



OCTOBER MEETING NOTICE

Topic: Revitalizing the Chemical Engineering Curriculum:
A Nationwide Workshop and Local Plans

Speakers: Dr. Jim Schneider, Carnegie Mellon University
Dr. Joe McCarthy, University of Pittsburgh

Where: Engineers' Society of Western Pennsylvania
337 Fourth Avenue
Pittsburgh PA 15222

When: Thursday, October 30, 2003

Time: 6:00 PM Networking/Social (Cash bar provided)
6:45 PM Dinner
7:30 PM Presentation

Menu:

- ❖ **Salmon Nicoise** Pan-seared and topped with tomato, garlic, and chardonnay cream
- ❖ **Chicken Breast** Stuffed with sweet sausage, spinach, and provolone
- ❖ **Vegetable Lasagna**

All entrees include fresh garden salad with choice of dressing, rolls, starch, vegetable, dessert, and beverage.

Cost: \$25.00 Members
\$20.00 Students / Unemployed Members
\$30.00 Non-members

RSVP NO LATER THAN
FRIDAY OCTOBER 24TH, 2003

TO: Dr. Jim Schneider, Vice-Chair
Phone: 412-268-4394
E-mail: schneider@cmu.edu

Your RSVP must include your **Name, Menu Selection, Email Address, and Phone Number.**

PLEASE PAY AT DOOR

CANCELLATIONS: If you must cancel your meeting reservation, please do so no later than 48 hours prior to the meeting. Otherwise, you will be invoiced for the cost of your meal.

~ About the Presentation ~

Does Chemical Engineering have an identity crisis? Over the last five years or so, several departments, including Illinois, Pennsylvania, Cornell, Wisconsin, Ohio State, Georgia Tech, Johns Hopkins, Colorado, and RPI, have changed their names to "Chemical and Biological Engineering" or "Chemical and Biomolecular Engineering." This decision reflects a growing desire among academics to retool the Chemical Engineering curriculum to better address an increasingly diverse job market, new technological advances, and in some cases, declining enrollments. Since most curricula have not changed substantially since the 1960's, the time may be right to re-evaluate the concepts we teach to undergraduates so we can continue to attract the best and brightest students to our field and prepare them for a new work force.

Earlier this year, the National Science Foundation (NSF) and the Council for Chemical Research (CCR) sponsored a series of three workshops charged with developing a 21st-century curriculum for Chemical Engineering, with faculty from departments across the country in attendance. In this presentation, Prof. McCarthy and I will present the outcomes from those workshops, and more importantly, get input from students, engineers in industry, and academics on some of the new educational initiatives that resulted from these workshops. Key issues that were discussed include the extent to which biotechnology, computational chemistry, and nanotechnology should be included and how a quantitative, multiscale, systems view of chemical and biological transformations can be cultivated.

In addition, Prof. McCarthy will discuss a new initiative at the University of Pittsburgh that breaks the Chemical Engineering coursework into six "pillar" courses using a pedagogical technique called "block scheduling."

CONTINUED ON PAGE 2.

**LETTER FROM THE CHAIR**

Dear Members,

I hope that everyone has been taking in some of the scenic fall foliage, and enjoying the first few football games of the season.

I would like to thank Sharon Thompson and all of our tour guides at Sunoco Chemical for a very well-received presentation and site visit last month. We also had a number of our student members at the meeting - a trend that I hope to see continue!

On the subject of student members, I encourage all of our professionals to attend this month's meeting, regarding chemical engineering curriculum. This is an opportunity for you to hear about and possibly influence the training of future engineers in our field.

Please mark your calendar for our Monthly Meeting on October 30th. I look forward to seeing you there!

Sincerely,

Nathan Peters
AIChE Pittsburgh Section- Chair

OCTOBER MEETING – CONT.

Block scheduling increases faculty-student contact hours, strengthening faculty-student interactions to accommodate diverse learning styles, attack open-ended problems, and stimulate life-long learning. Prof. McCarthy and his colleagues at Pitt have received a \$1.5 million grant from the NSF to implement the initiative.

DIRECTIONS TO THE MEETING:

Engineers' Society of Western Pennsylvania
337 Fourth Avenue
Pittsburgh PA 15222
www.eswp.com

The Engineers' Society is located in Downtown Pittsburgh near the corner of 4th Ave. and Smithfield St. 4th Avenue is a one-way street, so you need to approach it from Stanwix St. to get to ESWP. ESWP and an adjacent parking lot are on the left side of 4th avenue.

A map in PDF format is available at www.eswp.com.

From the Ft. Pitt Tunnel:

Take the Liberty Ave. exit, turn right on Stanwix St., then left on 4th Avenue.

From the north via I-279:

Take the Ft. Duquesne exit to Ft. Duquesne Blvd., turn right on Stanwix St., then left onto 4th Avenue.

From the east via I-376:

Take the Stanwix St. exit off I-376 W, turn right on Stanwix St., then right onto 4th Avenue.

Parking:

Parking is available in a lot adjacent to the ESWP. On-street parking is also available on 4th Avenue.

**DON'T MISS
NATIONAL CHEMISTRY WEEK!**

National Chemistry Week (NCW) is coming fast! Once again the Carnegie Science Center will be celebrating NCW on Friday and Saturday October 24-25, 2003, from 9 AM-5 PM.

This year's theme is Celebrating Chemistry: Earth's Atmosphere and Beyond. The event will be "Honoring Innovators and Pioneers in Aviation and Atmospheric Chemistry."

Last year, a record 8,000 people attended the two-day National Chemistry Week event at the Carnegie Science Center.

The purpose of National Chemistry Week is twofold:
(1) To reach the public with a positive message about the importance of chemistry to our quality of life,
(2) To spark interest in science and chemistry in children who attend the event.



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
Michael Baker Jr., Inc.
Airside Business Park
100 Airside Drive
Moon Township, 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 _____

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

Leigh Anne M. Wacker,
AIChE Treasurer
705 Chrysler Street
Pittsburgh, PA 15226

NATIONAL "MOLE DAY"

October signals change. Acorns fall, leaves begin to change color, and Daylight Savings Time ends on the last Sunday of the month. The days are shorter, the nights are colder, and pumpkins and candy corn appear. Here is another event that happens every year during this month:

IN CELEBRATION OF AVOGADRO'S NUMBER
 Mark your calendars for October 23, when National Mole Day will be celebrated from 6:02 a.m. to 6:02 p.m., as it has each year since 1991, by chemistry teachers and students from elementary school through college. The day commemorates Avogadro's Number (6.02×10^{23}), the basic measuring unit in chemistry, and was created to foster interest in chemistry through a range of creative programs, including original songs. For more information on the event, go to <http://www.moleday.org/>.

SPONSORSHIPS

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1/12 Page	\$30

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Please contact
 Mariangela Peters at
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 for more information.



NATIONAL AIChE NEWS

AND THE NOMINEES ARE...

With ballots for the 2004 election ready to be mailed, AIChE President Dianne Dorland is beginning to put together the Nominating Committee that will select the candidates for the 2005 elections. If you are interested in serving on the committee--or in recommending names for the committee's consideration--contact Dr. Dorland at president@aiche.org.

2004 AIChE NPC PLANNING MEETING SET

Attention, everyone interested in programming activities! The National Program Committee (NPC) Planning Meeting will be held on February 7, 2004, in Houston, Texas. For more information please go to the Highlights section of AIChE's Technical Programming homepage at <http://www.aiche.org/programming/>

"EARLY BIRD" REGISTRATION DEADLINE FOR AIChE ANNUAL MEETING EXPIRING SOON

If you are planning to attend the Annual Meeting in San Francisco this November, the time to register is now. There's a special discount, over and above the standard savings for pre-registration, to all who sign up before October 10. The event at the San Francisco Hilton, which runs from **November 16 to 21**, includes a record-breaking 18 topical conferences, 550 oral sessions, and 4,000 papers, presented by renowned professionals from academia and industry, along with 500 to 1,000 poster papers.

Because of the unprecedented number of papers scheduled for presentation during the meeting, the daily format is being expanded to three session blocks per day. Technical programming will begin at 8 a.m. and run until 5:45 p.m. from November 16 to 21. Make your plans now to join more than 4,000 of your colleagues by registering at <http://www.aiche.org/annual/registration.htm>.

The money you save by registering now could buy you a tasty dinner in the City by the Bay.

CCPS ANNOUNCES NEWEST PUBLICATIONS

AIChE's Center for Chemical Process Safety (CCPS) recently released Guidelines for Facility Siting and Layout, Publication G-84, and will soon publish Guidelines for Fire Protection in Chemical, Petrochemical, and Petroleum Plants. All CCPS and AIChE publications may be ordered online at

<http://www.aiche.org/pubcat> or by calling 1-800-242-4363

AIChE PREMIERES NEW STUDENT WEBSITE

Campus Connection, AIChE's new student site, is open for business at <http://students.aiche.org/>. This product represents a major team effort of the Institute's Web Development, Graphics, Student Chapter Committee, and Student Services staff, and is designed to offer one-stop shopping access to all AIChE's Student Program activities and information. If you have any comments or suggestions for the site, please e-mail studentchapters@aiche.org.

FREE NSF BOOK PROMOTES WOMEN IN SCIENCE AND ENGINEERING

The National Science Foundation (NSF) has published a new book entitled New Formulas for America's Workforce: Girls in Science and Engineering. The title features more than 200 easy-to-read stories designed to bring to life projects to broaden girls' and women's participation in science and engineering. This jargon-free book is being distributed free over the Web, and contains a comprehensive index making it easy to find descriptions of special programs for middle school girls, engineering students, museums, math teachers, learning technology, and more.

A copy is available online at NSF

<http://www.nsf.gov/pubs/2003/nsf03207/start.htm> or, if you prefer a printed edition (NSF 03-207) or CD-ROM (NSF 03-208), go to

<http://www.nsf.gov/home/orderpub.htm>

AIChE CREDIT CARD PROGRAM

Features of the MBNA credit card program include: no annual fee; customer service 24 hours a day, 7 days a week; credit line increase requests by telephone answered in 30 minutes or less; and 24-hour access to your account via the Internet at <http://www.mbnanetaccess.com/>

If you are not a current customer and want to learn more, or would like to apply through the new MBNA program, call toll-free at 1-800-877-518-9007 and mention Priority Code: 6VM6.



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ENERGY AWARENESS MONTH

October is Energy Awareness Month. Here are a few tips on energy conservation, and some energy-related anniversaries.

This year marks the 23rd observance of October celebrated as National Energy Awareness Month. Sponsored by the Department of Energy, its Federal Energy Management Program (FEMP) has a number of suggestions for saving money while saving energy around your home. They can be found on-line at http://www.eere.energy.gov/femp/newsevents/home_cklst.html.

Some of them include:

- Check if your water heater has an insulating blanket. An insulating blanket will pay for itself in one year or less.
- If you have a waterbed, make your bed today. The covers will insulate it, and save up to one-third of the energy it uses.
- Replace incandescent lights with compact fluorescents, which can save 75 percent of the electricity used.
- Clean or replace furnace, air-conditioner, and heat-pump filters.

In addition, FEMP also has a list of tips for saving energy at your facilities, at

http://www.eere.energy.gov/femp/newsevents/reduce_fuel.html

October 9, 1865 - The first major oil pipeline to successfully transport crude petroleum was completed by Samuel Van Syckel of Titusville, PA. It was about 5 miles long, and constructed of 2-inch diameter wrought iron pipes, laid underground in 15-foot sections. Two pumping stations supplied the power.

October 15, 1878 - Thomas Alva Edison founds the first electric company, the Edison Electric Light Company, in New York City to finance his efforts to invent the incandescent lamp. Edison later created the Edison Electric Illuminating Company in 1880 to produce and sell electricity.

October 21, 1879 - The following year, Edison invented the first electric incandescent lamp of practical value. After more than a year of experiments, he produced a working prototype of the electric incandescent lamp using carbonized cotton filaments, which burned for about 40 hours. It was issued patent #223,898.

AS VERSATILE AS DUCT TAPE ...

Duct tape is a pop icon of the technological world - but only in America. It's sold in other countries, but nowhere else does it have this reputation as a universal cure-all. The reason duct tape resonates so strongly in the America psyche is due to duct tape's origins: It long been part of America's battle for freedom and liberty - and perhaps the ultimate representative of yankee ingenuity.

Recently, of course, we've heard America's Homeland Security secretary earnestly advise stock-piling duct tape to defend against a biochemical attack. This use echoes the origins of duct tape: It was made to combat the menace of Adolf Hitler. During World War II, the military had great trouble with water seeping into ammunition boxes - wet bullets don't work very well. In response, two inventors at Johnson and Johnson set to work on a special tape to solve this problem. They took a surgical tape made by their company and added a waterproof layer of polyurethane sealant. Because the cloth layer was cotton and because the sealant made water bead up on the tape, soldiers dubbed it duck tape - that's right "d-u-c-k" - duck tape. It reminded them of ducks because water rolled off it like a duck. The tape became standard military issue in olive green, and it instantly became a military staple. As intended soldiers used it to seal their ammunition boxes, but they also used it to mend boots, patch holes in tents, and strap equipment to jeeps.

When the GI's returned home they brought duck tape with them. In the booming suburbs of the 1950s, it filled a million household needs, including, of course, sealing duct work. Hence the new name, and also the color changed from green to silver.

It has now, of course, reached pop icon status. It's been used to make prom dresses - as part of the yearly duct tape fashion show. The Apollo 13 astronauts used it to improvise a life saving carbon dioxide filter. And it is the focus of many jokes. Alaskans claim that a cardboard box sealed with duct tape is an "Alaskan samsonite." Today duct tape comes in seventeen colors, including hot pink. Some 600,000 miles of tape are sold every year - enough to go around the world seventy-five times. Yet there is one thing you should not do with it: Use it on heating ducts. Researchers at the Lawrence Berkeley National Laboratory found that duct tape lets more energy seep out from ducts than just about any other type of tape. In fact, it releases so much energy, that California denies a tax-credit to any ducts covered with duct tape.

Source: www.engineerguy.com



NEWSLETTER DEADLINE

THE DEADLINE FOR THE NOVEMBER NEWSLETTER IS
OCTOBER 17, 2003.

Please submit information to:
Mariangela Peters
Bayer Polymers, LLC
100 Bayer Road
Pittsburgh, PA 15205

Phone (412) 777-4195
mariangelapeters@stargate.net

ENGINEERING MENTORS NEEDED!

2003-2004 Annual Future Cities Competition

Across America, thousands of engineers annually volunteer to serve as mentors for students in the **National Engineers Week Future City Competition™**.

A good number of these volunteers were from Western Pennsylvania, participating in the 2003 Pittsburgh Regional Future City Competition. Many volunteers say they join in to help students get a better view of the world of engineering, to give something back to the community, or for the gratitude they receive from teachers, students and parents.

Consistently, however, the engineers who guide the students from conception to design to construction of their future cities also say that one of the finest rewards is how the students give them a better perspective of their own lives as engineers. In the competition, seventh- and eighth-graders design, first on computer and then in three-dimensional scale models, cities of tomorrow. Now entering its twelfth year, the program has become one of the most successful educational outreach programs of its kind, having already reached more than 100,000 young people.

The students, usually working in teams of three and with the help of a teacher, must devise a city that functions (using the popular *SimCity 3000* software donated to each participating school by Maxis),

write an essay and abstract, and defend their city model before a panel of judges. In 2002-03, more than 30,000 students from more than 1,000 schools in 31 regions around the United States participated, including more than 115 students from 39 Pittsburgh area schools. Thirty-six regions are expected in the 2003-04 competition.

Students begin their cities at the beginning of the school year, working during and after school and through holiday breaks. While Future City was once primarily an extracurricular activity, increasingly schools use it as part of math, science and technology courses. Regional competitions are held in January. First-place teams (including the engineer mentor) win all-expense-paid trips to Washington, D.C., for national finals during National Engineers Week, February 22-28, 2004.

Advising, cajoling, or simply serving as sounding boards along the way are engineer mentors from every walk of the profession. That participation, though, sometimes means just sitting back and letting the students work it out for themselves. The new perspective is just one of the rewards of volunteering, says Freddie Bazen, a lieutenant commander in the U.S. Navy who helped Mission Middle School in Omaha go from Nebraska to Washington in 2003 to win first place. For Bazen, a mechanical engineer, the real payback for volunteering is assisting young people. These new insights into engineering come at a critical time in a child's life, says Bazen. "It's super important to expose them to something that may become part of their lives and to do it before they're into their teen years."

Engineers interested in more information can contact Keith Jensen, the Pittsburgh area Future City Volunteer Coordinator, at (412) 734-6279, via email at kjensen@ch2m.com or log onto the local Future City Web Page:

<http://www.FutureCityPittsburgh.org>

National information can be obtained from Carol Rieg, National Director, at (877) 636-9578, or by visiting <http://www.futurecity.org>



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2003-2004 Tentative Monthly Meeting Schedule

Date	Topic	Location
October 30, 2003	Technical Presentation	Engineers' Club - Downtown Pgh
November 2003	Plant Tour	TBA
January 2004	Joint Meeting with AWMA	Penn Brewery
February 2004	Annual Student Night	Oakland
March 2004	Technical Presentation	TBA
April 2004	Plant Tour	TBA
May 2004	Last Meeting of the Year	TBA

Mark your calendars!

For the Following Dates:

October 25, 2003	Local Event	National Chemistry Week - Carnegie Science Center
October 30, 2003	Monthly Meeting	Technical Presentation - The Future of Chemical Engineering Curriculum



The Catalyst

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