



SEPTEMBER MEETING NOTICE

- Where:** Zinc Corporation of America
300 Frankfort Road, Monaca, PA
- When:** Thursday, September 19, 2002
- Time:** 6:00 PM – Plant Tour at ZCA
7:45 PM – Dinner at the Wooden Angel
- Menu:** Please select from the following menu items:
- ❖ Grilled Pork Chop with Scalloped Apples
 - ❖ Chicken Breast Stuffed with Goat Cheese
 - ❖ Boston Scrod Baked with Fresh Herbs and Lemon
- (Vegetarian option available upon request)
- All entrees served with soup, tossed salad, roasted potatoes, pecan honey carrots, rolls and butter, dessert, and choice of beverage.
- Cost:** \$25.00 Members
\$15.00 Students / Unemployed Members
\$30.00 Non-members

**FOR SEPTEMBER MEETING,
RSVP NO LATER THAN
FRIDAY SEPT 13TH, 2002**

To:
Mr. Nathan Peters, Vice Chair
Tel 412-889-7833
Email: npeters@larocheind.com
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.

~ About the Plant Tour ~

Zinc Corporation of America (ZCA) is the largest zinc producer in the United States and the world's foremost manufacturer of value-added zinc products including zinc metal, zinc oxide, zinc dust, and zinc powder. ZCA is a fully integrated zinc producer – from mine to market – as well as the world's largest producer of zinc from recycled sources. ZCA was formed in 1987 as the result of a merger between two of the United States' best-known zinc manufacturers, The New Jersey Zinc Company and St. Joe Resources Company.

ZCA's Monaca facility boasts the Western Hemisphere's only pyrometallurgical zinc manufacturing facility. This technology enables ZCA to utilize virtually any zinc-containing feed. Producing zinc oxide since 1931, the ZCA Monaca facility has been expanded and modernized several times and is now recognized as one of the world's largest zinc oxide producers and one of the most modern and efficient value-added zinc manufacturing facilities in use. The 350-acre plant site, powered by its own 110-megawatt power station, is located 28 miles northwest of Pittsburgh along the Ohio River.

MORE INFORMATION IS AVAILABLE AT WWW.ZINCCORP.COM

Safety Policy: To comply with ZCA's safety policy, we ask you to wear slacks and closed-toe shoes for the plant tour. Please bring safety glasses and a hard hat if you have them.

~ Directions ~

To the Plant:

From Pittsburgh – Take 279 South to Rt 22/30 West to Rt 60 North to Rt 18 South (Exit 12). ZCA is at the first traffic light on the right.

Alternate Route from Pittsburgh – Take 65 North to 18 South. ZCA is just south of Monaca, at the first traffic light on the right past the Rt 60 interchange.

(CONTINUED ON PAGE 3)



LETTER FROM THE CHAIR

Welcome back AICChE members!

September is almost here and the 2002-2003 season is about to kick off. I'd like to thank everyone who participated in the last program year. At our wrap-up meeting in May, we had the pleasure of having two of our student members present their research projects. And at the roundtable discussion, many of you had some great suggestions for this upcoming year.

First, I'd like to thank Michael Flaherty for his work as Chair last year, and the following people for their service over the past several years:

- Larry Biegler – Counselor
- Ashley Smith – Membership Chair
- Peggy Panagopoulos – Catalyst Editor
- Sam Vance – Scholarship Chair

Your service to our Section has been enormous, and you will be missed.

I'd like to welcome our new officers for the 2002-2003 year:

- Nathan Peters – Vice-Chair and Programming
- Dr. Joseph McCarthy – Counselor
- Holly Gray – Membership Chair
- Mariangela Peters – Catalyst Editor
- Ed Moretti – Scholarship Chair
- David Missenda – Student Chapter Liaison

Welcome aboard! I look forward to working with all of you this upcoming year.

We have an exciting year planned. In addition to our annual Student Night, we will again be joining the AWMA at the Penn Brewery, and we will kick off the year with a tour of Zinc Corporation in Monaca. We will also be offering a series of workshops to help people brush up on their résumé-writing, networking, and interviewing skills. Our section's outreach programs will continue with our participation in National Engineer's Week, National Chemistry Week, and Future Cities.

Other new things for this year include a new website: www.aichepgh.org. I encourage everyone to check it out to keep up to date with upcoming meetings. And for the first time, we will be gradually moving to an e-newsletter (paper copies will still be available for those who still want them).

I look forward to working for all of you this year. I sincerely hope that all of you – especially those of you who haven't been to a meeting in a while – will be able to join us this year.
See you on September 19th!

Regards,

JoAnn Truchan
Pittsburgh Section AICChE Chair

RESUME-WRITING WORKSHOP

In this current economic climate, keeping up our job-hunting skills is becoming ever more important. Some of us haven't had to search for a while, and our skills are a bit rusty. Others just want to keep sharp.

Either way, this informal workshop will be a good refresher, especially in the current job market.

Resume Writing Workshop

Saturday, October 12, 2002

9:00 am

The Pittsburgh Oratory Newman Center
4450 Bayard Street, in Oakland

Please RSVP by October 7th to JoAnn Truchan
at jtruchan@achd.net or (412)-578-7981.

Coffee and donuts will be provided.

Directions will follow in the October newsletter.



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
Baker Environmental, Inc
Airport Office Park, Bldg 3
Coraopolis, PA 15108
hgray@mbakercorp.com

Thank you!

We look forward to seeing you at this year's events!

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,
CFX Software & Services,
Omega Corporate Center
1260 Omega Drive
Pittsburgh, Pennsylvania 15205

SEPT MEETING NOTICE (CONT. FROM PAGE 1)

From East – Take PA 76 Turnpike West, past Pittsburgh. Take Exit 1A to 60 South to 18 South (Exit 12). Go to the first traffic light, and make a right.

From South – Take 79 North to 22/30 West to 60 North to 18 South (Exit 12). Once you are on Rt 18, ZCA is at the first traffic light on the right.

From North/West – Take 80 East to 11 South to 14 East. Get on 51 South. Follow 60 South to 18 South. ZCA is at the first traffic light on the right.

From the Plant to the Restaurant:

The Wooden Angel, on Leopard Lane in Beaver, PA

Turn left out of the plant onto Rt 18 North. Continue onto Rt 60 North. Take Rt 60 North to Beaver. Exit on Rt 88 East. Proceed two miles. Turn left at the Sheetz. Pass through two stop signs, and turn left at the second stop sign. Go one block, then turn left. Take the first right, and the Wooden Angel will be on your left.

STUDENT SECTION

First off, I would like to welcome the local student sections of the University of Pittsburgh, Carnegie Mellon University, Youngstown State University and West Virginia University. In the coming months, a representative from the Pittsburgh Chapter will be visiting your campus.

To receive the monthly newsletter in PDF as an e-mail attachment, please forward your e-mail address to David_Missenda@URSCorp.com.

Finally, I would like to thank Sandeepa Sandadi of WVU and Matthew Thomas of Youngstown State University for their presentations at the May 2002 meeting.

I look forward to seeing our student members at AIChE meetings.

David Missenda
 Student Outreach Chair



CHAPTER ANNOUNCEMENTS

BACK TO SCHOOL

AICHe members can enjoy a 10% discount off tuition to MIT's Advanced Study Program (ASP). The courses are for credit, taught by MIT faculty, and delivered entirely over the Internet. For more information on courses and an application form, visit <http://www.aiche.org/distancelearning/>.

FREE CCPS BOOK PROTECTS YOUR PLANT

Today, all industrial companies that handle hazardous chemicals must protect themselves from terrorist events. AICHe's Center for Chemical Process Safety has developed Security Vulnerability Analysis (SVA) to help you analyze and manage security vulnerabilities at chemical sites. The new book Guidelines for Analyzing and Managing the Security Vulnerabilities at Fixed Chemical Sites is free for use by chemical manufacturers at www.aiche.org/ccps.

AT A LOSS FOR WORDS?

Next time you speak to students about chemical engineering and career opportunities, use AICHe's free slide presentation with 20 slides of discussion points in PowerPoint format. AICHe will email you the presentation or mail transparencies. Contact Alexis Geier at alexg@aiche.org.

CALL FOR PAPERS

The 'Call for Papers/Proposal to Present' process is now open for AICHe's 2003 Spring National Meeting in New Orleans, March 30-April 3. Submit online at <http://www.aiche.org/springapp/>. For a list of Spring topics, visit <http://www.aiche.org/conferences/spring/03programnotes.htm>.

NEWSLETTER DEADLINE

**THE DEADLINE FOR THE OCTOBER NEWSLETTER IS
SEPTEMBER 16, 2002.**

**Please submit information to:
Mariangela Peters
Sony Electronics - AG
1001 Technology Drive
Mt Pleasant, PA 15666
mariangela.peters@am.sony.com
724-696-8234**

CONGRATULATIONS !

Congratulations to one of the AICHe Pittsburgh Section's past Chairs, Ed Moretti.

Ed's technical paper on ways to "Reduce VOC and HAP Emissions" was published by AICHe in *Chemical Engineering Progress* magazine this summer. (June 2002 issue, cover article, pages 30-40.)

The paper discusses the different abatement technologies available for controlling volatile organic compounds and hazardous air pollutant emissions, and the criteria and considerations for choosing among them. Information for estimating investments costs and annual operating costs is also included for each abatement method.

Kudos, Ed!

HOT NEWS

Hopefully, you've found a way to beat the summer heat-whether it's a cookout in the shade, eating ice cream on the boardwalk, or having a picnic in the mountains. Or sitting in your office surrounded in icy air conditioning. Not as fun, maybe, but a lot less calories. Wherever you are, cool your heels for a couple of minutes and enjoy these briefs from AICHeXchange.

THE THRILLS THAT CHILL

Cool off this summer with a ride on one of America's roller coasters. Son of Beast in Ohio's Paramount's Kings Island careens down 214 feet and reaches speeds of up to 78.3 miles per hour-not bad for a wooden roller coaster. Find a thrill near you: <http://ultimaterollercoaster.com>.

CORN CRAZE

In late summer, America explodes with corn festivals. It's no wonder-the average American eats 25 pounds of corn each year (One editor of AICHeXchange manages that much in the month of August alone.) For a list of festivals and corn landmarks, corn recipes, and directions on how to make your own corn maze visit: <http://www.agry.purdue.edu/ext/corn/>.

SPICE IT UP

Onions, garlic, and hot peppers-the source of heartburn and good health? Garlic fights intestinal woes and onions are great blood thinners, reducing risk of heart attack or stroke. To find out how a little heat can make you healthy, visit <http://whyfiles.org/070spice/1.html>.



A CALL FOR ENGINEERING MENTORS

The Pittsburgh Regional Future City Competition is in immediate need of engineer mentors. Mentors are needed to begin work with middle school teams. Please consider volunteering as a mentor for this fun and worthwhile experience.

The Engineers' Society of Western Pennsylvania (ESWP) in conjunction with the Carnegie Science Center will present the 4th 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 Music Hall, on Sat, January 18, 2003.

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 surrounding counties. Students can experience a fun way to learn about engineering and cities of the future.

Through the program a student will:

- * Work in a team of (3) students, under the guidance of a teacher and an engineer.
- * Use a popular award-winning computer game, SimCity 3000 to design their future city.
- * Build a scale model of a section of their city.
- * Utilize their communications skills by preparing an abstract, an essay and a verbal presentation relating their experience in the design of their city and some specific engineering features.

For more information on volunteering as an engineer mentor for the 2002 Future City Competition, please contact Carl W. Schwartz at 412-374-3678, or email at schwarcw@westinghouse.com.

Please visit our website at futurecitypittsburgh.org

SUMMER SCIENCE

Grilling It

Marinades, the sauces used to prepare meat for cooking, may prevent the formation of cancer-causing chemicals.

One way to make meat taste better is to marinate it in a soup of spices, oil, sugar and water. Two years ago, chemist Mark Knize of Lawrence Livermore National

Laboratory stumbled across an unexpected benefit of marinades while looking into the formation of heterocyclic aromatic amines (HAAs) while chicken is cooked.

HAAs have been suspected of causing cancer since the 1920s and 1930s, when workers in dye factories came down with the disease after contact with the large, organic molecules. According to Knize, HAAs cause their damage by sticking to DNA and causing mutations as the DNA replicates.

In 1996, while wandering through a street fair in his home town of Tracy, Calif., Knize bought some chicken-on-a-stick and returned it to the lab for testing. He was surprised to find that the well-done meat had far lower levels of HAA than samples he'd cooked in the laboratory.

Knize wondered why the street food had such low levels of suspected carcinogens. Eventually, his laboratory tests credited the marinade in which the chicken had been dipped before cooking. Their interest piqued, the researchers cooked up a marinade of their own, and got another drastic reduction in the bothersome HAAs. But what part of the marinade?

It turned out that the thicker components of the marinade -- primarily oil and sugar -- were coating the chicken and somehow gumming up the high-temperature dehydration reactions that form HAAs. "The whole process is prevented by moisture, somehow," says Knize. But he admits that "It's hard to come up with a mechanism."

The marinade technique also seems to work with steak, he adds, and could be useful whenever meat is cooked at high temperature, either over a grill or in a frying pan. Roasting in the oven and boiling are too cool to make HAAs.

Knize's group continues studying the problem -- trying to nail down exactly how many people might be getting sick from HAAs in food.

Source: <http://whyfiles.org/070spice/4.html>

Summer Lights

The firefly's glow mechanism, which hinges on the oxidation of firefly luciferin, is incredibly efficient--80 out of 100 reacting molecules go on to produce a photon of light.

Our fascination with a firefly's light is evidenced by "Light Sticks", those short, plastic, tapered rods that contain a bizarre, brilliant green liquid. You can bend the plastic stick slightly, and hear the crunch of a small, liquid-filled glass capsule breaking within. As the two



ingredients blend, an eerie bright green glow spreads throughout the stick.

In the early 1960s, when scientists took the first steps toward developing their own version of a firefly, they knew what was required: a molecule that radiates light when it's excited and an energy source to excite the molecule. There are numerous possible energy sources, such as light, heat, and electricity. In chemiluminescence, that source is a chemical reaction.

But the reaction has to generate a huge bundle of available energy, and transfer it as a package instantaneously to the fluorescent molecule without radiating any as heat. Known examples of such perfectly orchestrated reactions were few.

Also in the early 1960s, Edwin A. Chandross, a young chemist at Bell Labs, was searching for a general way to explain chemiluminescence. Peroxides, with their potential to liberate large amounts of energy during some chemical reactions, seemed to be likely participants.

After a number of experiments, he found to his great excitement that oxalyl chloride mixed with hydrogen peroxide and a fluorescent dye produced chemical light. The efficiency was only about 0.1%, but it was the foundation from which sprang modern chemiluminescence. Chandross, unaware of the powerful potential of his discovery, never patented it.

Chemist Michael M. Rauhut and his colleagues corresponded with Chandross about his oxalyl chloride chemistry, then went to work on the reaction--studying it and looking for avenues that would produce chemical light intense enough to be of practical use.

Rauhut and his colleague Laszlo J. Bollyky developed a series of oxalate esters. Ultimately, Rauhut designed a phenyl oxalate ester that, when mixed with hydrogen peroxide and a dye, gave a quantum yield of 5%--not as efficient as a firefly, but still brilliantly useful.

They dubbed it Cyalume, and it became the trademark name for American Cyanamid's chemical light products.

Source: <http://pubs.acs.org/cen/whatstuff>

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Houston, TX, Oct 16-17, 2002

Philadelphia, PA, Nov. 13-14, 2002

Reno, NV, Dec. 12-13, 2002

Call or E-mail for information: 708-425-2279, Gutbar@aol.com



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2002-2003 Tentative Monthly Meeting Schedule

Date	Topic	Location
October 23	Technical Presentation	Bloomfield (Pittsburgh)
November	Site Tour	TBA
January	Joint Meeting with AWMA	Penn Brewery
February	Student Night	University of Pittsburgh
March	Technical Presentation	TBA
April	Plant Tour	TBA
May	McAfee Awards	TBA

Mark your calendars!

For AIChE's September & October Events:

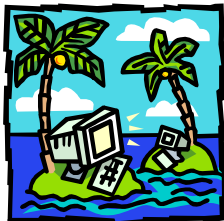
Sept 19, 2002	Monthly Meeting	Plant Tour at Zinc Corporation of America
Oct 12, 2002	Saturday Seminar	Resume-Writing Workshop
Oct 23, 2002	Monthly Meeting	Technical Presentation: " Computational Chemistry" Dr. David Sholl, Carnegie Mellon University

Visit us on-line at www.aichepgh.org



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Welcome Back!



PROUD TO BE AN AMERICAN!
