando, FL. For further information, call the National ACS office at (202) 872-6059 or send e-mail to natlmtgs@acs.org.

April 8-11, 2002: The Chicago Chromatography Discussion Group (CCDG) will conduct its 39th annual Introductory Course in Gas Chromatography at Roosevelt University, 1651 McConnor Parkway, Schaumburg. For an application, contact CCDG at (847) 647-0157. Registration deadline is **March 29. See article in this issue.**

April 19, 2002: The Chicago Section American Chemical Society's general meeting talk will be "Science, Technology and Foreign Policy in the Changed World Since 9/11" by Dr. Norman P. Neureiter, Science and Technology Adviser to the Secretary of State, Washington, D.C. For additional information call the Section Office at (847) 647-8405 or <http://membership.acs.org/C/Chicago>.

May 4, 2002: The 2002 High School Scholarship Exam will be given at Loyola University. For further information, contact Ami LeFevre at amilef@niles-hs.k12.il.us or Ann Levinson at annlev@ripco.com.

May 24, 2002: The Chicago Section American Chemical Society will celebrate the presentation of the Willard Gibbs Award at the Argonne Guest House, Argonne National Laboratory. Stay tuned for further information as the date approaches.

June 2-4, 2002: The Great Lakes Regional Meeting will be held in Minneapolis, MN. Stay tuned for further information as the date approaches.

June 21, 2002: The Chicago Section American Chemical Society will present the Annual Education Night. Stay tuned for further information as the date approaches.

August 18-22, 2002: The 224th National ACS Fall Meeting will be held in Boston, MA. For further information, call the National ACS office at (202) 872-6059 or send e-mail to natlmtgs@acs.org.

September 10-13, 2002: The 98th Gulf Coast Conference will take place in Galveston, TX at the Galveston Island Convention Center. For further information, call (281) 319-4646 or send email to GCC@GulfCoastConference.com.

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