October 2000 Meeting Notice

Officers Meeting: 5:00 P.M.

Where: BAYER CORPORATION 100 Bayer Road Pittsburgh, PA
When: Tuesday, October 17th, 2000

Time: 6:00 P.M. Social 6:45 P.M. Dinner 7:30 P.M. Social
Menu: Buffet Dinner

Cost: $20.00

Evening's Topic: **Two-Component Waterborne Polyurethane Coatings**

Dr. Jacobs will discuss the technical challenges and solutions involved in the development of Bayer's "green" polyurethane coatings. The Bayer technology cuts volatile organic compound emissions by 50 to 90 percent and hazardous air pollutant emissions by 50 to 99 percent while maintaining durability and aesthetic standards previously only achieved by solvent-based coatings.

Conventional two-component polyurethane coatings have traditionally used solvents. To achieve its goal of providing the industry with a viable, nearly solvent-free alternative, Bayer had to develop new waterborne and water reducible resins that equaled high-performance polyurethane characteristics. In addition, Bayer was instrumental in developing new mixing and spraying equipment to ensure simple and inexpensive application.

The resulting technology received the 2000 Presidential Green Chemistry Challenge Award by the United States Environmental Protection Agency.

EVENING'S GUEST SPEAKER: **Patricia Jacobs, Ph.D., Bayer Corporation**

Pat Jacobs received her Bachelor's degree from Rice University in Houston, Texas, and Ph.D. in organic chemistry from the University of Pittsburgh. She joined Bayer Corporation (then Mobay) in 1986, working in the Coatings Research Department. One of the earliest projects she tackled was to develop crosslinkers and coreactants for two-component waterborne polyurethane coatings. She has several patents and publications in this field. Pat is currently responsible for the automotive clearcoat team in the Automotive Coatings Applications Group. And, while she herself is a chemist, she has been married to a chemical engineer for many (she prefers not to say exactly how many) years.

DIRECTIONS TO BAYER MEETING LOCATION

From Pittsburgh: take Parkway West from Pittsburgh. Stay on Parkway West until the Route 22-30 exit to Ohio and West. Shortly after getting off Parkway West, but still on Route 22-30, take the Old Steubenville Pike Exit. At the end of the ramp, make left onto Montour Church Road and cross over bridge. Turn left onto Old Steubenville Pike (at pink craft building) and then make immediate right onto Bayer Road. The Bayer campus is at the top of the hill on the left side. Meeting will be in Building No. 6, Cafeteria.

From Airport: take Route 60 to Route 22-30 West and exit at Holiday Inn onto Old Steubenville Pike exit. At the end of the ramp, make left onto Montour Church Road and cross over bridge. Remainder of directions as above.

Letter from the Editor

NOTE FROM THE EDITOR

Our first meeting was a *SUCCESS*! On behalf of the Pittsburgh Chapter AIChE, I would like to thank our guest speaker *Jeffery P. Henning and AEA* for an *excellent* presentation. We appreciate your time and efforts!

You can now be an AIChE Pittsburgh Chapter Monthly Meeting Sponsor. With your sponsorship of $200 you will be invited to display your company information at our meeting and will receive a ¼ page add ($95 value) in the following Newsletter. We would appreciate your support! Please contact me for further information.

Our chapter would like to welcome our new members. We encourage you to become active in our chapter by volunteering for the various events we support in our community such as Engineers' Week and the Future City Competition. Please contact Nancy Hirko (412-433-5914) for the various volunteer positions available.

I look forward to meeting you during our October meeting at Bayer!

Peggy Panagopoulos
AIChE Newsletter Editor ChemTech Consultants, Inc., 412-220-4612

Membership Corner

LETTER FROM OUR MEMBERSHIP CHAIR

I have just obtained the most recent membership database from National AIChE. Our membership area encompasses eastern Ohio, western Pennsylvania, northern West Virginia and the very western region of Maryland.

This is the time of the year that I really dig in and update our membership database. The database from National AIChE indicates that we have 1,155 national members and approximately 600 that belong to the local section. My records indicate that we have approximately 900 national members and 680 local section members.

I spend a lot of time trying to understand why the National database and our local section database are inconsistent. I would like to take this opportunity to restate that all address changes should be sent to National and a copy sent to me. This way, I can stay as current as possible, since the National membership updates are sent on a quarterly basis.

Thanks again for all the members who support our local section – both financially and in volunteering their time. Help spread the word about local section membership to those non-members around you!

Nancy Hirko

Please sign me up for the local Pittsburgh Section of AIChE

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

Business _____ Residence _____

Email _____

Annual Dues are $16.00. Make check payable to "AIChE Pittsburgh Section" and send to our Treasurer John Hauser, PROSAF, Inc. 103 Yorktown Road, McMurray, PA 15317

AIChE's 52nd Career Fair

The place to be for Chemical Engineering Jobs

November 12th & 13th, 2000, Los Angeles, CA

Held in conjunction with the Institute's 2000 Annual Meeting in Los Angeles and featuring on-site interviews.

On-line Career Fair Resume Database (coming soon). Submit your resume (no fee) electronically. Let registered employers preview your credentials prior to the Career Fair.

On-line resume submission will begin September 15th.

Attendees

During the fair you can:

Apply for available jobs and have the opportunity for on-site interviews. Take advantage of workshops and career advisement.

To Register

Complete the 2000 Annual Meeting Registration form to register for the Career Fair and/or Annual Meeting.

Westin Bonaventure Hotel, Los Angeles, CA

Sunday, November 12th, 8:30 A.M. to 6:00 P.M. (orientation begins at 8:30 A.M.)
Monday, November 13th, 9:00 A.M. to 3:00 P.M.

Non-attendees

If you are unable to attend the Career Fair in person, submit your resume (no fee) and be included in a database made available to participating companies.

On-line resume submission will begin September 15th.

A list of the attending companies, and the job descriptions, will be posted:

(***www.aiche.org/careerservices***) shortly after the meeting

For links and additional information, visit the following AIChE site:

http://www.aiche.org/careerservices/jobs/carfair52.htm

Hot News

TAKING A CLOSER LOOK AT CERCLA

The act is not as efficient as it could be, says one expert. By Samuel Greylen for Office.com

Taking a Closer Look at CERCLA the act is not as efficient as it could be, says one expert. By Samuel Greylen for Office.com August 10th, 2000 ~ Government legislation, with oversight from the Environmental Protection Agency, has been effective in identifying many hazardous sites. But red tape often gets in the way of timely cleanup, says a legislative specialist from the American Institute of Chemical Engineers.

The Comprehensive Environmental Response, Compensation and Liability Act, or CERCLA, which is also commonly known as the Superfund, was made into law in 1980 in response to the discovery of dangerous chemical-disposal sites at Love Canal, New York, and elsewhere. But the AIChE charges that the current law requires cleanup procedures that are too lengthy and costly and focus too heavily on achieving process steps rather than cleanup results.

The New York-based organization of chemical engineers is proposing new approaches and methodologies for Superfund cleanups. Office.com asked Carla Clark Sullivan, legislative specialist with the AIChE, about the organizations efforts to make Superfund cleanups more efficient.

Has the CERCLA legislation been effective?

The legislation has been effective in identifying the sites that are in need of remediation or removal of contaminants. However, the cumbersome structure of the law makes cleanup costly and time-consuming. Therefore, a site remains contaminated much longer than necessary and costs much more to address.

Your organization has called for an "engineering-based solution." What does that mean?

An engineering-based solution is, in essence, a results-oriented approach rather than the current process-oriented approach. In other words, a focus on results rather than process would enable the lengthy investigations and feasibility studies to be replaced by a streamlined remediation process which focuses on ensuring public health and safety instead of focusing on achieving process steps.

Why is the cleanup of Superfund sites inefficient?

The cleanup of Superfund sites entails lengthy site investigations, feasibility studies and remediation design plans, all of which must be approved by the EPA before actual cleanup begins.

While this may have been placed in the law with the intent of ensuring public safety and health, the end result has, in effect, been little remediation and a lot of paperwork. EPA's Office of Inspector General has even recognized this in one of its reports to Congress. From the time a site is discovered and placed on the priorities list to the time it is actually cleaned up, about 75 percent of that time is consumed by site studies and design plans.

How will your proposed methods increase efficiency?

A results-oriented approach would establish clear cleanup goals, determine meaningful cleanup priorities, streamline the remediation process, assure the availability of the right technology, delegate responsibility for achieving cleanup goals and promote community involvement throughout the cleanup.

What should we expect of manufacturers, chemical producers and disposal sites in the future?

The growing trend in most marketplaces in America is toward sustainable development. AIChE partners with government and industry in programs such as Green Chemistry which seek to use new technologies to prevent waste and emissions at the source, eliminating future environmental problems.

One chemical company involved in the program saves $5.4 million per year and has decreased its emissions and wastes by greater than 35 percent.

Is it possible to build in remediation as part of every chemical process?

Building in remediation as part of every chemical process assumes that there will be some type of contamination associated. Our technologies have become consistently cleaner and safer, and, as mentioned earlier, are even on the cutting edge of new technologies to clean up existing sites.

Source: http://www.office.com/search/office.com/article?ARTICLE=19152

Chapter Announcements

FUTURE CITY COMPETITION

Volunteers Needed for the Future City Competition

The Engineer's Society of Western Pennsylvania (ESWP) in conjunction with the Carnegie Science Center will present the Second Annual Future City Competition in the Pittsburgh area. The Future City Competition asks middle school students to create ~ first on computer and then in large, three-dimensional models ~ their visions of the city of tomorrow. The Pittsburgh Regional Competition will be held at the Carnegie Science Center, on Saturday, January 20th, 2001. The Future City Competition is a national program sponsored by the engineering community to promote technological literacy and engineering to middle school students. The Future City Competition in the Pittsburgh Region is planned to include school districts from Allegheny and the immediate surrounding counties. Students can experience a fun way to learn about engineering and cities of the future.

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 up to ten hours per month to the project over the period from October to January. Mentors will work with a team of three students and a teacher in developing a city of the future on the SimCity computer program, building a model of one portion of the city and helping them to prepare a presentation of their city to a team of judges at the Regional competition in January. As a judge, you will be part of a four-member panel who will evaluate the team's verbal presentation and the models of the cities. The judging will take place during the competition at the Carnegie Science Center on Saturday, January 20th, 2001.

Regional first place teams (including the engineer mentor) receive a free trip to Washington, D.C. for the national finals during National Engineers Week. Prizes are awarded to the top five teams. Additionally, there are a number of Special Awards that will be presented.

For more information on volunteering as an engineer mentor for the 2000 Future City Competition, please contact Carl Schwartz, Second Vice President ESWP 412-374-3678.

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, Vice Chair — Zinc Corporation of America TEL: 724-773-9056; FAX: 724-773-9030; Email: michaelp871@hotmail.com

SCIENCE CENTER ACTIVITIES

Nancy Hirko

Welcome back from your summer vacations! Time to start thinking about upcoming events!

Just wanted to give everyone a preview of our upcoming activities at the Carnegie Science Center. On Saturday, November 11th, 2000, the local section will again be sponsoring a table to celebrate National Chemistry Week. The theme for this year's event is Kitchen Chemistry. We will be preparing gumdrop chemical compound models and handing out recipes for chocolate chip cookies ~ written in technical chemical terms. The public will be asked if they can guess what the recipe is for and perhaps "win" a chocolate chip cookie! Of course, I am open to any new ideas for our "Kitchen Chemistry" display.

National Engineer's Week will be held during the week of February 18th, 2001. This event will be celebrated early at the Carnegie Science Center on Friday, February 16th and Saturday, February 17th. We will be preparing our ever popular "super balls" and gum drop chemical compound models. I do appreciate our section's enthusiasm during this event.

The National Engineer's Week Committee is also looking for some volunteer help. Assistance is needed in the following areas:

- Registration table
  February 16th and 17th
- Help with the Science Stage Program
  (some planning assistance required

- Assist with the Girl Scout Badge program
  February 16th and 17th
- Be part of the Discover "E" Program
  (during the month of February)

For the Discover "E" Program, engineers are needed to present a 40-minute presentation on engineering to classes of 7th and 8th grade students during the month of February. The presentation includes a ten-minute talk on different engineering disciplines, a twenty-minute hands-on activity and an eight-minute engineering video. You will be trained for this program.

Please contact Linda Kent at the Carnegie Science Center if you are interested in volunteering for the Discover "E" Program or the other (non-chemical engineering) help that is needed. You can register online at http://ctc.einpgh.org/engineers. Otherwise, please contact me if you are interested in staffing the Pittsburgh Section table at either of these two events.

Engineering Humor

This is for our Physics Lovers out there

The following is said to be a true story. It pays tribute to the virtue of independent thinking among technical minds.

A question in a physics degree exam at the University of Copenhagen read: "Describe how to determine the height of a skyscraper with a barometer."

One student replied: "You tie a long piece of string to the neck of the barometer, then lower the barometer from the roof of the skyscraper to ground, then add the length of the string plus the length of the barometer, which will equal the height of the building."

This highly original answer so incensed the examiner that the student was failed immediately. He appealed on the grounds that his answer was indisputably correct, and the university appointed an independent arbiter to decide the case.

The arbiter judged that the answer was indeed correct, but did not display any noticeable knowledge of physics.

To resolve the problem it was decided to call the student in and allow him six minutes in which to provide a verbal answer that showed at least minimal familiarity with the basic principles of physics. For five minutes the student sat in silence, forehead creased in thought. The arbiter reminded him that time was running out, to which the student replied that he had several extremely relevant answers, but couldn't make up his mind which to use.

On being advised to hurry up the student replied as follows:

"Firstly, you could take the barometer up to the roof of the skyscraper, drop it over the edge, and measure the time it takes to reach the ground. The height of the building can then be worked out from the formula H = 0.5gxt squared.

But bad luck on the barometer.

"Or if the sun is shining you could measure the height of the barometer, then set it on end and measure the length of its shadow. Then you measure the length of the skyscraper's shadow, and thereafter it is a simple matter of proportional arithmetic to work out the height of the skyscraper.

"But if you wanted to be highly scientific about it, you could tie a short piece of string to the barometer and swing it like a pendulum, first at ground level and then on the roof of the skyscraper. The height is worked out by the difference in the gravitational restoring force T = 2 pi square root (l /g).

"Or if the skyscraper has an outside emergency staircase, it would be easier to walk up it and mark off the height of the skyscraper in barometer lengths, then add them up.

"If you merely wanted to be boring and orthodox about it, of course, you could use the barometer to measure the air pressure on the roof of the skyscraper and on the ground, and convert the difference in millibars into feet to give the height of the building.

"But since we are constantly being exhorted to exercise independence of mind and apply scientific methods, undoubtedly the best way would be to knock on the janitor's door and say to him 'If you would like a nice new barometer, I will give you this one if you tell me the height of this skyscraper.'"

The student was Niels Bohr, the only Dane to win the Nobel Prize for Physics.

If you have any fun, publishable engineering jokes you would like to share with AIChE Members email them to pegpana@chemtech88.com.

Newsletter Deadline

The deadline for the November Newsletter is
Tuesday, October 17th, 2000
Submit information to
Peggy Panagopoulos ➢ pegpana@chemtech88.com

Advertisements

Interested in Placing an Ad in Future Newsletters?

Help sponsor the AIChE by placing an ad: Full page $300.00; 1/2 page $175.00; 1/4 page $95.00; 1/8 page $45.00; 1/12 page $30.00. Place multiple ads and receive a discount! Three (3) consecutive ads - 10% off; Eight (8) consecutive ads or more - 30% off.
To place an ad, please contact:
Peggy PanagopoulosChemTech Consultants, Inc.1370 Washington Pike, 4th FloorBridgeville, PA 15017
TEL 412-220-4612 ~ FAX 412-221-5685 ~ Email pegpana@chemtech88.com

AIChE Pittsburgh Section
2000-2001 Section Officers

Executive Committee

Chair
Ed Moretti (emoretti@mbakercorp.com)
Baker Environmental
412-269-6055

Vice-Chair & Program
Michael Flaherty (michaelp871@hotmail.com)
Zinc Corporation of America
724-773-9056

Secretary
Bill Hargest (hargest@ppg.com)
PPG Industries, Inc.
TEL 724-274-3364
FAX 724-274-3420

Treasurer
John Hauser (prosaf@sgi.net)
PROSAF, Inc.
724-942-3717

Counselors
Carol Kessler (kesslerc@usfilter.com)
US Filter
412-269-5853

Larry Biegler (lb01@andrew.cmu.edu)
Carnegie Mellon University
412-268-2232

Past Chair & Nominations
Ted Andersen (TSAndersen@AOL.com)
ChemTech Consultants
412-220-4555

Additional Officers and Chairs

Membership & Engineer Week

Nancy Hirko (nmhirko@uss.com)
U.S. Steel
412-433-5914

Newsletter Editor

Peggy Panagopoulos (pegpana@hotmail.com)
ChemTech Consultants
412-220-4612

Development

Gerald LaRosa (Gerald.LaRose@Kvaerner.com)
Kvaerner Metals
412-918-3654

Committee Chairs

Safety & Environmental	Shiaw Tseng
Scholarship	Sam Vance
Student Night	Position Open

Web Master

Dick Dupree (rdupree@symphoni.com)
Symphoni Interactive, LLC