



## JANUARY MEETING NOTICE

### “Investing in Clean Water: A Key to Southwestern Pennsylvania’s Economic Future”

*A Joint Meeting between AIChE Pittsburgh Section, Air & Waste Management Association Allegheny Mountain Section, and American Academy of Environmental Engineers Western Pennsylvania Section*

**Where:** Penn Brewery, Troy Hill and Vinial Street  
(North Side), Pittsburgh, Pennsylvania

**When:** Wednesday, January 14, 2004

**4:00 Registration**

**4:30 Program Introduction** – Ed Moretti, *Moretti Consulting Group, LLC, A&WMA AMS Program Committee*

**4:35 About A&WMA** – Bob Volkmar, *Duquesne University, A&WMA Allegheny Mountain Section Chair*

**4:40 About AIChE** – Nathan Peters, *LaRoche Industries, Inc., AIChE Pittsburgh Section Chair*

**4:45 About AAEE** – Peter Kroll, *URS Corporation, AAEE Western Pennsylvania Section Chair*

**4:50 Investing in Clean Water: A Key to Southwestern Pennsylvania Economic Future**, Dr. Jared Cohon, *Carnegie Mellon University; Janet Lauer and Joshua Donner, Allegheny Conf. on Community Development*

**5:30 Questions, Answers, and Discussion**

**6:00 Tour of Penn Brewery** – by Brewmaster Tom Pastorius

**7:00 Dinner and Social**

**8:30 Adjournment**

**Menu:** A dinner buffet of German specialties, including salad, vegetables, meats, beverage and dessert.

**Cost:** \$35.00 Members  
\$25.00 Students / Unemployed Members  
\$45.00 Non-members

**RSVP** no later than **January 9, 2004** to Mr. Ed Moretti, AIChE / A&WMA, by fax at 412/276-2233 or via e-mail at [emoretti@moretticonsulting.com](mailto:emoretti@moretticonsulting.com). Your RSVP must include your name, company, e-mail address, and phone number.

Please pay at door. Proceeds will benefit local A&WMA and AIChE scholarship and education programs. 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 ~

**DR. JARED L. COHON**, PRESIDENT,  
CARNEGIE MELLON UNIVERSITY

**MS. JANET S. LAUER**, SENIOR VP, ALLEGHENY  
CONFERENCE ON COMMUNITY DEVELOPMENT

**MR. JOSHUA DONNER**, SENIOR POLICY ANALYST,  
ALLEGHENY CONFERENCE ON COMMUNITY  
DEVELOPMENT

Abundant water is one of southwestern Pennsylvania’s greatest assets. The quality of that asset has improved steadily in recent decades, as the region has worked hard to reduce industrial water pollution. Unfortunately, the discharge of sewage into the region’s waterways and groundwater, and the lack of water and sewer infrastructure in many communities, mean that the region can’t fully enjoy the benefits of this important natural asset.

- Every year, billions of gallons of sewage escape from overflowing sewers and malfunctioning on-lot septic systems and enter the region’s streams, rivers, lakes, and groundwater, threatening human health and tarnishing the region’s environment.
- Some residents, particularly in rural areas, lack clean and reliable water supplies, adequate wastewater systems, or both.
- Many otherwise desirable development sites, including former mill sites and major highway interchanges, lack water and wastewater infrastructure, forcing companies that wish to locate or expand in the region to go elsewhere.
- Many communities face growth restrictions, because their existing water or sewer systems cannot handle the additional burden of new homes or businesses.

Just as the region addressed the air pollution problems that threatened to choke off growth and endanger public health 50 years ago, the problem of wastewater pollution can be solved.

Dr. Cohon, Ms. Lauer, and Mr. Donner will discuss the findings and recommendations of the 2002 report *Investing in Clean Water*, a product of the Southwestern Pennsylvania Water and Sewer Infrastructure Project Steering Committee which Dr. Cohon chaired.

The full report and executive summary are online at [www.CampaignforCleanWater.net](http://www.CampaignforCleanWater.net).

CONTINUED ON PAGE 2.



## LETTER FROM THE CHAIR

Dear Members,

Happy New Year!

I'd like to thank all of the volunteers that made our visit to the PPG Alison Park Coatings Research Facility such an interesting and informative meeting. Our members in attendance certainly appreciated the time and effort that was put into the coordination of this tour.

2004 is poised to be a year of changes for AIChE. I look forward to your participation and support as AIChE remodels itself to fit this new century.

I encourage you to attend our joint meeting this month with A&WMA and AAEE at the Penn Brewery. This popular annual event is a meeting focused on topics of interest to our region, and on networking with local professionals in related organizations. Your participation will make the event richer for all. I hope that you are able to join us!

Sincerely,

*Nathan Peters*

AIChE Pittsburgh Section- Chair

## MONTHLY MEETING – CONTINUED

### *DIRECTIONS TO THE MEETING LOCATION:*

Pennsylvania Brewing Company  
800 Vinial Street  
Pittsburgh, PA 15212  
412-237-9402

### FROM DOWNTOWN:

Take Penn or Liberty Ave. towards Strip District, turn left onto 16th Street and cross the 16th Street Bridge. At the third stop light turn right on to Troy Hill Road (Phineas Street). The Brewery is 200 yards on the left.

### FROM THE NORTH:

Take I-79 to I-279 South to exit 8B (East Street). Straight to the third light, then turn left on to East Ohio St. At the second light turn left on to Chestnut Street, then immediate right on to Troy Hill Road (Phineas Street).

### FROM THE EAST:

Take PA Turnpike to exit 6 (Pittsburgh), follow I-376 West (the Parkway) to the center of Pittsburgh (the Point) then follow I-279 North to exit 7C (Chestnut Street). At the end of the ramp, turn left on to Chestnut Street, straight ahead to second stop light and turn right on to Troy Hill Road (Phineas Street).

FROM THE WEST AND SOUTH: Take I-376 East (the Parkway) through the Fort Pitt Tunnels and Fort Pitt Bridge, following signs to I-279 North. (Stay in left lane in the tunnel and bridge). As soon as you pass PNC Park, take Exit 7C (Chestnut Street). At the end of the exit ramp, turn left on to Chestnut. At the second light, turn right on to Troy Hill Road (Phineas Street).

PARKING IS FREE IN THE DOUBLE DECK LOT BEHIND THE BUILDINGS OR THE GRAVEL LOT ACROSS THE STREET.

*MORE INFORMATION ABOUT THE BREWERY IS AVAILABLE AT: [www.pennbrew.com](http://www.pennbrew.com)*



## NATIONAL ENGINEERS WEEK

### FEBRUARY 20-21, 2004

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## 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**

## SCHOLARSHIP APPLICATIONS DUE!

### 2004 – 2005 Pittsburgh Chapter AIChE Scholarships

*Applications are now available for two \$750 scholarships to be awarded by the Pittsburgh Section AIChE for the 2004-2005 academic school year. Sophomore and junior chemical engineering students are eligible to apply if they:*

- *Are enrolled in one of the following chemical engineering programs in the AIChE Pittsburgh Section area: Carnegie Mellon University, University of Pittsburgh, West Virginia University, Youngstown State University*
- *Are enrolled at any AIChE-accredited chemical engineering program in the United States provided that the student is the son or daughter of a member in good standing of both the National AIChE and the Pittsburgh Section AIChE.*

The **deadline** for submission of an application is **January 23, 2004**. Scholarship recipients will be notified by February 27, 2004.

For more details or to print out a copy of the application, visit [www.aichepgh.org](http://www.aichepgh.org).



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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).

### 2003 Annual Meeting- A Smash Hit!

If you haven't already heard, or weren't there yourself to feel the excitement, AIChE's 2003 Annual Meeting, November, 16-21, in San Francisco was a huge success. A record-breaking 6,000 people attended over 570 technical

sessions, heard more than 4,300 papers, and participated in 18 topical conferences. AIChE launched the new Society for Biological Engineering and professional and student attendees cheered on chemically powered cars at the annual Chem-E-Car competition. Look for Annual pictures and wrap-up articles in January Extra, found in CEP.

### Annual Meeting Proceedings CD-ROM Available!

Packed with over 1,000 papers and 9,000 pages from topical and non-topical authors, AIChE's comprehensive 2003 Annual Meeting CD-ROM has sold over 600 copies. A limited number are still available. The total cost is \$77. To order your copy, contact AIChE Customer Service at 1-800-242-4363 or email [xpress@aiiche.org](mailto:xpress@aiiche.org)

### HONORING TODAY'S TECHNOLOGICAL INNOVATORS

AIChE member John J. Mooney was presented with the National Medal of Technology, the nation's highest honor for technological innovation, at a recent White House ceremony. President Bush recognized Mooney, a member of the New Jersey Section, and teammate Dr. Carl Keith for their pioneering work in developing automotive catalytic converters. Learn more at <http://www.technology.gov/medal/>.

### STAND AND DELIVER: Faculty Wanted for Washington Internship Program

An outstanding faculty member is needed to teach and mentor students next summer on the interaction among engineering, technology, and public policy. The WISE (Washington Internships for Students of Engineering) summer program, held June 1 - August 6, 2004, Washington, DC, teaches undergraduate engineering students how legislative and regulatory policy decisions concerning technical issues are made and how engineers can contribute to the process. Visit: <http://www.wise-intern.org/>.

### ENGINEERING FUN: TOYchallenge

Sally Ride Science Club, Smith College and Hasbro, Inc. will hold the second annual Toy Design Challenge For Middle School students. Students form a team and think up a brand new toy or game. To get started, design teams must find an adult coach, and register before January 30 (registration fee is \$25 per team); choose a theme from seven toy categories; and create and submit their entry by February 15. For more information, visit: <http://www.TOYchallenge.com>.



## ENGINEERS' WEEK IS COMING ...

Mark your calendars for Engineers Week 2004 at the Carnegie Science Center!

This year's events will take place on Friday and Saturday, February 20<sup>th</sup> and 21<sup>st</sup> from 10:00 AM until 5:00 PM.

The Science Center will be full of booths and activities to demonstrate engineering principles and ideas to children of all ages.

More details will follow in next month's edition of the Catalyst. In the meantime, don't miss the Science Center coupon on Page 2!

## SAVE THE DATE!

Our local section's Annual Student Night is scheduled for **February 11, 2004**. We will be hosting students from the University of Pittsburgh, Carnegie Mellon, Youngstown State, and West Virginia University.

Please make every effort to attend! For many of our students and poster presenters, this is their first contact with our local professional chapter, and a good opportunity to introduce them to AIChE.

## THE MICROWAVE OVEN

No doubt you have used your microwave oven this week to zap left-over ham or turkey, making use of its ability to heat quickly. Yet this useful kitchen appliance nearly failed years ago because at first it heated too fast.

The microwave oven is well over fifty years old. It appeared in 1946, a direct descendant of World War Two military technology. A company called Raytheon produced radars for the US armed forces. The heart of a radar is a vacuum tube called a magnetron. This device produces very high frequency radio waves that are absorbed by water and fat, making them rotate rapidly, thus generating heat. The engineers at Raytheon first noticed the

heating effect of radar tubes during the cold Boston winters: By accident they learned that they could warm their hands using the output from a radar tube.

Raytheon's first oven in 1946 weighed in at 670 pounds, stood 62 inches tall, and was nearly two feet in depth and width. Not only did it take up floor space, it also required a team to install it: An electrician had to put in a 220 volt line, like those used by washers and dryers today; and a plumber had to install a water line to cool the oven's radar tube. These first ovens sold for over two thousand dollars -- some 17,500 in today's dollars. It was a powerful machine: You could cook a six-pound roast in two minutes and a hamburger in twenty-five seconds.

For the next 20 years, Raytheon tried to sell the oven, but it failed to take off. The real success of the oven occurred in the mid-1960s when Raytheon acquired Amana Corporation, a successful maker of consumer refrigerators. When Amana got a hold of the oven the first thing they did was to slow it down. They redesigned it so it needed less power - and no plumbers or electricians, just plug it into a standard outlet. This slower speed reflected a change in American's eating habits and social structure since the oven's debut in 1946.

The first ovens were intended to cook whole roasts and lobsters. The patent even describes cooking "thick bodies of meat." Yet a microwave oven cooks meat, or large chunks of protein, poorly. By the mid-1960s the faster pace of life, often caused by two working parents, resulted in more packaged food, usually with smaller portions of protein. So, in the new household of the early 1970s the oven thrived as a reheater, rather than as a substitute for a conventional oven.

Amana advertised their new oven across the nation with the slogan "The Greatest Discovery since Fire." By 1978, the microwave oven had spread like fire, rising to fifth place in appliance sales, just behind refrigerators, washers, dishwashers, and air conditioners. By 1985, it had risen to the top becoming the number one best seller.

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



## NEWSLETTER DEADLINE

THE DEADLINE FOR THE FEBRUARY NEWSLETTER IS  
THURSDAY, JANUARY 15, 2004.

Please submit information to:

*Mariangela Peters*  
*Bayer Polymers, LLC*  
*100 Bayer Road*  
*Pittsburgh, PA 15205*

Phone (412) 777-4195  
[mariangela.peters@bayerpolymers.com](mailto:mariangela.peters@bayerpolymers.com)

## 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>



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Allegheny County Health Dept.  
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Bayer Polymers, LLC  
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Air/Compliance Consultants, Inc.  
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(412) 351-2044 x230

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Moretti Consulting Group, LLC  
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724-775-5122

### 2003-2004 Tentative Monthly Meeting Schedule

Date	Topic	Location
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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January 14, 2004	Monthly Meeting	Brewery Tour & Technical Presentation - Clean Water: A Key to Our Region's Economic Future
January 23, 2004	Application Deadline	Local AIChE Scholarship Applications Due!
February 11, 2004	Monthly Meeting	Annual Student Night
February 25, 2004	2004 Engineers' Week	Carnegie Science Center



***The Catalyst***

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