



# The Catalyst

PITTSBURGH CHAPTER  
AMERICAN INSTITUTE OF CHEMICAL ENGINEERS



Volume 18 Issue 3



November 2003

www.aichepgh.org

## NOVEMBER / DECEMBER MEETING NOTICE

**Topic:** Tour of PPG Research Facility

**Where:** *PPG Coatings Technical Center  
Allison Park, PA*

**When:** Tuesday, December 2, 2003

**Time:** 5:45 pm Registration & Networking  
6:00 pm Tour of PPG Coatings Research Facility  
7:30 pm Depart Allison Park for Stefano's  
7:50 pm Dinner at Stefano's Ristorante

**Menu:**

- ❖ **Chilean Sea Bass**
- ❖ **Chicken Romano** - Dipped in egg batter and imported Pecorino Romano cheese, sautéed then baked.
- ❖ **Eggplant Parmesan**

All entrees include fresh garden salad with choice of dressing, pasta, vegetable, and beverage.

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

**RSVP NO LATER THAN  
WEDNESDAY NOVEMBER 26<sup>TH</sup>, 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 Site Tour ~**

In 1954, PPG opened a new coatings and resins research center at Springdale, Pa., adjacent to the manufacturing plant there. In the early 1970s, it became obvious that a new coatings research facility was needed to accommodate the growing number of scientists and support personnel required for expanded research and global technical leadership.

There was no room to expand at the Springdale research site, so a 73-acre wooded site in nearby Allison Park, Pa., was selected and in 1974 the new facility was opened. The first expansion, which included additional laboratories and an application area, was completed in 1978.

Even this new space proved to be insufficient for the expanding drive to meet the needs of automotive, industrial and consumer customers. And a second major expansion, nearly doubling the working space at Allison Park, was completed in 1982. An additional building opened in 1986.

Today, PPG has about 120 manufacturing locations in 23 countries, including subsidiaries, joint ventures, and minority affiliates. Their products touch virtually every major facet of the world economy, from transportation, construction and chemical processing to consumer goods and health care. Applications of PPG coatings technology include automotive paints, Olympic® or Lucite® paints and stains, changeable-tint Transitions® plastic prescription lenses, even coatings used on the space shuttle.

The Allison Park facility houses PPG analysis, synthesis and product development groups, primarily for automotive and industrial coatings. In addition, Allison Park serves as headquarters for the Coatings and Resins Group's engineering department. During our tour, we'll see demonstrations of solvent-free electrodeposition processes, automotive base-coat and clear-coat processes, powder coatings, and robotic spray coating operations for automotive applications.

*CONTINUED ON PAGE 2.*



## LETTER FROM THE CHAIR

Dear Members,

Happy Thanksgiving! At this time, there are a number of people that I would like to give thanks to.

I would like to thank AIChE Pittsburgh Section's own Vice-Chair Jim Schneider and Counselor Joe McCarthy for a very interesting presentation last month. At the meeting's conclusion, they led a discussion on proposed changes in the chemical engineering curriculum. Meeting attendees were lively participants!

Second, I would like to thank all of our volunteer Pittsburgh Local Section Officers. I believe I speak for everyone when I say that they are a big part of the reason that our local chapter is vibrant and relevant. Their time spent working for the chapter is appreciated!

Finally, I would like to thank all the members of the Pittsburgh Local Section. As a professional society, our activities are only worthwhile with the participation of members such as yourselves. I am grateful for the opportunity to work with you.

I look forward to seeing you at our upcoming meeting at PPG on December 2<sup>nd</sup>. Happy Holidays!

Sincerely,

**Nathan Peters**

AIChE Pittsburgh Section- Chair

## MONTHLY MEETING – CONTINUED

**MORE INFORMATION ABOUT PPG IS AVAILABLE AT  
[HTTP://CORPORATE.PPG.COM/PPG/SCITECH/WORKINGINT/STCOATINGS1.HTM#HISTORY](http://CORPORATE.PPG.COM/PPG/SCITECH/WORKINGINT/STCOATINGS1.HTM#HISTORY)**

### **DIRECTIONS TO THE MEETING LOCATION:**

**PPG Coatings Technical Center  
 4325 Rosanna Dr.  
 Allison Park, PA 15001**

### **From Downtown Pittsburgh:**

Take Hwy 28 North from downtown Pittsburgh to Route 8 (Etna)  
 Exit 5B (on the left) onto Route 8 North, toward Butler

After 6 miles, turn RIGHT onto Hart's Run Road.  
 Take a LEFT onto Rosanna Drive.

### **From the Pennsylvania Turnpike:**

Take Exit 39 (Route 8 South) toward Pittsburgh  
 Follow Route 8 for 1.5 miles, than take a LEFT onto Anderson Drive.

Take a RIGHT onto Birchwood Lane.  
 Take a LEFT onto Rosanna Drive.

### **Upon Arrival at PPG Allison Park:**

Take a left off Rosanna Drive and follow the access road up a hill and through some turns.

Take the SECOND RIGHT off the access road to a traffic circle on the lower level.

Park in the lot to the RIGHT of the traffic circle.

Follow the signs marked "Visitor Entrances" to Bldg. E, and meet us in the lobby at 5:45pm.

\*\*If you have any difficulty, please call 412-877-7434.

### **DIRECTIONS TO THE RESTAURANT:**

*Stefano's Ristorante*  
 1141 Freeport Road  
 Fox Chapel Plaza  
 Pittsburgh, PA 15238  
 (412) 781-7833  
[www.chefsteff.com](http://www.chefsteff.com)

To Stefano's from PPG Allison Park (12 miles):

From Rosanna Drive, take a RIGHT onto Hart's Run Road. Take a LEFT onto Route 8 South.

Follow Route 8 South to Hwy 28.

Exit onto Hwy 28 North.

Exit 8 from Hwy 28.

Take a LEFT onto Freeport Road. Stefano's is in "Fox Chapel Plaza" on the LEFT side.

Park in the Fox Chapel Plaza lot (no charge).

"Chef Steff" of Stefano's is a Pittsburgh celebrity and appeared on the Food Network's show "Food Finds" last August. The episode "Italian Gourmets" featured some of the best Italian foods and food-makers in the USA, including film director Francis Ford Coppola and his California winery. He also hosts "Food and Football with Chef Steff" every Sunday morning at 10 am on UPN 19.



## 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](mailto: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,**  
**AIChE Treasurer**  
**705 Chrysler Street**  
**Pittsburgh, PA 15226**

## ENGINEERS' SOCIETY OF WESTERN PA

The ESWP Engineers' Week Committee is pleased to announce the Call for Nominations for the 2003 Engineer and Project of the Year Awards.

Each year, it is our goal to recognize an exemplary engineer and an outstanding project from the Western Pennsylvania region. Awards will be presented in a ceremony during the ESWP Annual Banquet. The attention these awards will bring will highlight the important contributions engineers make to our society. It is the hope that these awards will represent a meaningful impetus in attracting the best minds to the field and encouraging those in the field to excel at their work.

Nominations for ESWP Engineer of the Year and ESWP Project of the Year can be submitted by any member of ESWP, its affiliated technical societies or member companies. The Committee will seek candidates that exhibit evidence of leadership, innovation, and service to the engineering profession and society.

If you would like to make a nomination for either of these Awards, please visit [http://www.eswp.com/eswp/annual\\_awards.htm](http://www.eswp.com/eswp/annual_awards.htm) to obtain a copy of the Awards Nomination Form. Should you have any questions or comments, please contact David Teorsky, ESWP Manager at [d.teorsky@eswp.com](mailto:d.teorsky@eswp.com) or by telephone at 412-261-0710, ext. 15.

Thank you,

The ESWP Engineers' Week Committee



4916 William Penn Highway  
 Monroeville, PA 15146  
[www.langstonsubaru.com](http://www.langstonsubaru.com)  
 724-325-2888 • 800-463-6082  
 Fax: 724-733-2555  
[marcella@langstonsubaru.com](mailto:marcella@langstonsubaru.com)

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Business Card Size	\$45
1/12 Page	\$30

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Please contact  
Mariangela Peters at  
[mariangelapeters@stargate.net](mailto:mariangelapeters@stargate.net)  
or 412-777-4195  
for more information.

## NATIONAL AIChE NEWS

### CCPS CONFERENCE "MOVING UP" TO SUMMER

The 19th annual CCPS International Conference is moving from its traditional fall date to June in 2004. The meeting, "Emergency Planning: Preparedness, Prevention, and Response," will be held from June 29 - July 1, 2004, at the Caribe Royal Resort in Orlando, Florida. Sessions will include scenario development and planned response; prevention, including inherent safety, facility siting, training, physical and cyber security measures, LOPA, transportation mode selection, and storage location, size and design; and response to incidents, including community involvement, utilization of consequence modeling, and lessons learned from case histories and incident investigations.

Visit <http://www.aiche.org/ccps/icw> for the complete call for papers. Abstracts of 200-300 words must be received by no later than January 15, 2004. To submit your abstract, e-mail [ccpsicw@aiiche.org](mailto:ccpsicw@aiiche.org)

For more information on presenting your paper or participating as an exhibitor, call Karen Person at 212-591-7319 or e-mail [karep@aiiche.org](mailto:karep@aiiche.org).

*IBM, CLARKSON PROGRAMS RECOGNIZED AT NANOPARTICLES CONFERENCE*

The 6th Annual BCC Conference, Nanoparticles 2003, held from October 27- 28 in Cambridge, MA, presented its annual Leadership in Nanomaterials Awards on the 27th. This year, for the first time, the conference recognized the company that has shown the most leadership in nanomaterials commercialization, and the research institution that has shown the most leadership in nanomaterials R&D. Dr. Glenn Held and AIChE member Dr. S.V. Babu received the awards on behalf of IBM Research and Clarkson University's Center for Advanced Materials Processing, respectively. Winners were selected by an online voting process. Nanoparticles 2003 concluded with great optimism for future nanomaterials markets, estimated to reach several billion dollars in the next 10 years. Since its inception in 1998, this conference has evolved with the industry and research community, each year covering a range of technology and business topics relevant to producers, end-users, researchers, and investors in the nanomaterials field.

### 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.

### EXPANDED CAREER SERVICES FOR MEMBERS

[ExecuPlanet's CareerTools](#)<sup>(r)</sup>, an online suite of career products, will be of interest to many of your members. Through a partnership with Lee Hecht Harrison/ExecuPlanet, AIChE members can access a full array of career development and job search activities and tools. And access is free to members.

Members who are looking for job search assistance, strategies for career advancement, or tips for maintaining employability will be pleased by what they find at CareerTools. You can post a question to 'Ask a Coach' and get an answer from a Lee Hecht Harrison professional. Or you can learn and contribute by participating in an online discussion group. Set up a personal and confidential account; the **group password is aiche2003**. Career Services Hotline: 1-800-803-3446.



## THIS MONTH ...

November captures the senses with colors, scents, tastes, and sounds—gold and crimson leaves drifting to the ground; fresh nutmeg, cinnamon, and allspice added to creamy pumpkin pie; and cheering crowds at football games on every channel.

If you prefer your pumpkins flung, rather than mashed and baked, see

[http://www.concordmonitor.com/stories/news/local2003/1005\\_trebuchet\\_2003.shtml](http://www.concordmonitor.com/stories/news/local2003/1005_trebuchet_2003.shtml) for a story about New Hampshire's Bob Garrison, a retired engineer and electrical designer, who built his own version of a medieval trebuchet three years ago to launch pumpkins in an annual contest with a student-built weapon at New England College. In the style of the World Championship trebuchet pumpkin-throwing contest held each year in Delaware, Garrison's 25-foot tall contraption tossed pumpkins some 500 feet, easily smashing the targets.

A few days of note in November include:

*November 7* - Election Day. We hope you remembered to celebrate your freedom by voting for your elected officials on the Tuesday after the first Monday of the month. For an FAQ about Election Day and voting, see the Federal Election Commission page at <http://www.fec.gov/pages/faqvdayeprocedures.htm>

*November 11* - Veterans Day is always observed on the 11th, regardless of the day of the week on which it falls. Many confuse Memorial Day and Veterans Day. While on Memorial Day we remember and honor military personnel who died in the service of our country, Veterans Day is set aside to thank and honor ALL who served or are serving in the military—in war or peacetime—for their contributions to our national security.

*November 27* - Thanksgiving Day is a truly American holiday. It is a time to offer thanks, and for family gatherings, a festive meal, and watching football games on TV.

If you feel that you'd like to share some of the things for which you are grateful this year, America's Second Harvest can help you find a local food bank or food-rescue program at <http://www.secondharvest.org/>.

## THE COLOR OF (NEW) MONEY

On the front side of the new \$20 bill, the number 20 is printed in color-shifting ink that is especially hard to duplicate. Depending on the angle of the light, this number appears copper-colored or green. Even the best color photocopiers and digital scanners cannot reproduce this effect.

The ink itself does not change colors, but interference effects block out different wavelengths of light reflected at different angles. Naturally, the Treasury Department is not releasing full details of how this ink is made, but the patent literature provides a good general overview. Typically, a thin layer of metal is vacuum-coated onto a flexible web made from a soluble polymer. Next, the polymer web is dissolved, releasing the thin metal film.

This technology has been used before, but it was not suitable for use with currency-printing presses. Putting new equipment in place would be prohibitively expensive, so Roger Phillips of [Flex Products](#) (Santa Rosa, CA) decided to incorporate the metal films into ink that could be used with existing printing presses. He devised a process to break the thin metal film into flakes a few micrometers across—smaller than the diameter of a human hair. When these flakes are mixed into an ink-type base and printed onto paper, they tend to align themselves with the flat surfaces parallel to the surface of the paper, rather than standing on end.

Light waves reflected from the metal flakes at different levels within the ink layer interfere constructively or destructively with each other. In most cases, the crests and troughs of the light waves do not align with each other, and destructive interference causes these waves to cancel each other out. A few of the light waves, however, have the “right” combination of wavelength and reflection angle, and the metal flakes from which they are reflected are the right distance apart. The crests and troughs of these waves align with each other and reinforce each other, and these are the light waves that you see reflected from the surface.

The color combinations you can get from this are almost infinite because different types and sizes of flakes can be combined to vary the reflective properties of the ink. Adding transparent pigments or dyes to the ink or overprinting with a second layer of colored ink enhances specific colors.

*Source: www.chemistry.org*



## NEWSLETTER DEADLINE

THE DEADLINE FOR THE JANUARY NEWSLETTER IS  
DECEMBER 10, 2003.

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

Phone (412) 777-4195  
[mariangelapeters@stargate.net](mailto: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](mailto: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>



## AICHE PITTSBURGH SECTION 2002-2003 OFFICERS

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Dupree & Associates  
724-775-5122

### 2003-2004 Tentative Monthly Meeting Schedule

Date	Topic	Location
December 2, 2003	Plant Tour – PPG Research Facility	Allison Park
January 14, 2004	Joint Meeting with AWMA	Penn Brewery
February 11, 2004	Annual Student Night	Univ of Pittsburgh - 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:

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December 2, 2003

Monthly Meeting

Research Facility Tour -  
PPG Allison Park Site

January 14, 2003

Joint Meeting w/AWMA

Technical Presentation -  
Clean Water: A Key to Our Region's Economic Future

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### *The Catalyst*

American Institute of Chemical Engineers  
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Pittsburgh, PA 15222-2097



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