



NOVEMBER MEETING NOTICE

Engineers' Society of Western Pennsylvania
337 Fourth Avenue, Pittsburgh PA 15222
(P) 412-261-0710

When: Monday, November 12, 2001

Evening Program: Networking: 6:00 PM
Dinner: 6:30 PM
Presentation: 7:15 PM

Menu Selection:

Salmon Nicoise - Pan Seared Salmon Topped with Fresh Tomato, Garlic & Chardonnay Cream

Chicken Riviera - Boneless Breast Topped with Sliced Tomatoes, Garlic Butter & Melted Asiago Cheese

Above Dinner Entrees are served with Fresh Garden Salad, Assorted Rolls & Butter, Coffee, Decaf, Tea & Iced Tea, Chef's choice of Starch, Vegetable and Dessert.

Cost: \$25.00

RSVP NO LATER THAN
WEDNESDAY, NOVEMBER 7, 2001

TO:

Ms. JoAnn Truchan, Vice Chair

Tel 724-695-1945

Email: cricket.jt@att.net

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.

Evening's Topic

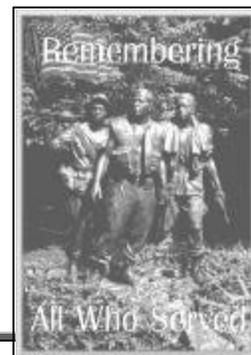
Navigating Today's Market And Insurance Needs

Come and discover time-tested strategies to help you reach your goals and also insight on how to reassess your current portfolio. This program will provide a brief over-view on today's market environment. Jayme A. Russo will also cover the National AIChE program and agreement with Charles Schwab.

The National AIChE endorses GE Capital Assurance as their Long Term Care Insurance provider, Linda Vaira will talk to us about such topics as: who should (and who shouldn't) consider Long Term Care Insurance; how Medicaid pays for Long Term Care after assets are depleted; the spiraling costs of Long Term Care services in the Pittsburgh area; how to design a Long Term Care Insurance plan to meet your needs. She will also touch briefly on some of the benefits in the GE Capital Assurance Long Term Care Insurance policy so that you can better understand some of the benefits that are available to you.

Jayme A. Russo has been working in the financial industry since 1994. He joined Schwab in 1997 and currently holds a Series General Securities representative License and a series 63, Uniform State Laws License. Jayme holds a BA in Business Administration and Economics from Grove City College, Pa and a Masters in Business and Economics from Slippery Rock University, Pa. He teaches economics at the Butler Community College in Butler, Pa where he resides.

Linda Vaira is recognized as a Specialist in Long Term Care Financing. In addition to speaking actively to civic, community and professional groups, Mrs. Vaira assists attorneys, financial planners, individuals and couples with Long Term Care Insurance. Linda has been invited to return as a Specialist in Long Term Care Insurance on the radio talk program, "Your Financial Connection." She is a member of the Senior Advocacy Team, a group of professionals who specialize in helping individuals plan ahead for their future needs.





LETTER FROM THE EDITOR

DEAR MEMBERS:

It was wonderful to see so many new faces at our October Meeting!

We extend our gratitude to **Allegheny Plastics** (www.allegheny.com). Your hospitality is appreciated. Our Chapter wishes you continued success and growth in your market!

Are you interested in becoming more active in our local Chapter? One way is to volunteer for the various programs we sponsor. This includes the Future City Competition, National Chemistry Week, and National Engineers' Week. Your help is needed for the success of these programs. Please contact any of our officers for further information on how to become more involved.

Happy Thanksgiving to you. May you and your loved ones be blessed with good health and happiness! With the recent events in our Country and in the world, Thanksgiving Day will be even more important this year.

Best regards,

Peggy Panagopoulos

AIChE Newsletter Editor

MEMBERSHIP CORNER

We are constantly updating our membership database. Please send all change of address notification to me at

Ashley Smith
Industrial Design Corporation
200 Corporate Center Drive, Suite 200
Moon Township, PA 15108
ashley.smith@idc-ch2m.com

Thanks to all of you for supporting the Pittsburgh local section by volunteering your time to attend meetings and volunteer for the numerous AIChE sponsored activities. I look forward to seeing everyone at this year's activities!

Regards,

Ashley Smith
 Membership Chair

CHAPTER ANNOUNCEMENTS

ESWP SOLICITING NOMINEES FOR ANNUAL AWARDS

It's time again for the annual recognition awards presented by the Engineers' Society of Western Pennsylvania. ESWP is pleased to issue the 2001 Call for Nominations for the *Engineer of the Year* and the *Project of the Year Awards*. These awards are presented annually by the ESWP to recognize significant achievements in engineering. You may learn more about these awards, plus download a nomination form at ESWP's home page, located at www.eswp.com. Nominations will be open through **January 4 2002**.

Additionally, ESWP is accepting nominations for the **William Metcalf Award**, the lifetime achievement award for significant contributions to engineering in fields normally associated with Western Pennsylvania. The Metcalf Award is the highest award presented by the Engineers' Society and is named after the founding president of ESWP, William Metcalf. This award has been presented annually since 1963. Past recipients include such notables as Thomas Usher, USX Corporation, Richard Simmons, Allegheny Teledyne, Dr. Joel Abrahms, University of Pittsburgh and Harold Hall, Hall Engineers. Nominations for the Metcalf Award will be accepted through **November 20, 2001**, and can be directed to the attention of Carl Schwartz. His e-mail address is schwarcw@westinghouse.com. These award winners will be recognized at the 118th annual banquet of the ESWP, on Wednesday February 20, 2002, at the Pittsburgh Hilton and Towers.

ESWP recognizes that the engineering professionals, firms and technical societies affiliated with the ESWP are a vital part of the engineering community in Western Pennsylvania. As such, your input is valued in preparing nominations for these prestigious awards. ESWP hopes that you will give thought to this opportunity to recognize individuals and firms who are most deserving.

Should you have any questions, please do not hesitate to contact **ESWP or Nancy Hirko at 412-826-3636 or nhirko@air-comp.com**.





POSITION AVAILABLE

CERAMIC / CHEMICAL / PROCESS ENGINEER

NATURE OF POSITIONS: glass manufacturing industry process engineering

LOCATION: Pennsylvania

QUALIFICATIONS: B.S. Chemical / Ceramic Engineering or Industrial Technology minimum; prefer several years experience in glass manufacturing / engineering; computer literacy required; must be a U.S. Citizen, or presently in and eligible to work in the U.S.

COMPENSATION: the base starting salary may range to \$70-K; **NOTE:** besides base salary, which may vary based upon the skills and experience of the successful candidate, also available are: competitive benefits, including: medical, dental, life insurance, short and long term disability insurance, a 401K, and significant education assistance; and relocation assistance.

ACTION: send resume as a text E-mail message (not as an attached document, if possible) to hedman@onramp.net. (**Superior candidates will also respond to each item in the QUALIFICATIONS SECTIONS, AND NATURE OF POSITION.**)

NOTE:

IMMEDIATELY AVAILABLE (October, 2001) we are a search firm; all service fees are paid by the Client (Employer), and all referrals are on an equal opportunity basis.

Kent Hedman, 817 277-0888, hedman@onramp.net

CHAPTER ANNOUNCEMENTS

INTERESTED IN HOSTING AN AICHE MEETING AT YOUR COMPANY?

We are in search of hosts for our future AICHE monthly meetings. The Chapter is looking for companies that can provide AICHE members with an interesting, informative, and beneficial agenda. If your company would be interested in hosting a meeting please contact me.

Also, if you have a topic or an idea that you would like to see presented at a monthly meeting, please feel free to contact me and we can discuss your idea.

*Mr. Michael Flaherty, Chair
WSP Chemicals & Technology Inc.
Tel 724-266-7688 ~ Fax 724-266-7683
Email Michaelp871@hotmail.com*

2001 AICHE AMMONIA SYMPOSIUM

New dates, same location:

January 14 – 17, 2002

Le Centre Sheraton

Montreal, Quebec, Canada.

Memo To: All previously registered and potential attendees of the 46th Annual Safety Ammonia Plants and Related Facilities Symposium

The Ammonia Safety Committee and the AICHE are pleased to announce the rescheduling of the 2001 Ammonia Safety Symposium over the above dates at the same location. As Le Sheraton Montreal has cancelled your original reservation, you should call to make a new reservation at your earliest convenience at 514-878-2000; or fax the hotel at 514-878-8214.

For all those previously registered attendees, the AICHE is still holding your registration and payment and plans to direct it to the newly rescheduled meeting, unless we otherwise hear from you, in writing. Should you have any further questions, please call our customer service department at: 1-800-242-4363 or 212-591-8100; or fax to 212-591-8888, or email: xpress@aiche.org.

The Ammonia Safety Committee and the AICHE look forward to your attendance in January in Montreal.

FALL 2002 EPA STAR FELLOWSHIP PROGRAM FOR GRADUATE ENVIRONMENTAL STUDY

The U.S. Environmental Protection Agency (EPA), as part of its Science to Achieve Results (STAR) program, is offering Graduate Fellowships for masters and doctoral level students in environmentally related fields of study. The deadline for receipt of pre-applications is **November 19, 2001**. Subject to availability of funding, the Agency plans to award approximately 100 new fellowships by July 22, 2002. Master's level students may receive support for a maximum of two years. Doctoral students may be supported for a maximum of three years. The fellowship program provides up to \$34,000 per year of support. This amount covers a \$17,000 annual stipend, \$5,000 for authorized expenses, and up to \$12,000 for tuition and fees. Actual annual support may vary based on length of fellowship award and tuition and fees.

Contact Person(s):

Virginia Broadway

Phone: 202.564.6923

email: broadway.virginia@epa.gov

Cont. on page 4



Cont. from page 3

Eligibility Information

See full proposal for eligibility information found at <http://es.epa.gov/ncercqa/rfa/#2002>.

Award Information

Anticipated Type of Award: Fellowship
 Estimated Number of Awards: 100
 Anticipated Funding Amount: \$3 million dollars
 Potential Funding per Fellow per Year: \$34,000

Deadline/Target Dates

Letter of Intent Due Date(s): None
 Pre-Application Proposal Due Date(s):
 November 19, 2001

THROW YOUR HAT IN THE RING

Whether actively seeking employment or just testing the job market, add your resume to AIChE's Career Fair Resume Book from your home or office. It's an easy way to introduce yourself to employers, even if you don't attend the Reno Career Fair. And it's free. Add your resume at:

<http://www.aiche.org/careerservices/jobs/carfair.htm>.

TRAINING THAT COMES TO YOU

AIChE's distance learning CD-ROMs offer the convenience of employee training without travel. Employees learn at their own pace, when and where they choose.

Visit <http://www.aiche.org/distancelearning> for a free demonstration of Distillation Technology for Operators, the latest in AIChE's CD-ROM training program. To learn more, call Sunil Gupta at 212/591-8690.

PITTSBURGH RUBE GOLDBERG MACHINE CONTEST

Engineers Needed for Rube Goldberg Machine Contest!!!!

Dear Engineer or Engineering Student,

2001 is the inaugural year of the Rube Goldberg Machine Contest in Pittsburgh. In cooperation with the Vira I. Heinz Endowment, Pittsburgh-area corporate sponsors, and the Engineers Society of Western PA, the Carnegie Science Center will host this high school contest. The program begins in early October, and culminates with a competition on January 12, 2002 at the Science Center.

(Please see www.carnegiesciencecenter.org for more Pittsburgh-specific details. Go to www.rubegoldberg.com and www.rubemachine.com for additional background info.)

Each Rube Goldberg team consists of three to five high school students and a teacher. In addition, an engineer or engineering student is enlisted to mentor the team in the design, construction and testing of the machine. Time-wise, a mentor would dedicate an average of 1 hour per week from early October through mid-January, meeting directly with the team and providing consultation by phone and email. Teams are currently registering for the contest, and many will request that an engineer be identified for them.

Please consider offering your time and energy to one of the high schools. Please contact Amy Robeson (412.237.1640; robersona@clpgh.csc.org) or Mike Canton (412.374.6165; cantonmh@westinghouse.com) to volunteer or to obtain more information.

The Rube Goldberg Machine Contest brings the ideas of Pulitzer Prize-winning artist Rube Goldberg's "Invention" cartoons to life. Named after, and inspired by the cartoonist Reuben Lucius Goldberg, this Olympics of Complexity is designed to pull students away from conventional problem-solving and push them into the endless chaos of imagination and intuitive thought. To be specific, groups are given an elementary challenge: "Select, peel and wash an apple". But instead of just "solving" the problem, students have to make the solution as complicated and as convoluted as possible. In fact, the more steps -- with a minimum of twenty -- the better the machine. And what a machine! An assemblage of ordinary objects, mechanical gadgets and the oddest odds and ends are linked together mechanically and somehow get to the desired goal. The Rube Goldberg Machine Contest enables students to better understand mathematics and scientific principles through hands-on application by having students design and build an elaborate, multi-stage machine to perform a simple task. Through this process, the students learn engineering principles and practices since they must work as a team building their Rube Goldberg machine, hone their writing and speaking skills and make presentations explaining the concepts and foundations for how their machine works.



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Contact: Jill Merrill

1050 William Pitt Way, Pittsburgh, PA 15238
 412.826.3636 FAX 412.826.3640
 E-Mail: jmerrill@air-comp.com



PITTSBURGH FUTURE CITY COMPETITION

Engineers Needed!!!

MENTORS NEEDED FOR THE FUTURE CITY COMPETITION

Greetings!

I am writing to you with an urgent request to consider volunteering as a mentor for the Pittsburgh Regional Future City Competition. In the recent past, you have been a volunteer in some capacity for this event. This year we have more than 50 schools registered. Most of these schools have mentors, but we need a few more. Please help us introduce middle school students to the profession of engineering.

Mentors are needed for the following schools:

- A.J Rooney Middle School (Pittsburgh Public Schools - North Side)
- Harrold MS (Greensburg)
- Ingomar Middle School (North Hills)
- Mt. St. Peter School (New Kensington)
- Northgate Middle School (Bellvue)
- Options Center (Lawrenceville)
- Penn Valley JSHS (Spring Mills, PA)
- South Fayette Middle School (McDonald, PA)
- South Park Middle School (South Park)
- St. Cyril of Alexandria (North Side)
- West Hempfield (Irwin)
- Winchester Thurston (Shadyside)

Each volunteer engineer mentor works with seventh- and eighth-graders, in a team of three, and their teacher, helping to guide the youngsters through the rigors of building a functioning city. Engineers generally have to devote only 20 - 40 hours to the project over the period from October to January. Part time mentors are also needed.

For more information on volunteering as an engineer mentor for the 2000 Future City Competition, please contact me or Amy Robeson at 412-237-1640.

Thank you!

Carl W. Schwartz
412-374-3678

HUMOR

Just For Engineers

The US standard railroad gauge (width between the two rails) is 4 feet, 8.5 inches. That's an exceedingly odd number. Why was that gauge used? Because that's the way they built them in England, and the US railroads were built by English expatriates.

Why did the English build them like that? Because the first rail lines were built by the same people who built the pre-railroad tramways, and that's the gauge they used.

Why? Because the people who built the tramways used the same jigs and tools that they used for building wagons which used that wheel spacing.

Okay! Why did the wagons have that particular odd wheel spacing? Well, if they tried to use any other spacing, the wagon wheels would break on some of the old, long distance roads in England, because that's the spacing of the wheel ruts.

And why were there wheel ruts? The first long distance roads in Europe (and England) were built by Imperial Rome for their legions. The roads have been used ever since.

And the ruts in the roads? Roman war chariots first formed the initial ruts, which everyone else had to match for fear of destroying their wagon wheels. Since the chariots were made for (or by) Imperial Rome, they were all alike in the matter of wheel spacing.

Thus, the United States standard railroad gauge of 4 feet, 8.5 inches derives from the original specification for an Imperial Roman war chariot. Specifications and bureaucracies live forever. So the next time you are handed a specification and wonder what horse's #\$\$% came up with it, you may be exactly right, because the Imperial Roman war chariots were made just wide enough to accommodate the back ends of two war horses. Thus, we have the answer to the original question.

Now the extraterrestrial twist to the story...

When we see a Space Shuttle sitting on its launch pad, there are two big booster rockets attached to the sides of the main fuel tank. These are solid rocket boosters, or SRBs. The SRBs are made by Thiokol at their factory in Utah. The engineers who designed the SRBs would have preferred to make them a bit fatter, but the SRBs had to be shipped by train from the factory to the launch site.

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The railroad line from the factory had to run through a tunnel in the mountains. The SRBs had to fit through that tunnel. The tunnel is slightly wider than the railroad track, and the railroad track is about as wide as two horses' behinds.

So, the major design feature of what is arguably the world's most advanced transportation system was determined over two thousand years ago by the width of a horse's #\$.

HOT NEWS

TOWARD A SAFER REFRIGERANT

Traditionally, refrigerants were judged on their toxicity, flammability, and physical hazards when evaluating their safety risks. In this analysis, depletion or damage to the Earth's protective ozone layer was left out. You may wonder why this was the case. Probably because there was nothing wrong with the ozone layer at the time and any safety analysis must have its boundaries.

In the late 1800's to early 1900's, common refrigerants included ether, naphtha, methyl chloride, dichloroethene, and ammonia. Nearly all flammable, toxic or both. By 1926, investigations into fluorinated organic chemical led to the use of dichlorodifluoromethane or R-12 as a refrigerant. This substance was found to be nearly non-toxic and non-flammable, a seemingly good fit for what the industrial world sought at the time. Ironically, it was the same stability that made chlorofluorocarbons (CFCs) good refrigerants that allowed them to deliver ozone-depleting chlorine to the stratosphere. All of the sudden, refrigerants needed to be judged on another basis in addition to toxicity, flammability, and physical hazards. The world needed to find a refrigerant that does not carry chlorine to the ozone layer. But, considering that chlorine based chemicals make very good refrigerants in all other aspects, where do we begin this search?

It quickly became apparent that currently, no refrigerant seems to economically meet of four criteria for a good refrigerant. Attention started to shift to partially halogenated hydrocarbons (HCFCs). These refrigerants have less chlorine and fluorine, but are generally not viewed as a long term solution because they cause less damage to the ozone than CFCs, but are not ozone-safe. The advantage to HCFCs is that they can be used with current refrigeration systems with low to moderate economical changes.

Thinking in terms of long term refrigeration solutions, people have begun to question the need for non-flammable refrigerants. Some say that with proper training and system design, flammable refrigerants may be used safely. That brings halogen-free hydrocarbons (HCs) into the mix. These can include many classes of hydrocarbons. Most likely, fairly significant changes to current systems would have to be made to existing systems to use these chemicals.

Another option that would also require significant system changes and may offer a long term solution are the use of chemicals such as air, water, nitrogen, helium, and carbon dioxide as refrigerants. Obviously these systems would require higher pressures and thus will be most expensive, but their use has already been demonstrated on industrial scales in some case. For example, Air Products on Allentown, PA developed a cryogenic system that uses air as the refrigerant and it has been quite successful.

While it's clear that finding the "perfect" refrigerant in not a simple tasks, many are willing to challenge conventional thinking. Personally, I cannot imagine a better refrigerant than air or water. However, using such inert substances on all refrigeration scales will require some more time and innovation. Safe options are available, but as with any major change, it will take some time to get where we need to be.

Source: <http://www.cheresources.com/saferefrig.shtml>

NEWSLETTER DEADLINE

**THE DEADLINE FOR THE JANUARY NEWSLETTER IS
NOVEMBER 30, 2001.**

Please submit information to
Peggy Panagopoulos at
ChemTech Consultants
1370 Washington Pike, 4th Floor
Bridgeville, PA 15017
pegpana@chemtech88.com or Fax: 412-221-5685





AICHE PITTSBURGH SECTION 2001-2002 OFFICERS

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Please contact ~ Peggy Panagopoulos

ChemTech Consultants, Inc.

1370 Washington Pike, 4th Floor, Bridgeville, PA 15017

TEL 412-220-4612 ~ FAX 412-221-5685 ~ Email pegpana@chemtech88.com

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Contact Peggy Panagopoulos
pegpana@chemtech88.com
412-220-4612



Catalyst

American Institute of Chemical Engineers
337 Fourth Avenue
Pittsburgh, PA 15222-2097

Tentative Meeting Schedule for 2001-2002

Date	Event	Location
Jan 16	Joint Meeting with AWMA	Penn Brewery
Feb 20	Student Night	William Pitt Union Hall
March 19	TBA	TBA
April 17	TBA	TBA
May 15	Spring Event	TBA



PROUD TO BE AN AMERICAN!