

# THE OCTAGON



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Lehigh Valley Section of the American Chemical Society

## *In This Issue:*

October Meeting Announcement	1-2	LVACS Officers	6
November Meeting Announcement	2	News from National ACS	6-7
Chem Shorts for Kids	2-5		

## *80<sup>th</sup> LVACS Meeting*

### *Kutztown University*

**Date:** Wednesday, October 29, 2008

**Location:** Kutztown University

**Reception:** 5:30 PM, Formal Dining Room (SUB 223), various hors d'oeuvres

**Dinner:** 6:00 PM chicken marsala or California vegetarian pasta, salad, vegetable medley, rice, and brownie dessert.

**Meeting:** McFarland Student Union Building, at the conclusion of dinner

**Talk:** At the conclusion of the meeting,

**Menu:**

**Cost:** \$22.00 members and guests; students and retirees \$10.00.

**Contact:** If attending, please email Ms. Donna Moore, [Department of Physical Sciences \(moore@kutztown.edu\)](mailto:moore@kutztown.edu), with your name, institutional affiliation, and choice of entree (chicken or vegetarian). The deadline for reservations is Oct. 23 at 5 p.m.

**Directions:** Directions to campus and a campus map are available on the KU website (<http://www.kutztown.edu/about/campusmap/>). McFarland SUB is building 8 on the campus map. Free parking is available in lots A1 and A2 (no permit needed).

**Speaker:** David Reingold, Department of Chemistry, Juniata College

Professor David Reingold came to Juniata in 1988 with a Ph.D. from the University of Oregon, an A.B. from Dartmouth College, additional research experience at the University of Alberta, Canada, and the University of Chicago, and more than ten years of college teaching experience. He was awarded Juniata's Lindback Foundation Award for Distinguished Teaching in 1992 and the Beachley Award for Distinguished Academic Service in 2001. Dr. Reingold's special interests include synthetic organic chemistry and molecules of theoretical interest. He has received grants totaling more than 1.3 million dollars from the National Science Foundation, the Petroleum Research Fund, the Research Corporation, and the Camille and Henry Dreyfus Foundation to support his research in the synthesis of non-natural products. He is author of numerous articles in such publications as the Journal of Organic Chemistry, Tetrahedron Letters, Synthetic Communications, and the Journal of Chemical Education. Many of these papers had undergraduate students as co-authors. He is also the author of two textbooks published by IA Books, entitled "Organic Chemistry: An Introduction Emphasizing Biological Connections," and "Preparation for Organic Chemistry." Dr. Reingold is an active member of the American Chemical Society and the Council of Undergraduate Research. He holds the H. George Foster Chair of Chemistry at Juniata College.

**Talk:** *Juniata's Organic First Curriculum: Why Isn't Everyone Doing It?*

**Abstract:** Like several other schools, we have begun to

teach organic first at Juniata College. Unlike many of them, we have elected not to teach the standard sophomore organic course to the freshmen. Recognizing that the students do not have the background of sophomores, we begin the course with some introductory material that cannot be treated as review. Recognizing that most of the students taking chemistry at Juniata are biology-oriented, we have incorporated biological applications throughout the course, not just in a final few chapters. In order to make room for all this additional material, some material has been deleted. Information of use primarily to chemists is postponed until junior year, when the audience is mostly chemists. The result is a curriculum that starts with the biological aspects of organic chemistry, does inorganic and analytical chemistry in the sophomore year, and revisits organic in the junior year. The talk will describe the advantages and disadvantages of this curriculum and some data concerning the success of students who have been through it.

### *On Deck!*

#### *805<sup>th</sup> November LVACS Meeting*

##### *Lehigh University*

**Date:** November 12, 2008

**Location:** Lehigh University

Meeting Details to be announced in advance of meeting on the web. Please see [www.esu.edu/lvac](http://www.esu.edu/lvac) for details as the date nears.

**Speaker:** Sally Chapman, Professor of Chemistry, Barnard College

**Talk:** *Strengthening our Academic Foundations: Report from an NSF ADVANCE Project On the Status of Women Chemistry Faculty in Doctoral Granting Universities*

Concerned by the paucity of tenured women faculty members in doctoral granting universities, the ACS with the financial assistance of an NSF Grant undertook Project Progress. Dr. Chapman served as PI on the grant and supervised the study. Written surveys and oral interviews in focus groups and were conducted with 877 men and women, including administrators, faculty members, postdoctoral associates, and graduate

students, during one-day site visits at chemistry and chemical engineering departments in 28 Ph.D.-granting institutions. A preliminary review of the perceptions of the climate for women scientists based on the data collected during these visits has been completed. Discrimination on both the individual and institutional level still persists, and changing this reality presents a serious challenge to advocates of gender equity. Some recommendations are offered by the team which performed the study.

Dr. Sally Chapman was educated at Smith College and received her PhD from Yale. After postdoctoral experiences at UC Irvine and UC Berkeley she joined the faculty of Barnard where she has served multiple terms as Department Chair and has been the holder of the Ann Whitney Olin professorship. Sally has also chaired the ACS Committee on Professional Training and the Petroleum Research Fund Advisory Board. She has more than 30 publications mostly on the thermodynamics and kinetics of gas phase reactions.

#### *Chem Shorts for Kids*

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by Dr. Kathleen A. Carrado, Argonne National Labs  
[kcarrado@anl.gov](mailto:kcarrado@anl.gov)

The Elementary Education Committee of the ACS Chicago Section presents this column. They hope that it will reach young children and help increase their science literacy. Please share with children and local teachers.

Please note: All chemicals and experiments can entail an element of risk and no experiments should be performed without proper adult supervision.

*The following demonstrations and simple experiments can be used to entertain and educate children and show them how much of life is chemistry. And they are fabulous for keeping kids busy while learning on a rainy day!*

#### *Floaters and Sinkers*

Kids, did you ever want to make a liquid in which you could watch objects automatically swirl around? Here you will make a liquid that generates enough carbon dioxide gas to

make objects float and sink. In order to make a really nice display, you will need a one-gallon glass bottle, a full 16 oz box of baking soda, water, vinegar, spaghetti, raisins, and paper clips. This is a good scale to use for a demonstration in front of a class.

Pour the baking soda into the glass jar and fill about 3/4 full. Swirl to dissolve most of the baking soda and allow the rest to settle at the bottom. Add small amounts of vinegar to start the production of carbon dioxide gas bubbles. Then add several paper clips, raisins, and two-inch pieces of spaghetti and watch.

Carbon dioxide gas collects on the surface of the objects and causes them to float to the surface. At the surface, the gas bubbles burst, the object sinks to the bottom, and the process starts again. The gas forms from the reaction of sodium bicarbonate (baking soda) with acetic acid (vinegar).

### ***Staying Dry***

Kids, did you ever wonder how the new disposable diapers that are so thin can really work for your baby brothers or sisters? There are tiny beads in the filling that are able to absorb more than 300 times their own weight of water. Our purpose is to collect these beads and watch how they behave when exposed to water. All you need is an "ultra-absorbent" disposable diaper (Huggies Ultrathin, Ultra-Pampers), water, and table salt.

Cut open the diaper and carefully peel away the cotton-like filling. You will notice that it feels gritty. Separate the small gritty beads from the cotton fibers (tweezers and a small kitchen strainer may help, but are not really necessary). You should be able to easily get about 1/2 tsp. of beads, then pour them into a clear glass. Add about 1/2 cup of water and gently swirl, or pour the mixture back and forth between two glasses until it is too thick. (If you are able to get distilled, deionized water, it works better than hard tap water.) To "unlock" your gel, sprinkle a little salt on top and stir it into the gel. When the water is released the now syrupy liquid can be washed down the drain.

The superabsorbent beads are a co-polymer of poly(acrylamide) and sodium polyacrylate that can undergo physical changes quickly and reversibly with water. Other uses for these polymers are for hydro-mulching plants (places like Frank's Nursery now sell small bags of colored gel for this) and removal of water from jet fuels. Try your experiment again if you like with a drop of food coloring in the water (yellow fits the diaper theme nicely).

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Reference: B. Z. Shakhashiri "Chemical Demonstrations", Vol. 3, chapter 9, p. 368.  
Submitted by Kathleen A. Carrado, Ph.D. (with help from J.

Ellefsen-Kuehn).

Argonne National Lab / (708)252-7968

### ***Money, Munchies, and Magnetism***

Kids, you probably already know that iron is magnetic. In this column, we will demonstrate a way to prove that there is iron metal in two places that you have probably not ever realized: a one dollar bill and a bowl of cereal! You will need a bar magnet (chemists can use long thin stir bars), a dollar bill (or \$5, \$10, \$20 - they all work), and a box of cereal that claims to be high in "reduced" iron (like Total®).

First we will do the money experiment. Hold your bill straight down by the very edge of a short end - a newer bill works best because it will hang straight. With the other hand, slowly move the bar magnet lengthwise along the back of the dollar bill as close as possible without actually touching it. What happens? There should be at least one portion of the bill where it actually moves toward the magnet, or is "attracted". Why is this? Some, but not all, of the ink used in printing paper money is deliberately magnetic. This method is used to try to foil possible counterfeiters, and it also helps aid in the detection of counterfeit money!

In the second experiment, soak a few cups of the cereal in a large bowl of water until it is mushy. Vigorously stir the mixture with a wooden spoon for five minutes. Then add your bar magnet and continue stirring, more slowly, for several minutes. Carefully nudge the magnet around the bottom of the bowl a few times, then let the mixture stand for about ten minutes. Slowly pour off the "mush" and examine your bar magnet. Is it covered with small black needles and specks? This is the "reduced" iron (iron metal) that is actually added to the cereal because it is healthy for us to have iron in our diets. Chemists will find this easy to do using a magnetic stir plate, and a large beaker and stir bar. The more cereal you start with and the more time you give, the more iron you will collect!

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Reference: From a "Weird Science" demonstration given by Lee Marek and Bob Lewis at Nalco on 12/4/90.  
Submitted by Kathleen A. Carrado, Ph.D.  
Argonne National Lab / (708)252-7968

### ***Tangled Molecules***

Kids, did you ever watch someone make spaghetti? If there are just a few cooked strands in a boiling pot of water, chances are they won't touch each other. But when a whole box is cooking the strands can't avoid touching each other. Some molecules are so long and skinny that they act like strands of spaghetti. In this experiment we will see how the long, skinny molecules called polymers can sometimes behave

the same way.

To one-half cup of cold water add anywhere from 5 to 10 heaping tablespoons of household corn starch, one at a time with complete mixing each time. The amount varies with the quality of both the water and the cornstarch. You will know you have the right amount when the following tests work. Do you notice a difference between stirring very slowly and stirring faster, or between slowly lifting the spoon out and quickly pulling it out? How about putting your finger in slowly and touching the bottom of the bowl vs. jamming it in?

The starch mix should act almost like a solid when confronted with a fast motion. This is because the long, skinny starch molecules are very crowded and get tangled up with each other. When a slower motion is used, the molecules have enough time to move out of the way of each other (just like spaghetti!). **Disposal:** The mix gets thicker on standing, so immediately after finishing pour it into a large bowl of water and wash down the drain with lots of water.

-----Submitted by Kathleen A. Carrado and Henry L. Crespi  
Argonne National Lab / (708)252-7968

### *Crystal Cubes and Needles*

Kids, did you ever want to grow your own crystals? This experiment will show you how to make crystals with different shapes. You will need 2 saucers, 2 sheets of dark construction paper, 2 baby food jars with lids, epsom salt, and ordinary table salt. Fill the jars half-full with water. Add 2 tablespoons of epsom salts to one jar, and 1-1/2 tablespoons table salt to the other jar. Secure the lids, shake vigorously 60 times each, and then let them settle for several minutes. Cut circles from the paper to fit inside the saucers. Separately, pour thin layers of the salt solutions over the separate pieces of paper; try not to pour out any of the undissolved salts. Place them in a warm place and wait several days, observing daily.

On the paper wet with the table salt (sodium chloride) solution, you should see small, white, cubic crystals that increase in size each day. Sodium chloride salt crystals have a cubic shape. You should see long, slender, needle-shaped crystals on the paper wet with the epsom salt solution. "Epsom salts" is the common name for this chemical, but it is also called magnesium sulfate. When epsom salts are packaged, the needles of magnesium sulfate are first crushed. By dissolving in water and then allowing for slow evaporation, the needles and cubes are given the chance to build in size.

----- Submitted by Kathleen A. Carrado  
Reference: "*Chemistry for Every Kid*" by Janice VanCleave,  
Wiley: NY, 1989.  
Argonne National Lab / (708)252-7968

### *Really Food Coloring*

Kids, did you know that you can draw pictures with fruits and vegetables, and that their colors can be changed using chemistry? To do this activity you will need an assortment of foods such as a radish, red cabbage, a carrot, grape juice, and spinach leaves. You will also need a sheet of white construction paper, vinegar, a 50/50 solution of baking soda in water, and cotton swabs. Rub the skins of the foods onto the paper, making three circles of color for each food, and label them. Use a swab for the grape juice. Again using a swab, rub the vinegar onto one circle of each food and the baking soda solution onto the second circle. Leave the third circle alone as a control. What do you observe?

Among other things, there are chemical compounds called "anthocyanins" in some plants. These compounds have different colors depending upon the strength of an acidic or basic solution. The vinegar (acetic acid) is a weak acid and the baking soda (sodium bicarbonate) solution is a weak base. Because of their ability to change colors, anthocyanins are one kind of indicator for determining the strength of an acid or base. Your results should have showed you that radishes, red cabbage, and grape juice all contain anthocyanins. They are also present in the petals of red roses. The major pigment in many green plants is chlorophyll, while that in carrots is called carotene; these compounds do not act as indicators. Try other fruits, vegetables, or plants with your new chemical testing system!

----- Submitted by Kathleen A. Carrado, Argonne  
National Lab

Reference: Ann Benbow of ACS, Coordinator of Pre-High School Science Office, who presented this at the CHEERS/PACTS Workshop on 4/17/93 at W. Aurora H.S.

### *Totally Tubular Plants*

Kids, as you know, plants need water to live. Water goes from the root, up the stem, and into the leaves. Did you ever wonder how the stem is specially made so that water can travel up it? This experiment will help you find out. You will need a glass one-third full of water, blue food coloring, and a 8-10" stalk of celery that has been freshly cut on both ends by an adult partner. Notice the small dots on the narrow end of the celery stalk. Add 5 drops of the food coloring to the water and place the wide end of the celery in the water. After a few hours you should see that the little dots on the top of the celery are now blue. Use a fingernail to start pulling away one of the blue tubes at the top. Can you pull it all the way down and remove it totally from the stalk? Try another experiment with two new celery stalks. Carefully remove all of the tubes from only one new stalk and then place them both in the blue

water. Compare them after 24 hours.

This activity should help you discover how water can move up through a plant stem. Many plants have a series of tube-like cells that bring water up, and another set that takes nutrients produced in the leaves down the plant. After 24 hours, the celery without the tubes should be much more limp than the piece with the tubes intact. You might also be surprised to see what happens to a white carnation after being placed in a glass of water with food coloring for several hours; try other food colors and make a multi-colored bouquet! (Hint: cut about 1" off the bottoms of the of the carnation stems first).

----- Submitted by Kathleen A. Carrado, Argonne National Lab

Reference: *WonderScience*, 7(5), May 1993.

### ***Aluminum Trivia***

Kids, let's explain why chewing an aluminum foil spitball can really hurt some people, while for others it is just a weird piece of gum. The difference is because some of us have silver fillings in our teeth. It turns out that aluminum atoms lose their electrons very easily. In the presence of our mildly acidic saliva, which acts as a catalyst, we have what amounts to a crude electric battery. Electrons flow from the aluminum to the silver amalgam filling. The current is felt by the nerves of our teeth and causes a downright unpleasant zing!

Aluminum foil will begin to decompose in the presence of many other acidic substances in a process called oxidation. Acids like to oxidize obliging metals. Some common acidic foods include ketchup which has a pH of 3.8 (7 is neutral), or a cola soda which is even more acidic with a pH of 2.7. Tell any cooks you know to never wrap a meatloaf glazed with ketchup or tomato sauce in aluminum foil for storage. After several hours the result of this contact is a grayish-black disgusting mush of aluminum oxide.

Brainteaser: why doesn't a full aluminum cola can dissolve? Chemistry solves that problem, too. The inside of the can is coated with a harmless but effective protective surface made up of long molecules called polymers (in short, a plastic coating).

---Submitted by Kathleen A. Carrado, Argonne National Lab  
Reference: (from p. 121 of *The Straight Dope* by Cecil Adams, 1984).

### ***Giant Bubbles***

Kids, you can make gigantic soap bubbles with a mixture of liquid soap or detergent, glycerin, and water. The glycerin is the secret ingredient that adds strength to the bubble solution. Mix together 1 part soap with 1 part glycerin and 6 parts water (distilled water works best). Pour into a large tray or cookie sheet.

Form a 12-inch circle with a handle out of stiff wire about the diameter of coat-hanger wire. You can try an actual coat hanger, but they are often coated to prevent rusting; this coating prevents the bubble solution from clinging to the wire. Dip the wire circle into the bubble solution and bring it out at an angle so that a film of solution fills the inside of the circle. Now sweep the wire through the air to form a large bubble. A twist at the end of the sweep helps to loosen the bubble from the wire.

A bubble is really three bubbles in one. There's an outside layer of water, a middle layer of soap and glycerin, and an inner layer of water. When bubbles these big break, they leave a lot of soap behind. Be prepared to wipe it up (cleaning the floor at the same time!), or make your bubbles outside.

----- Submitted by Kathleen A. Carrado, Chair Elementary Education Committee

Reference: "Mr. Wizard's Supermarket Science", Don Herbert, 1980, p. 48.

### ***An Incredible Edible Landfill***

Kids, how much do you know about how your local landfill actually works? Let's build one of our own while we learn. A Keebler© ready-made chocolate pie crust will be our hole in the ground. Before any trash can go in, a landfill hole is lined with pipes to remove liquids from garbage and decomposition. Place Twizzler© licorice whips along the bottom of the crust for this purpose. Most real sanitary landfills surround the hole with an impermeable clay lining to prevent harmful waste from leaving the area; the foil tin containing the pie crust can represent this lining. Mix some "garbage" made of nuts, raisins, M&Ms, etc., into vanilla pudding to make your trash, and cover the bottom of the crust. In sanitary landfills, garbage is covered with dirt each day. Cover your vanilla pudding garbage with a chocolate pudding dirt layer. Make as many alternating pudding layers as you can until the crust is full. Make sure that the top is a chocolate pudding dirt layer.

The garbage we bury never really goes away completely. Not much decomposition occurs because air and moisture - needed by garbage-chewing microorganisms - are sealed out. Many landfills become parks, ski hills, and golf courses. Color some shredded coconut with green food coloring and sprinkle it over the dirt to look like grass. Your landfill is now complete and ready to eat! Dig in!

-----Submitted by Kathleen A. Carrado, Chair Elementary Education Committee

Reference: "Solid Waste Activity Packet for Teachers", Ill. Dept. of Energy and Natural Resources, page 70. (Contact person: Kathy Engelson, Supervisor for School Education, IDENR, 217-524-5454. Also Jean Dehorn or Carol Fialkowski, Chicago Academy of Sciences, 3

## *LVACS Officers - 2008*

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T. Michelle Jones-Wilson (see above)

## *News from National ACS*

### ***Mentors Wanted!***

The U.S. National Chemistry Olympiad -A Program Sponsored by the American Chemical Society Invites You to Apply for the Mentor Position.

College and High School educators are invited to apply for a position as mentor for the U.S. National Chemistry Olympiad program. Duties during the three-year term include helping to conduct the national study camp for high school students held at the United States Air Force Academy located in Colorado during mid-June 2010, 2011 and 2012. Generally, in their second and third year, mentors accompany four U.S. student competitors to the International Chemistry Olympiad (IChO). During the competition, the mentors will serve as members of the IChO Jury. The 2011 and 2012 IChO events are scheduled to be held in Turkey and the U.S., respectively. Most students at the study camp have completed Advanced Placement Chemistry or the equivalent; therefore instruction at the camp is well beyond the level of high school general chemistry courses. The curriculum also includes considerable laboratory work.

Successful applicants are expected to have a background in one or more of the areas of organic, inorganic, analytical, physical, or biochemistry with classroom experience and should demonstrate involvement with students in special projects or activities. Applicants must be prepared to make a three-year term commitment as outlined above. ACS pays all expenses and travel costs, as well as an honorarium. Interested individuals may obtain an application form at: [www.acs.org/olympiad](http://www.acs.org/olympiad) or by contacting:

Margaret Thatcher, Senior Program Associate  
U.S. National Chemistry Olympiad Program  
American Chemical Society  
1155 Sixteenth Street, N.W.  
Washington, DC 20036  
(202) 872-6328

The deadline for completed applications is **January 27, 2009**. Applicants must also arrange to have three letters of reference forwarded to Cecilia Hernandez by February 7, 2009 at the above address. For more information about the USNCO program visit [www.acs.org/olympiad](http://www.acs.org/olympiad).

### **Leadership Development Award for Younger Chemists**

The Younger Chemists Committee (YCC) offers travel awards to attend the ACS Leadership Institute and the Younger Chemists Leadership Development Workshop, held in January 2009. The workshop is designed to help early-career chemists develop into highly skilled leaders in the Society and in their chosen profession. Participants will have the opportunity to network with ACS leaders from local

sections, divisions, regions and ACS governance. The application deadline for this award is October 1, 2008.

This is a wonderful opportunity to enhance your leadership skills. For more information, visit [www.acs.org/diversity](http://www.acs.org/diversity) or call 1-800-227-5558 ext. 8724.

### **2008 Member-Get-A-Member Campaign: Deadline Approaching**

The December 31, 2008 deadline is approaching!

There are three months left to recruit for the 2008 Member-Get-A-Member (MGM) Campaign. Every Member of the American Chemical Society that recruits one new paid member will receive a 2008 Periodic Table of the Elements Throw. For MGM guidelines and to download an official M G M application, please go to [www.acs.org/memberGetmember](http://www.acs.org/memberGetmember).

### **Free Shipping Discounts with FedEx(r) for ACS Members**

NEW! ACS members can now enjoy significant savings on envelope and small parcel shipments sent via FedEx(r), one of the nation's premier small package carriers. All ACS members can receive discounts up to 26% on domestic and international shipments sent via FedEx(r), and up to 20% on printing and copying services at FedEx Offices. For more information, and to enroll online, go to [www.partnership.com/65ACS/](http://www.partnership.com/65ACS/).

### **Why Take an ACS Webcast Short Course?**

Few companies are immune from the economic hardships in the headlines and many budgets have been trimmed. But it is still crucial to your career to engage in continuing education to expand your skills and stay abreast of new topics. So save your time and money and take a look at the courses available online through the American Chemical Society. ACS offers a wide variety of webcast short courses and our fall schedule is open for registration now.

ACS courses are well-respected throughout the industry. ACS Webcast Short Courses provide the same quality training that ACS has long been known for, but, because the courses are presented over the Internet, they offer added convenience and flexibility.

**Small Class Sizes and In-Depth Personal Attention** – The average class has 12 participants, and our instructors are available by email in-between sessions so you will have ALL your questions answered.

**Interactive** – We've chosen a great technology that allows you to participate just as in a live class; you can even write on the whiteboard.

**Ready when you are** – Scheduled class sessions are the best way to get the most out of your experience. But if you miss a session, it's okay. All class sessions are recorded and ready

for viewing when you're available.

**More Application Time** – Instead of getting all the information in a few days, you have time between sessions to apply what you've learned and come back to class with your burning questions. Overall, an extended learning schedule means more impact for you.

There are expanded course offerings in analytical, organic, pharmacology, engineering, instrumentation, and other areas. For the full list of Webcast Short Courses and more information on available discounts, visit [www.acs.org/webcourses](http://www.acs.org/webcourses).

### **ACS Careers Industry Forum -Monthly Teleconferences featuring Luminaries in the Chemical Sciences.**

We are working hard to keep you up to date on cutting edge industrial issues affecting your current and future employment needs. Make informed decisions about your career and take control of your career path.

Please join us on the 2nd Thursday of each month from 2 to 3 pm to discuss economic and employment trends with top industry executives in the chemical sciences. Register now.

This is a free service via conference call. Check us out for future new and innovative career services programs. We want to hear from you, please post comments on our blog at [www.acs.org/careers](http://www.acs.org/careers)

### **Soft Skills Training: Do you have what Employers want?**

ACS Careers has joined forces with Harvard Business Publishing to deliver 42 online business and professional advancement courses. The course library includes topics such as Career Management, Negotiating, Leading and Motivating, Presentation Skills, Strategic Thinking, Team Leadership, Time Management, and many other high-quality courses.

Look for more information at [www.acs.org/professionaldevelopment](http://www.acs.org/professionaldevelopment).

### **Eli Lilly/WCC Travel Award**

Eli Lilly and Company and the American Chemical Society (ACS) Women Chemists Committee (WCC) sponsor a program to provide funding for undergraduate, graduate, and postdoctoral women chemists to travel to ACS meetings to present the results of their research. Through this program, Eli Lilly and Company and WCC continue to increase the participation of women in the chemical sciences. Please submit your application by February 15, 2009 for travel between July 1 and December 31, 2009 For additional information please go to [www.acs.org/diversity](http://www.acs.org/diversity) > Awards & Recognition > Eli Lilly/WCC Travel Award.