

theCHEMICALbulletin

DECEMBER • 1999

CHICAGO SECTION AMERICAN CHEMICAL SOCIETY

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FRIDAY, DECEMBER 10, 1999

Monastero's Ristorante
3935 W. Devon Avenue
Chicago, IL

DIRECTIONS TO THE MEETING

From Chicago: Take I-94 (Edens Expressway) north to Peterson Ave. East exit. Go north to Devon Ave. Proceed on Devon to the restaurant. The restaurant is 1/2 block east of Pulaski Ave.

From the west: Take I-90 to the Nagle north exit. Go to Devon Avenue. Turn east on Devon and proceed to the restaurant.

Free Valet Parking.

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

Cash Bar Available with hors d'oeuvres

DINNER 7:00 P.M.

Dinner reservations are required and should be received in the section office (847/647-8405) by noon on Tuesday, December 7, 1999. Dinner cost is \$30 to Section members who have paid their local section dues, members' families, visiting ACS members. Cost to non-members is \$32. Seating will be available for those who wish to attend the meeting without dinner. PLEASE HONOR YOUR RESERVATIONS. The Section must pay for all dinners ordered. No-shows will be billed.

The menu consists of Cream of Chicken and Rice Soup, fresh green salad with choice of dressing, choice of roast tenderloin of beef or broiled Lake Superior whitefish, anna potatoes (sliced and baked with onions and cheese), broccoli and glazed carrots, rolls and butter, cheesecake with strawberry sauce, and beverage.

GENERAL MEETING 8:00 P.M.



THE TOPIC:

NASA Astronaut Catherine G. "Cady" Coleman, Ph.D. (Lieutenant Colonel, USAF), "Launching the Chandra X-Ray observatory: Yet another day in the life of a scientist astronaut!"

Dr. Cady Coleman was the lead mission specialist for the deploy of the Chandra X-Ray Observatory on Space Shuttle Mission STS-93 this past July, initiating its five year astronomy mission. The observatory is named for the late Nobel Laureate and University of Chicago faculty member Subrahmanyan Chandrasekhar. Chandra will provide scientists with an order of magnitude improvement over current capabilities at X-ray wavelengths. Observations of X-ray emissions from energetic galaxies, neutron stars, quasars and

black holes promise to expand current understanding of the origin and evolution of our universe. Cady will discuss her role in this historic mission, and will share her experiences as a scientist-astronaut.

THE SPEAKER:

After receiving a bachelor of science degree in chemistry from the Massachusetts Institute of Technology in
(continued on page 2)

JOB CLUB

The next meeting of the Chicago Section Job Club will be held on Friday, December 10 at Monastero's at 5 p.m. 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.

Should you wish to attend the Section meeting following the Job Club, the fee for unemployed members is only \$15, and you can continue your networking activities. Please call the Section office for reservations and indicate that you are eligible for a discount.

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(continued from page 1)

1983, Coleman was commissioned as a 2nd lieutenant in the Air Force and began graduate work at the University of Massachusetts. Her research focused on polymer synthesis using the olefin metathesis reaction and polymer surface modification. In 1988, Coleman entered active duty and was assigned to Wright-Patterson Air Force Base. As a research chemist at the Materials Directorate of the Wright Laboratory, she synthesized model compounds to investigate the use of organic polymers for third-order nonlinear optical applications such as advanced computers and data storage. Coleman also acted as a surface analysis consultant for the Long Duration Exposure Facility (launched from STS 41-C in 1984 and retrieved during STS-32 in 1990). In addition to assigned duties, Coleman was a volunteer test subject for the centrifuge program at the Crew Systems Directorate of the Armstrong Aeromedical Laboratory. She set several endurance and tolerance records during her participation in physiological and new equipment studies.

Coleman was selected by NASA in March 1992 and reported to the Johnson Space Center in August 1992. Initially assigned to the Astronaut Office

Mission Support Branch and detailed to flight software verification in the Shuttle Avionics Integration Laboratory, Coleman subsequently served as the special assistant to the Center Director, Johnson Space Center. She served in the Astronaut Office Payloads and Habitability Branch, working with experiment designers to insure that payloads can be operated successfully in the microgravity environment of low earth orbit. As the lead astronaut for long term space flight habitability issues, she led the effort to label the Russian segments of the International Space Station in English and also tracked issues such as acoustics and living accommodations aboard the station. A veteran of two space missions, Coleman has logged over 500 hours in space. She was a mission specialist on STS-73, trained as a backup mission specialist for an injured crew member on STS-83, and was lead mission specialist on STS-93.

Coleman is married to glass artist Josh Simpson. She enjoys flying, scuba diving, sports, and music. She is a member of the American Chemical Society, the Society for Photo-Optical Instrumentation Engineers (SPIE), the American Association of University Women, and the International Womens' Air and Space Museum.

SPACE FLIGHT EXPERIENCE:

STS-73 Columbia (October 20 to November 5, 1995), was the second United States Microgravity Laboratory mission. The mission focused on materials science, biotechnology, combustion science, the physics of fluids, and numerous scientific experiments housed in the pressurized Space lab module. In completing her first space flight, Coleman orbited the Earth 256 times, traveled over 6 million miles, and logged a total of 15 days, 21 hours, 52 minutes and 21 seconds in space.

STS-93 Columbia (July 22-27, 1999) was a 5-day mission during which Coleman was the lead mission specialist for the deployment of the Chandra X-Ray Observatory. Designed to conduct comprehensive studies of the universe, the telescope will enable scientists to study exotic phenomena such as exploding stars, quasars, and black holes. Mission duration was 118 hours and 50 minutes.

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"CHEM SHORTS" For Kids

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

"Teflon: A Guinness Record Holder"

Kids, did you know that teflon is listed in the Guinness Book of World Records as the slipperiest material in the world? The secret lies in its highly stable covalent bonds. Let's learn more about teflon's chemistry and do a little test of its amazing properties.

Teflon is a polymer with long chains of strong carbon-carbon bonds. The long chains are strung together from short tetrafluoroethylene (C_2F_4) molecules. The tradename teflon is actually a short version of the chemical name polytetrafluoroethylene (PTFE). Each carbon in the chain also has two fluorines attached to it, and C-F bonds are exceptionally strong. The C-F bonds are so strong that virtually nothing can break them apart. Not other chemicals and not high temperatures. It is therefore perfect for nonstick coatings on cookware.

Try this test using teflon tape. PTFE tape is available in most hardware stores because plumbers use it to make water-tight seals between threaded pipes. Cut a 10-15 cm length of this tape and stretch it a bit lengthwise. Now stretch it a little bit widthwise and note the difference. Now stretch it again lengthwise and note what happens. Cut a new length and with a permanent marker carefully print your name on the tape. You'll have to write very lightly and hold the ends tightly (perhaps a friend can help) because the tape will want to bunch up. It's tricky but you can do it if you're careful. Slowly stretch the tape widthwise in a few places to distort your name beyond recognition. Now pull the two ends apart and voila! your name will appear again. Redistort and try again. Think about the properties of teflon tape that let you do this.

A common question is: if nothing sticks to teflon, how can teflon stick to a pan? DuPont uses a procedure (called

stratification) in which a mixture of materials is baked onto a metal pan at a high temperature (about 420°C). During this treatment, binder molecules in the mixture attach to the pan, and the fluoropolymer molecules rise to the top of the coating. The result is a non-stick surface that stays in place. Check out www.dupont.com/afs for details on the development of teflon and other applications. Next month: Kevlar!

Reference: "ChemMatters" 10/99, p. 16 by R. Becker; American Chemical Society, Washington, DC.

"ChemShorts" are on the internet at: <http://membership.acs.org/C/Chicago/ChmShort/kidindex.html>

KATHLEEN CARRADO
Elementary Education Committee.

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December, 1999 Vol. 86, No.10.
Published by the Chicago Section of the American Chemical Society, Fran Karen Kravitz, Editor; Gayle E. O'Neill, Business Manager. Address: 7173 North Austin, Niles, Illinois 60714. 847/647-8405. Subscription rates: \$15 per year, \$15 outside North America. Frequency: monthly-September thru June

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The Windows version of this desktop software for easy access to the STN network is now available for Windows; the Macintosh version is due in August. For a complete list of features and benefits, visit:

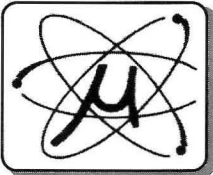
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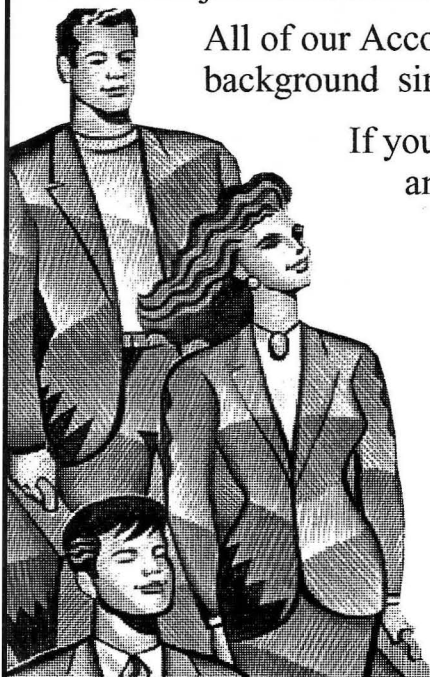
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ACS CORPORATION ASSOCIATES SEED GRANTS PROGRAM

Each year, the Corporation Associates (CA) of the American Chemical Society (ACS) awards starter grants for selected new ACS programs and activities in response to specific requests for funds. This program funds programs that are generally germane to the needs of the industrial chemists. It supports programs that coincide with the CA mission statement, which is to ensure that the Society provides products and services that are of value to the industrial chemists and their employees.

Funded programs in recent years have been to support science education, enhance the professionalism of chemists, improve the image of chemistry, promote safety, and protect the environment. Programs and activities that have received funding include:

Project SEED--its founding grant ACS Division of Industrial & Engineering Chemistry, printing and distribution of the booklet: "Education for Industry"

ACS Student Affiliates Chapter Awards Ceremonies

1998 ACS Presidential Event, "The Future of Chemistry Is All of Us"

ACS Office of College Chemistry, ACS satellite TV seminar on "Elements of Your Chemistry Career"

ACS Committee on Professional Training, printing of "Careers in Industry: Suggestions for Undergraduate Majors in Chemistry, Biochemistry, and Related Disciplines"

Guidelines

- (1) Proposals should be submitted on behalf of a recognized ACS group, such as a committee, division, or staff operating unit, etc. (Documentation of the ACS group supporting this activity must be included in the

report.) Solicitations from individuals will not be considered.

- (2) Funding guidelines for each applicant are generally \$1,000 up to a maximum of \$10,000 per calendar year.
- (3) CA Seed Grants should not be considered continuous support. After a trial period, it is expected the CA-funded activities establish permanent funding via direct support, contributions from other sources, and/or marketing of products and services.

If you wish to apply for a grant, please send your funding proposals with the following information:

Contact Information:

On the cover of the proposal, include the name, affiliation, mailing address, e-mail address, and phone numbers (fax and voice) of the person who will be the contact for the requesting group. If you are working with an ACS staff member, include that person's name and phone number as well.

Background Information:

Describe the problem or opportunity. What has been done before within ACS or by others? Why should it be of concern to both ACS and the chemical process industries? How does it relate to the CA mission (as noted on the back of this brochure)?

Description of the proposed program:

What will be done and by whom? Who will benefit from this effort? What results are expected?

Amount of Money Requested:

What is the total cost of the project or program? What is the total amount you are requesting from Corporation Associates? What other sources of funding have you pursued? Please provide a detailed list of anticipated expenses. proposals will vary greatly in length and detail depending on the amount of fund-

ing requested and the nature of the program. However, they should be as concise as possible.

Send proposals to the American Chemical Society, Office of Corporation Associates, Attention: Vanessa L. Johnson-Evans, 1155 16th Street, NW, Washington, DC 20036.

The Committee on Corporation Associates meets two times a year to review proposals (at the fall and spring national meeting); closing dates for the receipt of applications and supporting material are February 15 and July 1. If the deadline falls on a weekend or holiday, applications will be accepted on the next business day. Applicants are notified of the Committee's decision two weeks after the meeting at which it was considered.

For more information contact the Office of Corporation Associates at 202-872-6101 or by facsimile at 202-872-6098.

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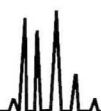
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CHEMCENTER AND ACS WEB SITES MERGE

ChemCenter and the ACS Web site merged in August to form one Web site embodying The American Chemical Society Online. "We're making this move as part of our commitment to continued responsiveness to members and the chemistry community," said Louise Voress, General Manager of ChemCenter.

The decision to combine the two sites is part of an ongoing evolution of Web. "After talking to and hearing from ChemCenter and ACS Web users, it became apparent that having the two separate sites was not as efficient as it could be," continued Louise. "And, as the Web has evolved, people's expectations of the information they can find on Web sites and what they can do there have increased as well. We felt that we could provide a much more valuable and easier-to-use resource by combining the strengths of the two sites."

The new site, which will carry the ChemCenter name and be located at www.acs.org, is scheduled to debut on August 15. Users of the new site can expect to see additional content while they get accustomed to a different look. "We're already consulting with various groups to decide what elements will best suit their needs," she said. This new site will bring one-stop electronic shopping to members who want ACS services or information online.

Louise notes that the new site will have a number of user-friendly features. "We'll maintain our text-oriented look in order to speed download times. We'll make it easy to move throughout the site by letting users know where they are (and how they got there), and by providing consistent menu of links on the left of each page. That menu will also include a search engine that queries content on the ChemCenter, CAS, publications, and Membership Web sites."

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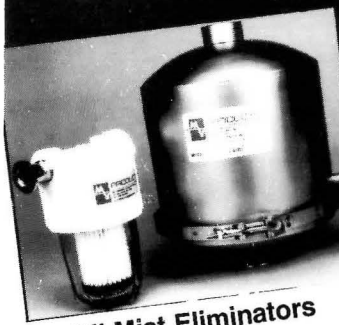
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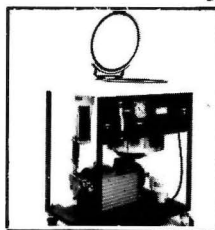
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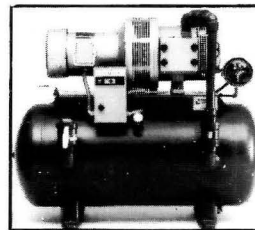
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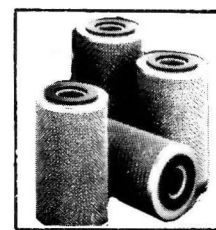
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CHICAGO SECTION, AMERICAN CHEMICAL SOCIETY
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CALENDAR

December 5-10, 1999. The American Chemical Society in cooperation with Virginia Tech presents Polymer Chemistry: Principles and Practice (PCPP9912) at the Four Points Hotel by Sheraton in Blacksburg, Virginia. For additional information call the ACS Short Course Office at (800) 227-5558, ext. 4508.

December 8-10, 1999. The ASTM Committee C-1 on Cement will meet at the Hyatt Regency Hotel in New Orleans, LA. For more information contact Jim Olshefsky, ASTM at (610) 832-9714.

December 12-17, 1999. The 5th US-Japan Symposium on Drug Delivery Systems will be held at the Westin Maui, Kaanaloa Beach in Lahaina, Hawaii. For further information call Constance J. Beal, Symposium Administrator at (617) 258-5290.

January 21, 2000. The Chicago Section American Chemical Society presents John Parlow on "Polymer-Assisted Solution Phase (PASP) Chemical Library Synthesis" to be held at Ambassador in Elmhurst. For more information call the Section office at (847) 647-8405.

February 25, 2000. The Chicago Section American Chemical Society presents West Chris Marshall on "New Support Materials for the Desulfurizations of Heavy Oils" to be held at The Diplomat in Elmhurst. For additional information call the Section office at (847) 647-8405.

March 17, 2000. The Chicago Section American Chemical Society presents Public Affair Night to be held at Como Inn in Chicago. For further information call the Section office at (847) 647-8405.

March 26-31, 2000. The Corrosion/2000, NACE's (The Corrosion Society) 55th Annual Conference and Exhibition will be held in the Orange County Convention Center in Orlando, Florida. For more information call (281) 228-6223.

April 14, 2000. The Chicago Section American Chemical Society presents Peter Maul on "Nanocomposites" to be held at North Shore Holiday Inn in Skokie. For additional information call the Section office at (847) 647-8405.

May 19, 2000. The Chicago Section American Chemical Society presents the Willard Gibbs Award Banquet to be held at Windows Restaurant in Skokie. For additional information call the Section office at (847) 647-8405.

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Infrared Micro, Reflectance, Pyrolysis
Molecular Weights GPC, IV, Dilute Soln.
Microscopy Optical, Stereo-SEM/EDX
Chromatography HPLC, SEC, GC/FTIR
Rheology Dynamic, Capillary
Mech. Test. Strength, Impact, Creep, Fatigue

For capabilities literature please call:
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