



FEBRUARY MEETING NOTICE – AICHE'S ANNUAL STUDENT NIGHT

- Topic:** Reactions Beyond the Plant –
Working with Your Community
- Where:** William Pitt Student Union
University of Pittsburgh – Oakland Campus
- When:** Wednesday, February 19, 2002
- Time:** 5:45 PM Registration
6:00 PM Reception & Student Poster Session
6:45 PM Dinner
7:45 PM Presentation
- Menu:** Please select from the following menu items:
- ❖ Medallions of Pork – Twin center cuts of pork served with a Madeira wine sauce
 - ❖ Cornish Game Hen – Stuffed with wild rice and topped with a creamy Veloute sauce
 - ❖ Orange Roughy – New Zealand fillets topped with Mandarin oranges and Grand Marnier Sauce
(Vegetarian option available upon request)
- All entrees served with soup, salad, potato, vegetable, rolls and butter, beverage, and dessert.
- Cost:** \$20.00 Members
\$15.00 Students / Unemployed Members
\$25.00 Non-members

FOR THE FEBRUARY MEETING,
RSVP NO LATER THAN MONDAY FEB 10TH, 2003

To: Mr. Nathan Peters, Vice-Chair

Tel: 412-889-7833

Email: npeters@larocheind.com

PLEASE PAY AT DOOR

Name _____

Menu Selection _____

Email _____

Phone _____

CANCELLATIONS: If you must cancel your meeting reservation, please do so no later than 24 hours prior to the meeting. If you do not provide a cancellation notice, you will be invoiced for the cost of your meal.

~ About the Speaker ~

Larry Berger of Mine Safety Appliances Company (MSA) will review a case study and tips regarding the role of the engineer in ensuring good relations with those who live near industrial facilities.

Lawrence M. Berger is Director, Environmental Affairs, in the Corporate Law Department at the world headquarters of MSA. His responsibilities include developing compliance strategies for emerging waste, wastewater, air pollution control, storage tank, and hazardous materials transportation regulations, as well as providing in-house expertise related to environmental training and auditing, CERCLA issues, product stewardship, and other broad environmental affairs issues. Prior to joining MSA in 1992, Mr. Berger spent 9 years in the environmental consulting industry where he was involved in permitting and compliance projects for the iron and steel, automotive, oil, and chemical industries.

Active in the community, Mr. Berger is a past Chair of the Allegheny Mountain Section of the Air and Waste Management Association and on the Board of Directors of Pittsburgh International Children's Theater. He also has been on the board of Radio Information Service (a non-profit organization that broadcasts current printed material to blind and visually-handicapped people in 11 local counties). In 1996 and 2000, Mr. Berger was a principal workshop leader at regional Rotary International ethics symposiums attended by over 500 area high-school students.

Mr. Berger also has been a broadcaster at Pittsburgh public radio station WYEP-FM for 27 years, and hosts a popular Saturday morning family radio program he created in 1978. This program, called "The Saturday Light Brigade", is one of the longest-running public radio programs in the country.

Mr. Berger holds a dual degree in Chemical Engineering and in Engineering and Public Policy from Carnegie Mellon University.

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LETTER FROM THE CHAIR

Hello everyone!

I'd like to thank everyone who made last month's meeting a huge success, especially Ed Moretti, Jill Merrill at AWMA, and our speakers, Suzanne Thomas, Gary Antonella, and Stephen Gould. We all appreciate your efforts.

February is a very busy month for the Pittsburgh Chapter of AIChE. This should be everyone's first copy of the "e-Catalyst". As with any new endeavor, there are bound to be some problems. If there are, please contact me or our newsletter editor, Mariangela Peters.

Events this month will include our second "Career Pathways" workshop on Saturday, February 1st. Two weeks later, we will be hosting a table at the Carnegie Science Center on February 14-15 for National Engineer's Week. Please contact Nancy Hirko to volunteer. It's a lot of fun, and a great way to work with the kids in our area.

Finally, on February 19th we have our annual Students' Night. A great deal of our commitment as AIChE members is to encourage our profession. Student Night offers a great opportunity to do just that with our local area chemical engineering students. Please come and show your support by giving those students the chance to interact with true chemical engineering professionals. See you on Wednesday the 19th,

**JoAnn Truchan
AIChE Pittsburgh Section- Chair**

FEBRUARY MEETING – CONT.

THE WILLIAM PITT STUDENT UNION IS LOCATED ON THE UNIVERSITY OF PITTSBURGH CAMPUS IN OAKLAND, AT THE CORNER OF BIGELOW BLVD AND FIFTH AVENUE.

PARKING IS AVAILABLE AT THE SOLDIERS AND SAILORS GARAGE, ACROSS THE STREET.

A LETTER FROM OUR STUDENT OUTREACH CHAIR

Dear AIChE Pittsburgh Members,

To a Chemical Engineering student, the February meeting is the most important one offered by our section. Students and their universities are the focus of the evening. With the intermixing of students and professionals over dinner, the evening is an ideal networking opportunity.

Our section is comprised of engineers in many fields/industries with varying degrees of education and professional experiences that can be shared. For the night to be very successful, students and professionals need to interact.

From personal experience, most students are inquisitive, but walking up to an engineer whom you do not know is not an easy task. As professionals, we should attend if possible, be warm and inviting, and if necessary 'take off the engineering hat.'

Thank you,

David Missenda

AIChE Pittsburgh Section – Student Outreach Chair

NATIONAL ENGINEERS WEEK - VOLUNTEERS NEEDED !

Once again, our local section will sponsor a table at the Carnegie Science Center in celebration of National Engineer's Week.

Volunteers are needed to help staff the table on Friday, February 14 and Saturday, February 15, 2003 from 9 am to 5 pm each day. We will again be making superballs and the gumdrop chemical models that have become so popular.

If anyone is interested in interacting with the public - especially children - please contact Nancy Hirko at or (412) 826-3636 or nhirko@air-comp.com Please consider volunteering for this worthwhile event! We sure could use the help!!



MEMBERSHIP CORNER

Dear Members,

We are constantly updating our local membership database. Please send all change of address notifications to our Membership Chair:

Holly Gray
Baker Environmental, Inc
Airport Office Park, Bldg 3
Coraopolis, PA 15108
hgray@mbakercorp.com

If you have not already done so, please verify your updated e-mail address with us so that you will continue to receive monthly newsletters!

Thank you!

Please sign me up for the local Pittsburgh Section of AIChE

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

Business Phone _____

Residence Phone _____

Email _____

Annual Dues are \$16.00. Make check payable to "AIChE Pittsburgh Section" and send to our Treasurer:

Leigh Anne M. Wacker,
CFX Software & Services,
Omega Corporate Center
1260 Omega Drive
Pittsburgh, Pennsylvania 15205



NATIONAL ENGINEERS WEEK
FEBRUARY 14-15, 2003

For Information 412.237.3400
CarnegieScienceCenter.org

\$2 OFF general admission to
CARNEGIE SCIENCE CENTER

Receive \$2.00 off General Admission.
 Includes Exhibits, Planetarium, Submarine & UPWC SportsWorks.
 Limit four (4) per coupon. Tickets subject to availability.
 Coupon must be redeemed to receive discount. Valid February 14-15, 2003.

Carnegie Science Center
 One of the four Carnegie Museums of Pittsburgh

CAREER CORNER

Career Pathways: Your Personal Marketing Campaign

In this current economic climate, keeping up our job-hunting skills is becoming ever more important. Some of us haven't had to look for a while and our skills are bit rusty. Others want to keep sharp.

Either way, join us for an informal workshop on Saturday, February 1st as Jonna Martin of *AdvanceMe Associates* goes over some tips on how to present the right image, whether it be to an interviewer or a client.

Winning Interview Presence: *Image Enhancing Strategies*

Saturday, February 1, 2002
 10:00 am

The Pittsburgh Oratory Newman Center
 4450 Bayard Street, Oakland

Please **RSVP** by January 31st
 to JoAnn Truchan at
jtruchan@achd.net or
 (724) 695-1945

The workshop is free of charge, and coffee and donuts will be provided.



A BRIEF HISTORY OF THE MCAFFEE AWARD

This May, we will be presenting the McAfee Award to another distinguished Chemical Engineer in the Pittsburgh area. Thanks to J. Finley Bush for providing this brief history of the award.

Purpose: To provide recognition to a local member of AIChE who defines the utmost in professionalism to the profession, personal life, and community, and to provide publicity and recognition to the local section in Pittsburgh and national AIChE through publication of the award in CEP and local newspapers.

- The spirit of the award requires the following three things:
 - Service to AIChE
 - Service to the Profession
 - Service to the Community
- Awardees are presented with a plaque and honorarium.
- The event is held every two years, and it is a gala affair with keynote speaker and personal comments made by co-workers, associates, and members of the community;
- *This Award is not to be taken lightly.* It provides a forum for the local section to publicize the work of notable members and the profession to the public.
- To insure the local section receives recognition at both the local and national level, public relations work with local newspapers and CEP is a necessary action.

The 2003 McAfee Award Banquet will be held at the Fox Chapel Golf Club on Tuesday, May 20th. Watch upcoming issues of The Catalyst for additional details.

THANK YOU!

Thank you to all our AIChE Members who volunteered for the 2003 Future Cities Competition at the Carnegie Music Hall in Oakland!

After months of hard work, area school children presented their projects on Saturday, January 18, 2003.

Our AIChE Chapter provided volunteer mentors, judges, and an Award for the Best Use of Recycled Materials. Frick International Studies School was the proud recipient of our Award... Details in the March Catalyst!

NEWSLETTER DEADLINE

**THE DEADLINE FOR THE MARCH NEWSLETTER IS
FEBRUARY 13, 2003.**

Please submit information to:

**Mariangela Peters
Sony Electronics - AG
1001 Technology Drive
Mt Pleasant, PA 15666**

**mariangela.peters@am.sony.com
724-696-8234**

AICHE NATIONAL CHAPTER NEWS

CAREERENGINEER IS OPEN FOR BUSINESS

AIChE's full-service job and resume posting resource is available to both engineers and employers, and is helping to take the "monster" out of job search and recruiting. A free service for engineers, CareerEngineer is a targeted and cost-effective recruiting alternative for employers. Go to <http://careerengineer.aiche.org> for more information or to enroll.

INTRODUCING LOCAL SECTIONS' ONLINE NEWSLETTER:

Local Section leaders and members can find the most current Local Section news, highlights, resources, deadlines and reminders, online at <http://www.aiche.org/mag/sections/news.htm>



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1/12 Page	\$30

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Please contact Mariangela Peters at
mariangela.peters@am.sony.com
 or 724-696-8234 for more information.

ESWP AWARD

John C. (Jack) Mascaro, PE., will be honored with the William Metcalf Award at the upcoming annual banquet of the Engineers' Society of Western Pennsylvania (ESWP). Mr. Mascaro has been deeply involved in the engineering profession since receiving his BSCE from the University of Pittsburgh in 1966. He is currently president and CEO of Mascaro Construction Company, L.P., which he founded in 1986.

The Metcalf Award is named after William Metcalf, a pioneer in the mechanical and heat treatment of steel, and the first president of ESWP, in 1880-81.

Lynn Swann, former Steelers great and a recent inductee into the NFL Hall of Fame, will speak after the banquet, which will take place on February 19, 2003, at the Pittsburgh Hilton and Towers, beginning at 6pm. The ESWP Annual Banquet is open to all members of AIChE, since we are affiliated with the ESWP.

For reservation information, please call ESWP at (412) 261-0710, X 10 or email c.bisacca@eswp.com. Black Tie optional. Additional information can be found at eswp.com.

BEHIND THE CONTACT LENS

If you are reading this edition of The Catalyst through a pair of contact lenses, you can thank a Czech chemistry professor named Otto Wichterle...

In 1952, while on a train ride to Prague - Wichterle was a citizen of Czechoslovakia - he observed a fellow passenger reading about metal implants for eyeball replacement. He told the traveler "It would be much better to invent some plastic for implants that would be compatible with the surrounding tissue."

Wichterle was a chemist who studied polymers, and he was fascinated with making polymers compatible with the human body. His fellow passenger turned out to be the secretary of a health ministry commission looking into the use of plastics for medicine. The commission ordered Wichterle to make such an implant, but embarrassingly he had to tell them that he had no such material - adding quickly that he was sure he could synthesize some.

He started looking at hydrophilic (water-loving) polymers, and even before he started, he began filing out patents on potential uses, one of which was for soft contact lenses. At that point his life changed dramatically: The Czech Communists party dismissed him from his job calling him politically unreliable.

Wichterle focused his newly found free time on finding ways to turn his soft, water-loving polymer in a pliable lens. In his kitchen he built a mold the shape of a lens, mounted it on a child's erector set, then used the motor of an old phonograph to spin the mold. Wichterle sprayed polymer on the spinning shape, and created a thin, perfectly formed contact lens.

By early 1962 he and his wife, a doctor, had produced five thousand of them. Wichterle traveled around the world distributing handfuls of the lenses to interested ophthalmologists and optometrists. "The reaction was unanimous," he later said, "They were a joke, an interesting subject, but without any wider application."

Nothing much happened until he demonstrated his contact lens for some U.S. Patent lawyers touring Prague. He recalled: "I took a lens out of my eye, threw it on the floor, stepped on it, then washed it with my mouth and put it back in my eye." The lawyers were impressed enough to buy the patent rights.



The Czech government received the lion's share of the money; Witcherle got almost none. He took the loss philosophically, saying later: "I would have had problems with what to do with such an amount of money." Instead he just kept inventing - earning hundreds of patents on biomedical plastics and synthetic fibers. Witcherle earned huge academic distinction and international recognition for inventing the contact lens - although he always wore glasses.

Source: [http:// www.engineerguy.com](http://www.engineerguy.com)

YOUR MORNING CUP OF JOE

Coffee is an American favorite.... perhaps a worldwide favorite. Every morning, people everywhere enjoy a fresh cup of coffee to help them start the day.

A few years ago, people would shy away from coffee that had been decaffeinated. It seemed to lack the robust flavor and smell that regular coffee had. With the introduction of "naturally" decaffeinated coffee, it was given a second chance to succeed in the market place. It was indeed very successful. Suddenly, people had difficulty telling the difference between coffee that had been decaffeinated and that which still contained its usual amount of caffeine. What happened? How did engineers pull off this seemingly impossible task?

Decaffeination Method

While some people may have started to believe that by removing the caffeine, engineers were destroying the quality of the coffee. While this is not entirely untrue, it was not the absence of the caffeine that was altering the coffee, it was the absence of the flavorful and aromatic compounds that lower the coffee's appeal.

Traditionally, caffeine was removed with a solvent called methylene chloride. Methylene chloride was contacted with the coffee and the caffeine was dissolved and removed later. Unfortunately, many of the other compounds in coffee (those responsible for its flavor and smell) were also soluble in methylene chloride. Thus, during decaffeination, engineers were "killing" the flavor of the coffee.

New Solution

In addition to the coffee quality concerns, these were additional motivation to replace methylene chloride as a solvent. Most governments began targeting environmentally hazardous solvents (such as methylene chloride) as the subjects of tight regulations. Not to mention concerns about residual solvent being left in the coffee.

In the search for another alternative, the use of solvents termed "supercritical" solvents looked like an attractive solution. "Supercritical" refers to solvents that are at temperatures and pressures beyond their critical points. For example, the critical pressure of a substance is the highest pressure at which the substance can exist as a true liquid, no matter what the temperature. However, the gases at supercritical conditions are nearly as dense as some liquids due to the extreme temperature and pressure. This makes these gases ideal for solvents.

The most popular supercritical fluid (gas) is supercritical carbon dioxide. The reason for its popularity is its relatively mild critical points of 31.1 °C and 73.9 bars. It is also abundant and mostly benign. Other solvents, such as water, have much higher critical points (374 °C and 222.3 bars). Thus it would cost much more to use water as a supercritical fluid because larger compressors and thicker vessels would be necessary. Luckily for engineers, they also found that the most popular supercritical solvent (carbon dioxide) also had another advantage in the decaffeination process. While it easily removed most of the caffeine from the raw coffee beans, the aromatic compounds responsible for taste and smell were largely left in the beans.

The Process

The raw beans are placed into a batch decaffeinator vessel. Supercritical carbon dioxide is run through the beans for about 10 hours, which removes nearly 97% of the caffeine. The caffeine-rich carbon dioxide is then contacted with water in a caffeine scrubber. This transfers nearly all of the caffeine in the carbon dioxide to the water. The caffeine is easily removed from the water in a reverse osmosis unit. Once the carbon dioxide is cleaned of caffeine, it can be recycled and the same can be said for the water.

Source: [http:// www.cheresources.com](http://www.cheresources.com)



AICHE PITTSBURGH SECTION 2002-2003 OFFICERS

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2002-2003 Tentative Monthly Meeting Schedule

Date	Topic	Location
February 19, 2003	Student Night	University of Pittsburgh
March	Technical Presentation	TBA
April	Plant Tour - Sony Electronics	Mt. Pleasant, PA
May 20, 2003	The McAfee Award	Fox Chapel Golf Club

Mark your calendars!

For AIChE's Upcoming Events:

Feb 1, 2003	Saturday Seminar	Career Pathways Workshop "Winning Interview Presence"
Feb 14-15, 2003	Outreach Event	National Engineers' Week At the Carnegie Science Center
Feb 19, 2003	Monthly Meeting	Annual AIChE Student Night



The Catalyst

American Institute of Chemical Engineers
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Pittsburgh, PA 15222-2097



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