

The Award Winning

Catalyst

Pittsburgh Section - American Institute of Chemical Engineers



Volume 15 Issue 1

[www.lm.com~aiche/](http://www.lm.com/~aiche/)

Sept 2000

September Meeting Notice

Officers Meeting: 5:00 P.M.

Where: **TAMBELLINI RESTAURANT**
139 7th Street
Pittsburgh, PA 15222

When: Wednesday, September 20th, 2000

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

Menu: Entrée Selections (select one of the following):

Linguini Da Vinci: Chicken, roasted red peppers, shallots, sun dried tomatoes with garlic and olive oil. Served with wild greens salad and dessert.

Veal Marsala: Veal sautéed in mushrooms and marsala wine. Served with wild greens salad, side of the evening, and dessert.

Scrod Tambellini: Scrod broiled with garlic butter and Italian crumbs. Served with wild greens salad, side of the evening, and dessert.

Cost: \$25.00

RSVP No Later Than

Wednesday, September 13th, 2000

Mr. Michael Flaherty, Vice Chair
Zinc Corporation of America
Tel 724-773-9056
Email michaelp871@hotmail.com

Name _____

Menu Selection _____

Email _____

Phone _____

EVENING'S TOPIC

Companies in the business of finding and exploiting oil and gas worldwide find that the reserves of heavy oil are both viscous and dense. This presents major problems for the oil-water separation process, which is mostly done under gravity in large vessels. Any increase in separation efficiency would have a major impact on the capital cost of the tanks, as well as on the cost of the chemicals that are added to enhance coalescence and separation. In this project, Texaco has used computational fluid dynamics (CFD) to troubleshoot an existing wash-tank installed in Indonesia. The ability to simulate the existing process has provided important insights into the flow features, which were not intuitively obvious. Equipped with the better understanding and knowledge of the process, Texaco was able to suggest and implement modifications to the existing design and improve separation efficiency.

EVENING'S GUEST SPEAKER

Jeffery P. Henning, MSChE

Jeff received his Bachelor's and Master's Degrees in Chemical Engineering from the University of Toledo, in Toledo, Ohio. He's worked as a chemist (four years) and then a Chemical Engineer (nine years) for Owens-Illinois, a manufacturer of glass containers for the food, beverage, and pharmaceutical industries. Jeff holds three patents, is published in Radiation Research and the Journal of Photochemical Photobiology. Jeff is currently part of the CFX technical team as a CFD consultant in Pittsburgh, Pennsylvania, where he specializes in multi-phase and chemically reacting flows.

DIRECTIONS TO TAMBELLINI RESTAURANT

From the East: take 376 into Pittsburgh, take Grant Street Exit, make left on 6th Avenue (USX Tower on right), veer right onto 7th Street (do not make a hard right onto Liberty Avenue), Tambellini is on right hand side of 7th Street following the Benedum Theater.

From Erie: take 79 South to 279 South (left exit), pass through tunnels, take Liberty Avenue into town, turn left onto 7th Street. Tambellini is on right hand side of 7th Street following the Benedum Theater.

From West Virginia: take 70 East to 79 North to 279 (Pittsburgh), take Liberty Avenue into town, turn left onto 7th Street. Tambellini is on right hand side of 7th Street following the Benedum Theater.

Letter from the Chair**FROM THE CHAIR**

It is hard to believe that another summer is over and it is time to start a new program year with the Pittsburgh Section of AIChE. I hope that everyone had a safe and rewarding summer and is looking forward to this year's AIChE events.

I must mention one very newsworthy item about our section that occurred over our summer hiatus. I am very proud to announce that the Pittsburgh Chapter AIChE received the 1999-2000 **Marx Isaacs Award for outstanding newsletter**. This award was presented at the AIChE Officers Meeting in Washington, D.C. to our Newsletter Editor, Peggy Panagopoulos and myself in June.

The Marx Isaacs Award is sponsored by the National AIChE and recognizes the best newsletter among national entries based on content, effectiveness of communication and innovation. Our chapter won the honor as best entry in the Large Local Section category (1,000 or more members).

Our Pittsburgh chapter improves with every year. The meeting attendance continues to increase. We have a diverse group of participants from recent graduates to our honorable 50-year members. Our goal is to continue our growth by offering meetings where you can network with your peers while educating yourself with new and interesting topics.

Last year's events concluded with a terrific Awards Banquet at the historic Grand Concourse. This year's schedule is shaping up to include a fascinating mix of plant tours and technical presentations.

With much of West Virginia part of our section, we want to encourage engineers from the Mountaineer State to participate in our section's activities. Please make a note that we will be visiting Wheeling-Nisshin in Follansbee, West Virginia in April. We also always encourage any suggestions for other activities in West Virginia. We need fresh views and enthusiasm on the executive committee. We will be looking for more new faces in working committees this year to grow new activities and share the load now being carried by too few individuals. I have asked each officer to identify small, distinct tasks that new volunteers can be responsible for. Watch future Catalysts for your opportunity to get involved.

I am excited about the new program year. I look forward to meeting you at our September meeting.

Best regards,

ED MORETTI
AIChE CHAIR

Letter from the Editor**NOTE FROM THE EDITOR**

I hope everyone had a wonderful summer!

The local Pittsburgh chapter is very excited about this year's agenda. It is full of informative meetings, activities, and plant tours. I encourage everyone to become active members in our local chapter. It is an excellent opportunity to meet and associate with fellow chemical engineers.

Thank you to all of our sponsors and members. You have helped make our Catalyst a huge success. We were awarded this year's **Marx Isaac's Award for Outstanding Newsletter**. This National Recognition shows that our Pittsburgh Chapter is still a proud and strong section.

Thank you to **Baker Environmental** and **ChemTech** for sponsoring Ed Moretti and I at this year's AIChE National Officer's Conference where we were presented with this prestigious award.

I look forward to meeting you at future AIChE meetings!

PEGGY PANAGOPOULOS
AIChE NEWSLETTER EDITOR
CHEMTECH CONSULTANTS, INC.

Membership Corner**LETTER FROM OUR MEMBERSHIP CHAIR**

Welcome all new and returning members!!

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 \$14.00. Make check payable to "AIChE Pittsburgh Section" and send to 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**TECHNOLOGY NEWS****Process Improvement Reduces Environmental Consequences of HIV-Drug Manufacture**

The research covered in this article was presented at AIChE's Spring National Meeting in Atlanta in March.

The environmental impact of the manufacture of Cytovene, an essential agent in the battle against opportunistic infections associated with HIV and AIDS has been greatly reduced by an improvement in the chemical process.

Gary Semones and his colleagues at Roche's Boulder Technology Center have cut the consumption of raw materials used to make Cytovene by more than 90% with their new GTE (Guanine TriEster) process. This is extremely important given that the growing number of HIV-related cytomegalovirus (CMV) infections has boosted the commercial demand for Cytovene to 50 tons per year.

Cytovene (ganciclovir) is a drug that prevents infections related to CMV. Cytomegalovirus is one of the most common infections associated with immunocompromised patients. It is carried in 50% of the general population and 90% of patients with HIV.

In healthy immune systems, CMV is kept in check. However, with immunocompromised patients, CMV can infect several organs at once. The most common illness caused by CMV is retinitis, lesions on the retina that can cause blindness. Other patients who are at risk for CMV are organ transplant patients, whose immune systems are purposely suppressed to prevent organ rejection.

With the demand for Cytovene expected to continue growing, Semones notes the need to reduce the environmental impact caused by the chemical process behind it. While the first process involved eight reactions, the current process is much more efficient.

"What we've done is successfully demonstrate the potential for a 'one-step' process for the production of Cytovene. In doing this, we reduced the number of chemical reagents from 28 to 11, and eliminated 11 different by-products."

The social benefits of the new process are numerous. First, the environmental impact of the new process is minimal. Semones points out that "solvent use has been greatly reduced, as the new process recovers over 90% of the input solvents." In addition, the two waste streams that were associated with the old process have been eliminated.

Second, the cost reduction ensures that the rising demand for Cytovene will be met. Semones points out that "the cost-savings are the direct result of eliminating steps in the old process." As the medical profession is able to perform increasingly complex organ transplants, and treatment protocols for HIV make it a more manageable disease, keeping costs down for one of the most-used medications is extremely important. The GTE process is helping chemical engineers accomplish this feat.

Source: <http://www.aiche.org/newsroom/briefs.asp?CatID=2&BriefID=2>

What's New in the Chapter**MARX ISAACS AWARD FOR OUTSTANDING NEWSLETTER**

This award was presented at the AIChE Officer's Meeting in Washington, D.C. to the Peggy Panagopoulos, Newsletter Editor and the Ed Moretti, Section Chair, in June.

The award recognizes the best newsletter among national entries based on content, effectiveness of communication and innovation. The Pittsburgh chapter won the honor as best entry in the Large Local Section category (1,000 or more members).

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.

In addition, 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 so we can discuss it.

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.

Article**ENGINEERS CLAIM JAPANESE NUCLEAR ACCIDENT "AVOIDABLE"**

The following is based on research presented at AIChE's Spring National Meeting in Atlanta in March. If anyone should know about the value - and the potential dangers of - nuclear energy, it would be Leroy Lewis.

Lewis, who spoke at the panel discussion on the nuclear accident at Tokaimura, Japan at the Spring National Meeting, went on-site at Tokaimura with coworker Valerie Putman for the Idaho National Engineering and Environmental Laboratory. Lewis and Putman examined the evidence surrounding the incident to help determine what went wrong.

What they found was that the accident was definitely avoidable. However, this has done nothing to shake Lewis' faith in nuclear energy as our most viable source of energy in the future.

Lewis summed up his article of faith as follows: "If anyone wants to have a 'no nuclear energy' day, I would encourage it. What would happen is that a large number of people would have to go through the day without electricity, as so much of our electric power is generated with nuclear power. I think that people who are scared of nuclear energy would then see how much value it brings to our lives. It is truly our most efficient energy resource." According to the web site of The Uranium Institute (www.uilondon.org), nuclear energy accounts for 20% of the electricity in the United States. This figure is much greater in countries such as France (75%), Belgium (47%), and the Ukraine (44%).

So what does Lewis recommend to avoid accidents such as the one that happened in Japan? His first recommendation: to take heed of the past. According to Lewis, the circumstances that led to the accident were no different from similar circumstances that led to other runaway reactions. These circumstances included complacency (the workers involved had not been thoroughly drilled in safety procedures) and the concentration of uranium (18.8%) they were dealing with to create fuel, which was similar to concentrations that resulted in "criticality" (the occurrence of a runaway reaction) in the past.

"What did we learn? I think we learned that avoiding accidents mostly has to do with preventing each new generation of nuclear plant workers from making the same mistakes," Lewis said. "I think that, when a long period of time elapses between problems, people become complacent. In turn, nothing catastrophic happens in the short-term, so the complacency continues. Then, a tragedy occurs."

Lewis goes beyond that to say "We also must have the proper notification systems in place. In the case of Tokaimura, ambulances drove right up to the doorway of the plant where the accident occurred, and people living near the plant were not notified until almost six hours had passed. This increased the possibility of people being exposed."

Lewis ultimately believes that nuclear energy is the best source of energy, and a source that will continue to become safer as chemical engineers and other professionals work to improve the procedures in place.

According to Lewis, nuclear energy can help sustain the earth's energy supply during the population boom expected to take place during the next 50 years. Nuclear energy, unlike the earth's other resources (such as fossil fuels), "will not be exhausted. We are just beginning to tap into the potential of this energy source. Simply following a set of good safety guidelines will allow us and future generations to make use of its incredible capabilities."

Source: <http://www.aiche.org/newsroom/briefs.asp?CatID=2&BriefID=2>

Advertisements**Interested in Placing an Ad in Future Newsletters?**

Help sponsor the AI ChE by placing an ad

Full page	\$300.00
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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 Panagopoulos
ChemTech Consultants, Inc.

1370 Washington Pike, 4th Floor
Bridgeville, PA 15017
TEL 412-220-4612 ~ FAX 412-221-5685 ~ Email
pegpana@chemtech88.com

Newsletter Deadline

The deadline for the October Newsletter is Thursday, September 14th, 2000
 Submit information to: Peggy Panagopoulos ~ pegpana@chemtech88.com

Engineering Humor**Bumper Sticker Fun**

How many of these bumper sticker logos can you relate too?

1. So many pedestrians, so little time
2. Cleverly disguised as a responsible adult
3. Eat right, exercise...die anyway
4. If you can read this, I've lost my trailer
5. I refuse to have a battle of wits with an unarmed person
6. Where are we going and why am I in a handbasket?
7. It's been lovely but, I have to scream now
8. Remember: stoplights timed for 35 mph are also timed for 70
9. Honk! if you've never seen an Uzi fired from a car window
10. How many roads does a man travel before he admits he is lost
11. Teamwork is a lot of people doing what I say
12. You're just jealous because the voices are talking to me

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

Brain Teaser

"Some time ago, one of the owners of the store came into the kitchen and asked me whether I was expecting a visitor. "Yes," I said, "at three o'clock." Then he had said that he had forgotten his watch, and he asked how much time it was left until then. I told him, "Fifty minutes ago, there were four times as many minutes as it was after noon." The owner was very angry. He thought I was making fun of him, and he threatened to fire me. Of course, you know what time it was when he asked me the question. What time was it?

Check out our website for the answer at www.lm.com/~aiche/.

Schedule of Events

Date	Subject (Location)	Special Event
October 17	TBD	
November 29	TBD	
January 17	Penn Brewery, North Side	Joint Meeting with AWMA
February	University Club	Student Night
March 20	TBD	
April 18	Wheeling-Nissin Plant Tour	
May 17	TBD	McAfee Awards Banquet

**AIChE Pittsburgh Section
1999-2000 Section Officers****Executive Committee****Chair**

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 412-269-6055

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Committee Chairs

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



The Award Winning Catalyst

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