



OCTOBER MEETING NOTICE

- Where:** Lombardozzi's Restaurant
4786 Liberty Avenue (Bloomfield)
in Pittsburgh, PA
- When:** Wednesday, October 23, 2002
- Time:** 5:30 PM Registration and Networking
6:00 PM Dinner
7:00 PM Technical Presentation
- Menu:** Please select from the following menu items:
- ❖ Top Sirloin of Beef
 - ❖ Chicken Breast Marsala
 - ❖ Pasta with Clam Sauce and Shrimp
- (Vegetarian option available upon request)
- All entrees served with soup, dinner salad, potatoes, rolls and butter, and choice of coffee or tea.
- Cost:** \$17.50 Members
\$15.00 Students / Unemployed Members
\$20.00 Non-members

**FOR OCTOBER MEETING,
RSVP NO LATER THAN
FRIDAY OCT 18TH, 2002**

To:

Ms. JoAnn Truchan, Chair
Tel 412-578-7981

Email: jtruchan@achd.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.

~ About the Speaker ~

Dr. David Sholl is an Associate Professor of Chemical Engineering at Carnegie Mellon University. He holds a Bachelors of Science from Australian National University, and a Masters degree and PhD from the University of Colorado.

"A Consumer's Guide to Computational Chemistry"

The capabilities, real and advertised, of computational chemistry have grown enormously in recent years. Continued advances in computer technology have made many types of computational chemistry widely available.

Dr. Sholl will give an overview of this field for people who are not interested in the intricate details of basis set superposition errors and correlation functionals but would like to know what can (and can't) be expected from modern computational chemistry methods.

Professor Sholl's research focuses on materials whose macroscopic dynamic and thermodynamic properties are strongly influenced by their atomic-scale structure. Much of this research involves applying molecular simulation techniques such as molecular dynamics and Monte Carlo simulations to materials of interest.

Computational quantum chemistry can now provide quantitative insight into the atomic-scale events that control many practical catalytic processes. Dr. Sholl's group is using this capability to study a variety of physical issues, including the interactions of hydrogen and sulfur with Pd alloy membranes, the formation of coke on steam reforming catalysts, and mobility of metal modifiers on hydrodesulfurization catalysts.

MORE INFORMATION IS AVAILABLE AT:

WWW.CHEME.CMU.EDU/WHO/FACULTY/SHOLL.HTML

FOR DIRECTIONS TO THE MEETING, PLEASE SEE PAGE 3

**LETTER FROM THE CHAIR**

Greetings AIChE members!

My favorite time of the year is upon us, and as the weather cools and we watch the leaves turn to their beautiful hues, the 2002-2003 kicks into gear.

We got off to a great start with our September meeting at Zinc Corporation. I'd like to thank all those who attended the meeting. I'd also like to give a special thanks to our speakers from ZCA: Casey Young, Barry Dugan, Terry Beckwith, and Ed Beatty. For the October meeting, we're honored to have Dr. David Scholl from Carnegie Mellon University speak to us.

In October, we will have the first of what we hope will be a series of workshops designed to give our members an edge in career transitioning. The first will be devoted to fine-tuning your resume.

As a reminder, at the end of the 2002 calendar year, we will be switching to an electronic newsletter. Further information will be in upcoming issues of 'The Catalyst'. To make this transition as seamless as possible, we are in the process of updating our membership list. If you haven't already done so, please contact our Membership Chair, Holly Gray, with any changes in your contact information.

In the meantime, I hope you'll all enjoy the beautiful fall weather. I look forward to seeing you on the 23rd.

JoAnn Truchan
Pittsburgh Section AIChE 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.

If you need driving directions, please request them when you RSVP.

E-NEWSLETTER

We need your updated e-mail address!!

We will be transitioning to an e-newsletter in the upcoming months, and in order to make sure that this transition goes smoothly, we need to have current e-mail addresses for all of our members.

The e-newsletter will replace our current paper newsletter. Monthly meeting reminder cards will be mailed to members who request them.

If you do not currently receive an electronic monthly meeting reminder from AIChE, please forward your e-mail address to hgray@mbakercorp.com



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

OCT OBER MEETING NOTICE (FROM PAGE 1)

~ Directions to Lombardozi's ~

From the South:

Take Rt 19 (West Liberty Avenue) through the Liberty Tunnels and across the Liberty Bridge. Stay straight and go onto Crosstown Blvd. Merge onto 579 N. Take the Rt 380 / Bigelow Blvd exit. Stay straight to go onto Rt 380 / Bigelow Blvd. Turn left onto the Bloomfield Bridge. Take a slight right turn onto Liberty Ave. Continue on Liberty Avenue to the restaurant.

From the East:

Take the turnpike heading West (76 W). Take the 376 W / US-22 exit # 6 towards Pittsburgh. Merge onto 376 W. Take exit # 5 towards Squirrel Hill / Homestead. Keep left at the fork in the ramp. Stay straight, then turn left onto Forward Ave. Turn left onto Murray Ave. Take another left onto Wilkins Ave. Turn right onto South Negley Ave., then left onto 5th Avenue. Turn right onto South Aiken Ave. Take a slight left onto Liberty Avenue. Continue on Liberty Avenue to the restaurant.

From the North / West:

Take Rt 60 S to 79 S to 279 N. Take the exit on the left towards Ft Duquesne Blvd / Strip District. Keep left at the fork in the ramp. Take the PA-28 N exit # 7C towards Chestnut St / East Ohio St / Etna. Merge onto PA-28 N. Turn right onto 31st Street Bridge. Continue onto 31st Street. Turn left onto Liberty Ave. Continue on Liberty Avenue to the restaurant.

STUDENT SECTION

I would like to thank the University of Pittsburgh Student Chapter of AIChE and Dr. Joe McCarthy for the invitation to speak during the Undergraduate Seminar in September. Following my presentation, many good questions were posed by the students. Faculty advisors and student chapters from WVU, CMU and YSU can contact me to schedule a visit on campus.

Most importantly, mark February 19th on your calendars for the Annual Student Night at the William Pitt Union on the campus of the University of Pittsburgh. More details will follow in the January newsletter.

David Missenda
 Student Outreach Chair

**CAREER CORNER***ATTENTION JOB SEEKERS*

Participate in AIChE's next career fair - either in person (in Indianapolis, November 3 and 4) or virtually (via the career fair resume database). The event includes on-site interviews, informal networking with employers, job hunting workshops, and more. This is a FREE benefit for AIChE members.

Visit <http://www.aiche.org/careerservices> for details.

IN CASE YOU MISSED IT...

Read "Where is Your Career Headed?" a special supplement from CEP's August issue online, featuring information from AIChE Salary and Employment Survey, articles on the expanding boundaries of the chemical engineering profession and ChemE career skills. Visit online at <http://www.cepmagazine.com>, and select August 2002 under "back issues."

FOR MORE ON SAFETY

Find solutions and discussion on today's heightened security concerns at the CCPS International Conference & Workshop, "Risk, Reliability and Security," October 8-11, in Jacksonville, Florida.

The conference is being chaired by AIChE Pittsburgh Member Lisa Morrison of NOVA Chemicals. Speakers include professionals from the chemical industries in the United States, Italy, France, Canada, Netherlands, Norway, Denmark, and Sweden. Topics will range from Assessing Potential Risk at Newly Acquired Facilities to Managing Security Concerns at Chemical Plants to Hazardous Materials Transportation.

For details and registration, visit:

<http://www.aiche.org/ccps/icw>.

NEWSLETTER DEADLINE

**THE DEADLINE FOR THE NOVEMBER NEWSLETTER IS
OCTOBER 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**

**CHEMISTRY WEEK
VOLUNTEERS NEEDED!!**

It's time again for our outreach events at the Carnegie Science Center. Please consider assisting the local section by volunteering to staff our table during National Chemistry Week (NCW). This year's event will be held on Saturday, October 26. This year's NCW theme is "Chemistry Keeps Us Clean."

The mission of National Chemistry Week is to reach out to the public, especially students, with positive messages about the important role chemistry plays in our lives. The activities at the Carnegie Science Center are an ideal forum to promote science and chemistry to young people.

For the past three years, more than 230 volunteers from all across Southwestern Pennsylvania have volunteered each year to help celebrate National Chemistry Week in Pittsburgh. During these celebrations, over 14,000 eager young people and curious adults have participated enthusiastically in a variety of hands-on experiments and activities and watched amazing chemistry related demonstrations.

Through television and newsprint media, this event has also indirectly reached over 2 million people with a positive message about the importance that chemistry plays in our quality of life.

The Pittsburgh Section of the American Chemical Society has won national recognition for each of the past three years by the national ACS with regard to the NCW program. We are proud to have supported them in this effort.

This year's events will focus on several activities, such as cleaning up a simulated oil spill. Sorbent materials will be used and the chemical principles behind the experiment will be explained. Also under consideration are several experiments using common household materials, such as vinegar, as cleaning agents. As always, we will promote chemical engineering.

It is certain to be a fun-filled and rewarding day. Please consider signing up to volunteer!!!

Contact Nancy Hirko at 412-826-3636 or via e-mail at nhirko@aircomp.com.



FALL NEWS

BRUSH UP ON YOUR POMOLOGY

We bet you didn't know that the apple is a member of the rose family-and Americans consume an average of 45.5 pounds of apples a year.

More fun facts:

- Twenty-five percent of an apple's volume is air. That is why they float.
- Apples ripen six to ten times faster at room temperature than if they were refrigerated.
- It takes the energy from 50 leaves to produce one apple, and two pounds of apples make one 9-inch pie.
- Apples are grown in all 50 states. Most apples can be grown farther north than most other fruits because they blossom late in spring, minimizing frost damage.
- 7,500 varieties of apples are grown throughout the world.
- Apples are fat, sodium, and cholesterol free. A medium apple is about 80 calories.

This fall, get to the core of apple knowledge and visit a local festival, brush up on your apple trivia, or polish off an apple pie.

Visit: <http://www.urbanext.uiuc.edu/apples/>

THINK SMALL

To handle the huge crowds at London's Carnival, one of Europe's largest festivals, transit authorities and engineers and scientists created models based on ants. Swarms of ants illuminated trouble spots where the human crowd would crush together. So, next time you're breezing through traffic, thank the little guy.

<http://www.nature.com/nsu/020819/020819-8.html>

DO-IT-YOURSELF WITH HIGH TECH

While home improvement may not be at the top of your list for fun, here's a little inspiration: high-tech power tools. See the latest in drills, hammers, and wrenches at: <http://www.popsci.com/popsci/hometech/article/0,12543,334161-2,00.html>

FREE TRIP, FREE VACATION

Spread the word about AIChE and you could win a free trip to anywhere in the United States. For more information on AIChE's Member-Get-a-Member contest visit: <http://www.aiche.org/mgm/contest>.

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



SPORTS SCIENCE

Glowing Hockey Pucks

With Hockey Season starting up again this month, some inquisitive fans might wonder "How exactly do they make the hockey puck glow?"

Indeed, on TV there's a hockey puck that glows blue, until it's slapped to over seventy miles an hour when it turns red and develops a long red tail. As it turns out, it's a real tour de force to make a hockey puck glow.

Rick Cavallaro, who headed the team charged with developing a glowing hockey puck, described the problem as this: We had "to track and highlight a frozen hockey puck traveling at times in excess of 100 mph after being walloped by angry 250-pound men with sticks."

In developing the puck, the team's first lesson was that the laboratory isn't the same as the real world. In their labs they crammed a puck full of electronics, then gave it to a real-world player. He found the puck too light. Rick and his team learned a puck even an ounce light can change the game completely.

So, they got official hockey pucks, cut them in two, carved out the middles and loaded their batteries and transmitters. Putting them back together was their next major problem.

They searched to find a glue of just the right weight and adhesiveness. They felt it pretty important the pucks not split apart and spew batteries on a slap shot. To test the various glues they hit pucks with sledgehammers, squeezed them in vises, and then shot them out of cannons at 105 miles per hour.

Then the real world intervened again. They didn't realize that the pucks are stored on ice for several hours before being put into play. The problem is that batteries lose their charge at low temperatures. Since in a hockey game up to thirty pucks might be used, they couldn't just turn them all on because when frozen the batteries wouldn't last long.

They put in a sensor so that when the referee drops it the shock turns the puck on. It goes off if it isn't hit for 45 seconds - which, of course, never happens in a game - but if the puck goes into the stands it turns off, and the new puck put into play by the referee will take over.

During the game the puck's electronics sends back its position every few seconds to twelve computers housed in

a forty-foot semi. They process all the data then draw the puck on the TV screen.

This new glowing puck upset hard-core hockey fans, who claimed they could already follow it. But since it helped attract new viewers, I have bad news for devoted sports fans. The team that brought us the glowing hockey puck is adapting their technology to other sports. They want, for example, NASCAR coverage to feature cars that glow.

Source: <http://www.engineerguy.com>

Pondering the Golfball

Consider a golf ball. Its center is a liquid encased in a mass of rubber thread - this is what gives the ball its bounce. Now picture yourself as an engineer who's been asked to make this golf ball. How would you quickly wrap a ball of liquid with rubber thread? The solution: You freeze the liquid center - making it solid - and quickly wrap it in rubber thread.

Source: <http://www.engineerguy.com>



SPONSORSHIPS

Interested in placing your company's information in future AIChE Newsletters?

Full Page	\$300
Half Page	\$175
Quarter Page	\$95
Business Card Size	\$45
1/12 Page	\$30

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Please contact Mariangela Peters at mariangela.peters@am.sony.com or 724-696-8234 for more information.



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2002-2003 Tentative Monthly Meeting Schedule

Date	Topic	Location
November 13, 2002	PPG Plant Tour	Springdale
January 15, 2003	Maglev (Joint Meeting with AWMA)	Penn Brewery
February 19, 2003	Student Night	University of Pittsburgh
March	Technical Presentation	TBA
April	Plant Tour	TBA
May	McAfee Awards	TBA

Mark your calendars!

For AIChE's October & November Events:

Oct 12, 2002	Saturday Seminar	Resume-Writing Workshop
Oct 23, 2002	Monthly Meeting	Technical Presentation: "Computational Chemistry" Dr. David Sholl, Carnegie Mellon University
Nov 13, 2002	Monthly Meeting	Plant Tour at PPG in Springdale

Visit us on-line at www.aichepgh.org



Catalyst

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