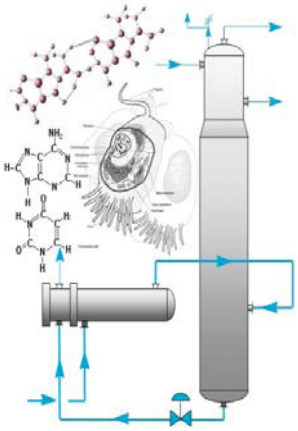
AIChE Chicago Section

# March Newsletter





## *AIChE 2011 Boat Cruise*

Please join us on **Saturday, March 26th** for this special event. It will be in lieu of the usual technical meeting. LIMITED SPACE AVAILABLE! SIGN-UP ONLY UNTIL MARCH 12TH!

Enjoy a lunchtime cruise aboard the **Mystic Blue**, setting sail from Navy Pier. The boat features several indoor decks with a DJ to supply a fun, casual atmosphere for dancing. The outdoor decks and plentiful windows provide the finest views of Chicago.

After the cruise the city is yours – cab to the Magnificent Mile for window shopping, visit one of the world famous museums down Lakeshore Drive, or enjoy the other plentiful entertainment that Navy Pier offers.

***When:*** ***Saturday, March 26, 2011*** *11:30 AM—2:00 pm*

Be sure to leave enough time to park and walk to the ship berth at Navy Pier.
11:30 AM begin boarding
12:00 PM cruise begins
2:00 PM Mystic Blue returns to Navy Pier

***Where:*** ***Mystic Blue Berth At Navy Pier***
*600 E Grand Ave + 113, Chicago, IL 60611*

***Attire:*** *Business Casual*

***Fees:*** *$38 for members and nonmembers.*

*Register before March 12th.*

View Event Summary

***Inside this issue:***

# *Chair's Corner*

This month there will be two very special events available for our section members to attend.

The spring national meeting of the AIChE will be held March 13-17 at the Hyatt Regency hotel in downtown Chicago. I have written about this event previously in the January chair corner so I will not go into the details of the event. Suffice it to say that this is a rare opportunity to network with fellow chemical engineers from throughout the country without buying a plane ticket. It is also an excellent event to broaden your knowledge on the topics that are most of interest to the chemical engineering profession today. I urge you to find out more information on the AIChE.org website.

The other special event is that we are having the Chicago section social get together on Saturday, March 26th. This event will be a boat cruise along the Chicago River. The cruise will feature a luncheon buffet and dancing along with a DJ that will be spinning the tunes. The cruise will be leaving Navy Pier at 11:30 AM and last about two and half hours. This is your chance to prove to your significant other that the AIChE Chicago section really does exist and that those meetings that you've been saying that you are attending, are real. You need to register for this event by March 12th so be on the lookout for your e-mail invitation.

Steve Rosenblum—UOP

## AIChE Spring Meeting Chicago

**March 13-17, 2011**
**Hyatt Regency Chicago, Chicago, IL**

The AIChE Spring Meeting is the year's key technical conference for practicing chemical engineers. A wide range of subjects relevant to the current needs of industry is covered. Plus, the Global Congress on Process Safety covers the critical needs of process safety practitioners more broadly and deeply than any other conference.

• ***Spring Meeting Keynote Address (Monday, March 14, 11:00am-12:00pm)***

"The Energy Challenge: Providing Sustainable Supplies to Meet Growing Demand," Dr. F. Emil Jacobs, Vice President Research and Development, ExxonMobil Research and Engineering Company.

- **The 7th Global Congress on Process Safety**
- **23rd Ethylene Producers' Conference**
- **11th Natural Gas Utilization Conference**
- **14th Topical Conference on Refinery Processing**
- **Young Professional programming on management, process controls, separations and environmental topics**

# *Du Page Engineering Week (E-Week) Expo 2011*

The 27th Annual DuPage Area Engineers Week was held at Illinois Institute of Technology's Daniel F. and Ada L. Rice Campus in Wheaton.

DuPage E-week is a celebration of the fun that math, science and engineering that is open to the public. The theme for the 2011 event was "Engineering: The Gateway to Tomorrow's Technology." The goal of the annual event is to ensure a dedicated, diverse and well educated future engineering workforce by promoting pre-college literacy in math and science.

AIChE-Chicago's Young Professionals group hosted a table that included a "Future Engineer Photo Shoot" where students of all ages dressed up in Personal Protective Equipment (PPE) and learned why engineers wear it every day. YPs also spoke to students about what Chemical Engineers do, companies that hire them, and the type of classes that will prepare them for a Chemical Engineering degree.

Expo's target age group is middle school, though people of all ages participated in the hands-on activities and demonstrations directed toward introducing students of all ages and their parents to the current state of technology and advances being made throughout industry.

To see more photos of the event, visit the YP-Chicago website at

www.aiche-chicago.org/ypab

By: Jessica Swary

# *Evening with Industry @ IIT*

Dear Industry Representative,

The Illinois Institute of Technology (IIT) student chapter of the American Institute of Chemical Engineers (AIChE) is pleased to invite you to the 10th Annual Evening with Industry (EWI) Dinner, hosted **Friday, April 1st** from **6:00 to 9:00 p.m.** on the IIT main campus.

This student-organized event aims to provide more student and professional interaction than a typical career fair. Similar to previous EWI dinners, we expect to host approximately 20 - 30 students ranging from freshman to the graduate level. The event begins with a standard career fair, allowing for students and company representatives to interact on a professional level. The highlight of the evening is a banquet style dinner followed by an engaging and knowledgeable guest speaker from industry. Each company attending can host a dinner table which seats up to eight students and one to two host representatives. In addition to expanding upon the potential career, co -op, and internship opportunities available, the format provides a unique opportunity for representatives to communicate their first-hand experiences within their company and chemical engineering industry. Previous student attendees comment that these informal discussions were the highlight of the EWI and provided significant help in making career decisions.

Participants officially sponsored by their company will receive space at the career fair and dinner for two representatives per hosted table. There is no registration fee for participating in this event. However, we would greatly appreciate, if you, or your company chooses to make a donation to the AIChE IIT Chapter to help financing this event. If you would like to participate, please reply to this email by Friday, March 18th, 2011, or feel free to contact me directly with any comments, questions, or suggestions. Your input into our event will help us to continually improve EWI.

We look forward to your participation at this year's EWI dinner, and thank you for your support in making this event a success.

Sincerely,

Jonathan Taketa
Evening with Industry Chair
Telephone: (808) 386-8703
E-mail: jtaketa@iit.edu

# *The Future is Promising!*

A number of recent studies have implied that today's youth, who will be tomorrow's leaders, educators, parents, and innovators are deficient in math, reading, and reasoning. These very skills are not only necessary for driving communities forward, but necessary for a nation to efficiently adapt to a changing world. The Future City Competition is an indication of the various initiatives being implemented across the country to expose young minds to

the tools and skills necessary for building a promising tomorrow.

Stepping into the Student Center at the University of Illinois at Chicago, on an early Saturday morning, I did not know what exactly to expect from the competition. Once I met up with my fellow judges (Ray Ballard, Chithra Asokan, Kurt Antonini), we reviewed the requirements for our AICHE-sponsored Energy Award – The future city that meets its energy demand from safe environmentally responsible, reliable, and economical sources—and discussed the types of questions we would ask each group. To our amazement, this diverse group of 7th and 8th grade students eagerly and verbosely described their energy-efficient cities to every set of attending judges. Using Sim City software, students designed unique cities that were powered by hydro, wind, solar, geothermal, batteries, clean coal, biomass, algae, nuclear, lightening, ground friction, and even energy sources of which we had never heard. Many of the groups logically justified the elimination and/or inclusion of certain energy sources, based on the effectiveness of the power system(s) and structure of their cities. All in all, by the end of the morning, these jubilant teens had us asking ourselves, “Did I know all of this at their age?”

Imagine the majority of these children were able to confidently display their municipal creations because someone took the time to share some information with them and encourage them to think and explore. I look forward to participating in the Future City Competition in 2012. From this experience, I can confidently say that the future is promising.

By: Mayisha Iman Ealey (UOP)

# Upcoming Meetings

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|---|
| Offshore Technology Conference (OTC) 2011<br>Reliant Park<br>Houston, TX |
| AIChE-DECHEMA Global Conference on Energy Sustainability in the Process Industries (ESPI)<br>Hong Kong University of Science and Technology (HKUST)<br>Hong Kong SAR, China<br>**June 5-8, 2011** |
| 56th Annual Safety in Ammonia Plants and Related Facilities Symposium<br>Sheraton Montreal Hotel<br>Montreal, QC<br>**September 11-15, 2011** |
| Annual Meeting<br>Minneapolis Convention Center<br>Minneapolis, MN<br>**October 16-21, 2011** |

# *What AIChE Means to Me? Dennis O'Brien*

I joined AIChE as a University of Tulsa student in 1968. The student chapter was small, but almost all of the Chem E students were members. Dr. Manning encouraged all of us to join. At that time, there were a fair number of heat exchange equipment manufacturers. Student chapter meetings included trips to heat exchange manufacturers like Yuba, tray vendors like Nutter, and burner manufacturers like John Zink. *So AIChE means to me new ideas and deeper understanding.*

After graduation in 1971, I moved to Chicago to work at UOP. Meeting attendance was a little less regular since some meetings were difficult to get to and I had a young family to attend to. UOP encouraged engineers to be active in the Chicago Section. For a short time in 1974 I worked in Houston and attended South Texas Section meetings. There, I met my first well known chemical engineer (at least to me), Dr. John McKetta- he was a well-known professor at the University of Texas and he frequently spoke at the South Texas Section meetings.

I maintained my membership while I traveled overseas with UOP in 1974-75. Upon returning to the UOP home office, I began to attend meetings more regularly. The meetings were still all over the Chicago area, but traveling a long distance for a meeting had become the norm after going to meetings in Houston. My memory is that the meetings were large. John Swearingen used to attend meeting in downtown Chicago. Some of the old timers would remember him as the president of Amoco.

FOCAPD (Foundations for Computer Aided Design) in Snowmass, Colorado in 1983 was probably the most memorable AIChE event for me in the 80s. The talks on simulation and design were very interesting and the discussions were often heated. Drs. Evans and Boston were there from MIT (Aspen). Dr. Sargent, Imperial College London, Dr. Hughes from Wisconsin, Dr. Westerberg from where?. Some of the Post-Doc speakers would rather forget that meeting. The evening discussions over wine and cheese were very engaging. *So AIChE means to me cutting edge ideas, sharp discussion, and great knowledge.*

In 1993 I attended FOCAPO (Foundations for Computer Aided Operations) in Snowmass, Colorado. This meeting was very useful in meeting many different industrial engineers who were applying computers to scheduling and batch operations. These were activities that I was involved in at UOP to try to improve efficiency. *So AIChE means to me valuable industry and academic contacts and innovative approaches to industrial problems.*

But the AIChE highlight of the '90s for me was the Chicago Spring Meeting in 1996. Dr. Perl and Annette Johnston persuaded me to become involved in the planning and support.

My role was a minor one working on employment opportunities. This meeting was a turning point in my level of activity with the Chicago Section. Many of the people that I worked with at UOP were active in the section and I joined them. *So AIChE means to me service to the community- the engineering community, the student community and the Chicago area community.*

After that meeting I was much more active in the Chicago section as a volunteer. I worked with Gloria Fountain and Suzette Wick when they were section chairs. These are just two of the skilled, effective and efficient women engineers that I have worked with in the Chicago section. Ms. Shannon Brown, Ms. Annette Johnston and Dr. Azita Ahmadzadeh are current some of others with long and very effective section activity.

Initially I worked with a number of people to put together the annual symposium. Several people worked to get me to stand for section officer and I eventually agreed. Secretary, Treasurer, vice chair and chair were local offices that I held. I was sure that I couldn't do justice to them, but with support you grow into those roles. *So AIChE means to me growth and development of the individual through active volunteering.*

About this time Dr. Towler suggested that I become active at the national level in the Fuels and Petrochemicals Area. I attended the Spring Meetings and the Fuels and Petrochemicals programming meetings. There Dr. Lori McDowell (Brock) trained several of the new additions in the art of getting papers as a session chair and getting session chairs as a vice chair of programming. I was nominated to run as a Director of F&PD. As a director I undertook the task to get some of the Spring Meeting programming repeated at the Chicago symposium, expecting that this would spread if it was successful. I think it was my idea, but it did align well with some plans of Dr. Towler. I also worked as program vice chair and chair for the Refinery topical conference. Because of the great supporting network, this was not an overwhelming job. *So AIChE means to me giving back to the community by continuing the work of so many dedicated, skilled, effective volunteers that have given me time and mentoring.*

This AIChE involvement continues with activities in programming, in social outreach (Societal Interaction Operating Council, EWB) and in community outreach (speaking at schools, working with university students).

In a few days the Spring Meeting will be here in Chicago. Many of the fine people that I have worked with over the years will be there. It will be a very busy and I will be renewing many friendships and forging new ones.

The people I have met and worked with both at the local section and at the many meetings I have been lucky enough to attend over the years have enriched my technical and personal life. *This is one of the activities that you need to give in order to receive back the benefits.*

Dennis O'Brien

# *February Meetings*

# *Historical Engineering Events in March*

***March 1, 1864***- Rebecca Lee Crumpler became the first African American woman to receive a medical degree and the only to receive a degree at the New England Female Medical College, which closed in 1873.

***March 3, 1831***–Thomas Jennings became the first African-American to receive a patent for his invention of 'dry-scouring', a process better known today as dry-cleaning. As a free man, he established a local business in New York in which he sold clothing.

***March 5, 1991*** – The 5 millionth patent is issued for a process turning garbage into fuel by Lonnie O. Ingram, a professor of microbiology at the University of Florida; Tyrell Conway, a former post-doctoral student at the university, and Flavio Alterthum, a visiting professor who is now chairman of the microbiology department at the University of Sao Paulo in Brazil.

***March 7, 1979*** - Voyager 1 transmits first images of a ring system around Jupiter. Voyager 1 was launched on September 5, 1977 and it passed Saturn in November 1980. A second spacecraft, the Voyager 2, was launched earlier on August 20, 1977.

***March 8, 1775*** – Priestley discovers oxygen through experiments with mice. Oxygen was independently discovered in the 1770's; the most famous names associated with this discovery are Joseph Priestley, Carl Wilhelm Scheele and Antoine Lavoisier.

***March 8th*** is International Women's Day – "a global day celebrating the economic, political and social achievements of women past, present and future". On March 8th and the weekend before, thousands of events are held throughout the world to celebrate women's achievements and highlight global issues concerning women and girls.

***March 9, 1964*** – First Ford Mustang rolls off assembly line. Ford sold 22,000 of the sporty car on the first day of sales in April 1965. The Mustang was one of the most successful product launches in automotive history with over one million units sold in its first 18 months.

***March 13,1970*** – PDP-11 minicomputer introduced by DEC (Digital Equipment Corporation) and remained in active production until 1996. It was one of the most popular 16-bit minicomputers ever produced.

***March 14, 1987*** – First Pi Day is celebrated. 3/14 (3.14) was chosen by physicist Larry Shaw of the Exploratorium Museum in San Francisco to be celebrated as Pi Day. For more information, browse the Engineering Pathway's educational resources on Pi Day and other irrational numbers.

***March 14, 1927*** – First female engineer in ASCE. Elsie Eaves was the first woman in the US to be elected as a full member to the American Society of Civil Engineers (ASCE).

***March 16, 1926*** – Dr. Robert Hutchings Goddard launched the world's first successful liquid-fuel rocket. Goddard's rocket was a very small contraption connected to tanks with gasoline and liquid oxygen, and sitting atop a frame 10 feet tall. It screeched into the air for a few seconds, reaching an altitude of about 40 feet and crashing down about 200 feet from its launch site.

***March 19, 1932*** – the Sydney Harbour Bridge, Australia, was opened. It is the world's largest steel-arch Bridge. For more information, see the Engineering Pathway's resources on bridge design and construction.

***March 22, 1985*** – The Vienna Convention for the Protection of the Ozone Layer is adopted in response to studies documenting the harm caused to the environment and our own health by ozone-depleting substances. Ozone is a colorless gas, closely related to the oxygen in the air we breathe.

***March 24, 1959*** – the maser was patented by Charles Hard Townes (No. 2,879,439), who was a professor at Columbia University. "Maser" is an acronym for "Microwave Amplification by the Stimulated Emission of Radiation ".

***March 25, 1954*** – Production of RCA's first color television sets. RCA based their color television on the 1947 patent application of Alfred Schroeder, for a shadow mask CRT. Their system passed FCC approval in late 1953 and sales of RCA color televisions began on March 25, 1954.

***March 27, 1933*** – Polyethylene is discovered. Polythene is also known as polyethene or polyethylene. It was discovered in 1933 by Reginald Gibson and Eric Fawcett, two scientists working at ICI's research laboratory at Winnington, Northwich, who accidentally discovered the white, waxy solid while attempting to react ethylene with benzaldehyde in an autoclave.

***March 30, 1842*** – Dr. Crawford Long first uses ether as anesthesia to provide his patients with painless surgery. Diethyl ether (C2H5-O-C2H5), also known as ethyl ether or simply ether, is a clear, highly flammable liquid with a sweet, pungent odor.

***March 31, 1889*** – Eiffel Tower opens. The 300m Eiffel Tower was commissioned to commemorate the French Revolution. Amazingly, all of the elements were prepared in Gustav Eiffel's factory located at Levallois-Perret on the outskirts of Paris. There were 18,000 pieces used to construct the Tower.

# *Career-development workshops in Spring Meeting*

On ***Sunday, March 13***, two new workshops, "Network for Life" and "Consultants' Risk Management," will join the program for AIChE's Spring Meeting in Chicago. Jack Hipple of Innovation-TRIZ, past chairman of AIChE's Management Division, is teaming with Jessica Swary-Gurnee of PQ Corp., who leads AIChE's Chicago Young Professionals group, to describe ways you can nurture relationships to benefit your professional life. Learn more.

Henry Cifuentes of the Hays Companies and R. Kissel, an attorney with Kissel, Hirsch & Wilmer, will help consultants recognize and minimize liability, to protect personal and professional assets. Anyone who is full, part-time or considering consulting projects should attend. Everyone attending this risk management session will receive a one time credit of 10% applied toward the custom ChemE AIChE Professional Liability Plan at underwriting (up to a $200 maximum credit per policy). Read more.

Link to Networking Workshop
http://www.aiche.org/conferences/springmeeting/2011shortcourses/s9.aspx
Link to Consultant risk management Workshop
http://www.aiche.org/conferences/springmeeting/2011shortcourses/s10.aspx

Thank you,
By: Camille Belcuore (AIChE/Career Services)

# 2011 AIChE Spring Meeting & 7th Global Congress on Process Safety


## Young Professionals Programming

YP Co-Sponsored Sessions, March 14-15:
- YP Tutorial: Separations
- Process Control and Optimization and Tutorial
- Management with Startup Ventures
- YP Tutorial: Environmental Topics on Regulation and Innovation

Short Course, March 13:
- Network for Life

YP Social / Speed Networking
March 15
Free Drinks and Appetizers
($10 Registration Fee)

## For registration, visit the AIChE Website

http://www.aiche.org/Conferences/SpringMeeting/index.aspx

**Register with a colleague for a 50% discount! See the "Bring a Young Colleague" initiative for information!**

***FOR MORE INFO ON YP PROGRAMMING VISIT AICHE-CHICAGO.ORG/YPAB AND EMAIL US!***

# Local Speakers in AIChE Spring Meeting

**K-12 Outreach: My Experience In High School Classrooms with the NSF GK-12 Program**
Monday, March 14, 2011: 8:50 AM
**Jennifer Younker**, Chemical and Biomolecular Engineering, Universisty of Illinois at Urbana-Champaign, Urbana, IL

**Prediction of Hydrogen Solubility In Heavy Hydrocarbons Over a Range of Temperatures and Pressures Using Molecular Dynamics Simulations**
Monday, March 14, 2011: 8:00 AM
**Huajun Yuan**[1], Chris Gosling[2], Peter Kokayeff[3] and Sohail Murad[1], (1)Chemical Engineering, University of Illinois at Chicago, Chicago, IL, (2) Refining Process Development, UOP LLC, Des Plaines, IL, (3)Refining Process Development, UOP LLC, Riverside, IL

**Simulated Moving Beds-Principles and Design Tools**
Monday, March 14, 2011: 8:00 AM
**Nien-Hwa Linda Wang**, Purdue University, West Lafayette, IN

**Novel Configurations Using Fewer Columns for Multicomponent Distillation**
Monday, March 14, 2011: 8:35 AM
**Anirudh A. Shenvi**, Vishesh H. Shah and Rakesh Agrawal, School of Chemical Engineering, Purdue University, West Lafayette, IN

**Biorenewable Diesel and Jet Fuel Production**
Monday, March 14, 2011: 2:00 PM
**Geoffrey Fichtl**, Renewable Energy and Chemicals, UOP - Honeywell, Des Plaines, IL

**Integrated Hydropyrolysis and Hydroconversion Process ($IH^2$) for Production of Gasoline and Diesel Fuel From Wood, Algae, Cornstover, Lemna, and Bagasse Feedstocks**
Monday, March 14, 2011: 2:30 PM
**Terry Marker**, Larry Felix, Martin Linck and Michael Roberts, Gas Technology Institute, Des Plaines, IL

**Mercury Removal From Gaseous and Liquid Hydrocarbons**
Monday, March 14, 2011: 4:00 PM
**Neil Eckersley**, Catalysts, Adsorbents & Specialities [CA&S], UOP LLC, Des Plaines, IL

**A Sustainable and Economical Scheme for Natural Gas and LNG Purification Through Multi-Phase Transformations**
Monday, March 14, 2011: 4:30 PM
**G. Ali Mansoori**, University of Illinois at Chicago, Chicago, IL

**Naphtha Normal Paraffin Separation Using a Dividing Wall Column and Simulated Moving Adsorption Bed**
Monday, March 14, 2011: 3:30 PM
**S. Thomas King**[1], Kurt J. Cenek[1], Lawrence W. Miller[1], Joe R. Haas[2] and Cynthia K. Zimmerman[1], (1)Olefins, Detergents, and Alkylation Technology Center, Engineering Department, UOP / Honeywell, Des Plaines, IL, (2)Optimization Services, Engineering Department, UOP / Honeywell, Des Plaines, IL

**Adapting the Naphtha Complex to a Changing Environment**
Monday, March 14, 2011: 4:00 PM
**Jeff M. Bray** and Steven L. Kleinman, Optimization Services, UOP LLC, Des Plaines, IL

**Bringing Value to Waste Through Gas Fermentation**
Monday, March 14, 2011: 3:30 PM
**Michael A. Schultz**, LanzaTech Limited, Roselle, IL

**Fundamentals of Alarm Management**
Monday, March 14, 2011: 1:30 PM
**Peter G. Herena**, Kenexis Consulting Corporation, Elgin, IL

**Who's Controlling Your Industrial Control System? and What Makes You So Sure? An Information Security Primer for Systems Professionals**
Monday, March 14, 2011: 2:00 PM
**Todd Haverkos**, Iconium Security, Elgin, IL

**A Look Into Advanced Controls for Automotive Engines**
Monday, March 14, 2011: 2:30 PM
**Aaron Matthews**, University of Wisconsin-Madison, Chicago, IL

**Microfluidic Platforms to Screen for Crystallization Conditions of Active Pharmaceutical Ingredients**
Monday, March 14, 2011: 4:00 PM
**Sachit Goyal**[1], Michael R. Thorson[2], Yuchuan Gong[3], Geoff G.Z. Zhang[3], Charles F. Zukoski[4] and Paul J. A. Kenis[5], (1)Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, (2)Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana Champaign, Urbana, IL, (3)Solid State Sciences, Abbott Laboratories, North Chicago, IL, (4)Department of Chemical and Biomolecular Engineering, University of Illinois at Urbana Champaign, Urbana, IL, (5)Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL

**$CO_2$ Capture From Binary Gas Mixtures Using Elastic Layered MOF Adsorbents**
Monday, March 14, 2011: 4:00 PM
**Christian M. Lastoskie**, Civil & Environmental Engineering, University of Michigan, Ann Arbor, MI and Tran D. Trinh, Civil and Environmental Engineering, University of Michigan, Ann Arbor, MI

**BTX Fractionation: Conventional, Pressure Cascade or Dividing Wall?**
Monday, March 14, 2011: 4:25 PM
Dennis O'Brien, Jacobs Consultancy, Group Manager, Jacobs Consultancy, Chicago, IL and **Laura Weaver**, Jacobs Consultancy, Chicago, IL

**Advances In Cumene/Phenol Technology – Improving Phenol Plant Profitability**
Monday, March 14, 2011: 2:35 PM
**Robert J. Schmidt**, R&D Aromatics & Derivatives Development Center, Sr. Development Associate, UOP LLC - A Honeywell Company, Des Plaines, IL

**Power System Design for a Hybrid Fuel Cell Vehicle: A Globally Optimal Approach**
Monday, March 14, 2011: 3:30 PM
**Syed Kaschif Ahmed** and Donald J. Chmielewski, Chemical and Biological Engineering, Illinois Institute of Technology, Chicago, IL

**Testing of Electrode Durability for Extended Operation within An Alkaline Fuel Cell**
Monday, March 14, 2011: 3:50 PM
**Matthew S. Naughton**, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL and Paul J. A. Kenis, Department of Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL

**Energy and Greenhouse Gas Emissions of Pyrolysis Pathways**
Tuesday, March 15, 2011: 8:00 AM
**Jeongwoo Han**, Amgad Elgowainy, Ignasi Palou Rivera, Michael Wang and Jennifer M. Dunn, Energy Systems Division, Argonne National Laboratory, Argonne, IL

**A Novel Pathway for Glucose Production From Biomass**
Tuesday, March 15, 2011: 8:30 AM
**Karyn Biasca**, Paper Science and Engineering, University of Wisconsin - Stevens Point, Stevens Point, WI

**Compact Heat Exchange Reactor In FT Applications**
Tuesday, March 15, 2011: 9:00 AM
**Zhijun Jia**, Chart Energy & Chemicals, La Crosse, WI, Dennis E. Sparks, Center for Applied Energy Research, University of Kentucky, Lexington, KY and Burtron H. Davis, Center for applied energy research, University of Kentucky,

**Mercury Emission Reduction: Performance and Economic Analysis**
Tuesday, March 15, 2011: 8:30 AM
**Bruce A. Keiser**, Air Protection Technology, Nalco Company, Naperville, IL, John V. Meier, Nalco Mobotec, Nalco Company, Naperville, IL and Brian Higgins, Nalco Mobotec, Walnut Creek, CA

**Compact Heat Exchange Reactor for In Process Improvement**
Tuesday, March 15, 2011: 9:00 AM
Zhijun Jia[1], **Steven J. Vallee**[1], Burtron H. Davis[2] and Dennis Sparks[2], (1)Chart Energy & Chemicals, La Crosse, WI, (2)Center for applied energy research, University of Kentucky, Lexington, KY

**Reduction of $CO_2$ Emissions In a Refinery**
Tuesday, March 15, 2011: 9:00 AM
**Jason Stalhman**, UOP, Des Plaines, IL

**Reducing $CO_2$ Emissions In FCC Process**
Tuesday, March 15, 2011: 10:15 AM
**X. X. Frank Zhu**, UOP LLC, Des Plaines, IL and **Saadet Ulas Acikgoz**, R&D Adsorption and Gas Processing, UOP LLC, Des Plaines, IL

**Effects of Heavy Metals From Flue Gas on Algal Growth and Lipid Production and Their Distribution In the System**
Tuesday, March 15, 2011: 8:50 AM
**Katerine Napan**[1], Reece Butler[2], Byard Wood[2], Ronald Sims[1] and Sridhar Viamajala[3], (1)Biological Engineering, Utah State University, Logan, UT, (2)Mechanical and Aerospace Engineering, Utah State University, Logan, UT, (3)Chemical & environmental engineering, University of Toledo, Toledo, OH

**Utilization of Municipal Wastewater for Cooling System In Thermoelectric Power Production**
Tuesday, March 15, 2011: 9:10 AM
**Iman Safari**[1], Michael E. Walker[1], Javad Abbasian[1], Hamid Arastoopour[1], Ming-Kai Hsieh[2], David A. Dzombak[2] and David C. Miller[3], (1)Chemical and Biological Engineering, Illinois Institute of Technology, Chicago, IL, (2)Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA, (3)U.S. Department of Energy, National Energy Technology Laboratory, Morgantown, WV

**Nano-Structured Sorbents for Desulfurization of Biomass-Derived Syngas**
Tuesday, March 15, 2011: 8:30 AM
**Mayank Behl**[1], Junghoon Yeom[2] and Mark A. Shannon[2], (1)Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, (2)Mechanical Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, IL

**Standing Wave Design of Simulated Moving Beds for the Recovery of Sugars From Biomass Hydrolysate**
Tuesday, March 15, 2011: 9:00 AM
**Nien-Hwa Linda Wang**, School of Chemical Engineering, Purdue University, West Lafayette, IN

**Sustainable Polymeric Materials Prepared by Ultrafast Photo-Polymerization of Chemically Modified Vegetable Oils**
Tuesday, March 15, 2011: 10:15 AM
**Na Yeon Kang**, Chemical & Biochemical Engineering, University of Iowa, Iowa City, IA, Brian Dillman, Department of Chemical & Biochemical Engineering, The University of Iowa, Iowa City, IA and Julie L. Jessop, University of Iowa, Iowa City, IA

**Solar Absorption Cooling with Alkanes as Phase Change Energy Storage Medium**
Tuesday, March 15, 2011: 11:15 AM
**L. Agyarko**, BioEngineering, University of Illinois at Chicago, Chicago, IL and G. Ali Mansoori, University of Illinois at Chicago, Chicago, IL

**Quick Hit Financial Benefits From Pre-Engineered APC Packages**
Tuesday, March 15, 2011: 2:00 PM
**Pete Sharpe**, Emerson Process Management, Glen Allen, VA, **Thomas Novotny**, CITGO Lemont Refinery, Lemont, IL and **Gary Hawkins**, Emerson Process Management LLLP, Hinsdale, IL

**Development of a Detailed Reaction Kinetic Model for Cellulose Fast Pyrolysis**
Tuesday, March 15, 2011: 4:30 PM
**Vinu Ravikrishnan** and Linda J. Broadbelt, Chemical and Biological Engineering, Northwestern University, Evanston, IL

**Advances In Heavy Oil Upgrading**
Tuesday, March 15, 2011: 1:30 PM
**Grant Yokomizo**, UOP/Honeywell, Des Plaines, IL

**Role of University Startup Companies In Technology Commercialization (keynote talk)**
Tuesday, March 15, 2011: 1:30 PM
**Robert F. Anderson**, Corporate Relations, Illinois Institute of Technology, Chicago, IL

**Beyond University Research – Development Steps to Commercialization**
Tuesday, March 15, 2011: 2:00 PM
**Bipin V. Vora**, Research & Development, UOP LLC, A Honeywell Company, Des Plaines, IL

**Resources for Inventors, Industry, and Start-Ups**
Tuesday, March 15, 2011: 2:30 PM
**Justin Anderson**, Wisconsin Alumni Research Foundation - WARF, Madison, WI

**Coupled Electrostatic and Pneumatic Microvalves for Portable Chemical Microsystems**
Tuesday, March 15, 2011: 3:30 PM
**Joshua D. Tice**[1], Amit V. Desai[1], Thomas A. Bassett[1], Christopher A. Apblett[2] and Paul J. A. Kenis[1], (1)Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, (2)Sandia National Laboratories, Albuquerque, NM

**Normally Closed Valves: Design Considerations, Scope and Applications**
Tuesday, March 15, 2011: 4:00 PM
**Ritika Mohan**[1], Paul J. A. Kenis[2], Amit V. Desai[3] and Benjamin R. Schudel[2], (1)University of Illinois, Urbana Champaign, Urbana, IL, (2)Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, (3)Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL

**Agency - Friend or Foe?**
Tuesday, March 15, 2011: 1:30 PM
**Anju Bhatia**, Bureau of Air; Field Operation Section, Illinois Environmental Protection Agency, Des Plaines, IL

**Energy Efficiency**
**Richard Reese**, Illinois EPA, Springfield, IL

**Evaluation of $CO_2$ Capture and Sequestration Using Oxyfuels with AMIGA Economic Modeling**
Tuesday, March 15, 2011: 4:20 PM
**Richard D. Doctor**[1], Donald Hanson[2] and John C. Molburg[2], (1)Energy System Division, Argonne National Laboratory, Argonne, IL, (2)Decsion and Information Sciences, Argonne National Laboratory, Argonne, IL

**Resin Wafer Electrodeionization for Flue Gas Carbon Dioxide Capture**
Tuesday, March 15, 2011: 4:40 PM
**Rebecca L. Stiles**[1], Jitendra Shah[1], Jianwei Yuan[1], Lisa Wesoloski[1], Robert W. Dorner[1], Wayne M. Carlson[1], Yupo J. Lin[2], Saurav Datta[2], Michael P. Henry[2], Cynthia S. Millard[2] and Seth W. Snyder[2], (1)Air Protection Technologies, Nalco Company, Naperville, IL, (2)Energy Systems Division, Argonne National Laboratory, Argonne, IL

**Hydrodynamic Study of KATAPAK-SP11 Structured Packing with Multiphase CFD and Heat Integration**
Tuesday, March 15, 2011: 4:15 PM
**Jing Huang**, Robert W. Lyczkowski, Chandrakant B. Panchal and Richard D. Doctor, Energy System Division, Argonne National Laboratory, Argonne, IL

**Production of Dimethyl Carbonate Via Reactive Distillation Process**
Tuesday, March 15, 2011: 2:10 PM
**Emmanuel A. Dada**[1], C.B. Panchal[2] and Richard D. Doctor[2], (1)ChemProcess Technologies (CPT), LLC, League City, TX, (2)Energy System Division, Argonne National Laboratory, Argonne, IL

**Advanced Reactive Distillation Concepts for the Indirect Hydration of Cyclohexene to Cyclohexanol**
Tuesday, March 15, 2011: 3:30 PM
**Aspi K. Kolah**[1], Lars Peereboom[1], Carl T. Lira[1], Jing Huang[2], C.B. Panchal[2], Robert W. Lyczkowski[2], Emmanuel A. Dada[3], Richard D. Doctor[2] and Dennis J. Miller[1], (1)Chemical Engineering and Materials Science, Michigan State University, East Lansing, MI, (2)Energy System Division, Argonne National Laboratory, Argonne, IL, (3)ChemProcess Technologies (CPT), LLC, League City, TX

**Influence of Yttrium Doping Into Hafnium Dioxide on Film Structure and Dielectric Properties**
Wednesday, March 16, 2011: 8:50 AM
**Qian Tao**, Chemical Engineering, University of Illinois at Chicago, Chicago, IL, Christos Takoudis, Departments of Chemical Engineering and Bioengineering, University of Illinois at Chicago, Chicago, IL and Gregory Jursich, Bioengineering and Mechanical&Industry Engineering, University of Illinois at Chicago, Chicago, IL

**The Dry Gasification Oxy-Combustion (DGOC) Power Production Cycle**
Wednesday, March 16, 2011: 8:00 AM
**Michael E. Walker**[1], Javad Abbasian[1], Donald J. Chmielewski[1] and Marco J. Castaldi[2], (1)Chemical and Biological Engineering, Illinois Institute of Technology, Chicago, IL, (2)Department of Earth and Environmental Engineering (HKSM), Columbia University, New York, NY

**Analysis of Freshwater Usage In Advanced Gasification Based Power Systems**
Wednesday, March 16, 2011: 9:00 AM
**Michael E. Walker** and Javad Abbasian, Chemical and Biological Engineering, Illinois Institute of Technology, Chicago, IL

**Water Consumption, Characterization, and Conservation In the Refining Industry**
Wednesday, March 16, 2011: 8:25 AM
**Jason L. Stahlman**, UOP, Des Plaines, IL

**Challenges and Opportunities of Electrocoagulation for Refinery Application: Case Study with Chicken Processing Plant Water and Fleet Wash Water**
Wednesday, March 16, 2011: 9:40 AM
**Eric Peterson**[1], Jewel Andrew Gomes[2], David L. Cocke[2], Hector Moreno[3], Morgan Reed[4], Joe W. Hutchins[5], Daniel Atambo[6] and Kamol Kanti Das[7], (1)Scandpower Inc., a member of the Lloyd's Register Group, Houston, TX, (2)Dan F. Smith Department of Chemical Engineering, Lamar University, Beaumont, TX, (3)Chemical Engineering, Instituto Tecnologico de la Laguna, Torreon, Mexico, (4)Drilling Fluids, Baker Hughes, Broussard, LA, (5)Process Improvement and Optimization, Lake Charles, LA, (6)Dallas/Fort Worth Regional Office, Texas Commission on Environmental Quality, Fort Worth, TX, (7)Agronomy, Purdue University, West Lafayette, IN

**Life Cycle Analysis of Biogas-to-Hydrogen Pathways**
Wednesday, March 16, 2011: 8:00 AM
**Jeongwoo Han**, Marianne Mintz and Michael Wang, Energy Systems Division, Argonne National Laboratory, Argonne, I

**A Model of $CO_2$-Fed Algal Biofuel Potential In the US**
Wednesday, March 16, 2011: 8:40 AM
**Edward Frank**, Energy Systems, Process Technology Research Section, Argonne National Lab, Argonne, IL

**Life Cycle Assessment Tools for Algal Biofuels**
Wednesday, March 16, 2011: 10:40 AM

**Edward Frank**[1], Amgad Elgowainy[2], Ignasi Palou-Rivera[3], Michael Wang[4] and Jeongwoo Han[3],
**Preconditioning Effects Upon Co-Containing Pt-Promoted and Unpromoted Fischer-Tropsch Catalysts**
Wednesday, March 16, 2011: 9:40 AM
**Donald Cronauer**, Jeffrey W. Elam, A. Jeremy Kropf and Joseph A. Libera, Argonne National Laboratory, Argonne, IL

**Distillation Column Flooding Predictor™ - Increase Throughput, Improve Energy Efficiency, and Avoid Flooding**
Wednesday, March 16, 2011: 9:40 AM
**George Dzyacky** and Steven Carlson, 2ndpoint, LLC, Schererville, IN

**Aspen Plus as a Tool for Process Scale-up of Externally Heat-Integrated Reactive Distillation**
Wednesday, March 16, 2011: 2:30 PM
**John C. Prindle**[1], Chandrakant B. Panchal[2] and Richard D. Doctor[2], (1)Chemical & Biomolecular Engineering, Tulane University, New Orleans, LA, (2)Energy System Division, Argonne National Laboratory, Argonne, IL

**Heat-Integrated Reactive Distillation**
Wednesday, March 16, 2011: 4:25 PM
**Chandrakant B. Panchal**[1], John C. Prindle[2], Jing Huang[1], Robert W. Lyczkowski[1], Richard D. Doctor[1], Emmanuel A. Dada[3], Philip Lutze[4], Rafiqul Gani[5] and John M. Woodley[6],

**Anaerobic Treatment of High-Strength Effluents In the Food and Beverage, and Agricultural Industry**
Wednesday, March 16, 2011: 2:00 PM
**Carlos D. Claros**, Chicago Environment and Industry Group, MWH Global, Inc., Chicago, IL

**Scoping Study of Methanol Production From $CO_2$ with Nuclear Electrolysis $H_2$**
Wednesday, March 16, 2011: 2:25 PM
**Richard D. Doctor**, Energy System Division, Argonne National Laboratory, Argonne, IL

**Pilot Plant Retooling for a More Reliable Process Scale-up**
Wednesday, March 16, 2011: 2:55 PM
**Pankaj S. Gautam**, Process Technology, SABIC Innovative Plastics, Mt. Vernon, IN

**Chemical Components That Influence Evaporator Distillate Quality**
Wednesday, March 16, 2011: 4:35 PM
**Shawn D. Thornton**, R & D, HPD, LLC, Plainfield, IL

**More Refinery H2 through Efficiency, Recovery, and Process Improvements**
Wednesday, March 16, 2011: 2:00 PM
**Alan Zagoria**, Optimization Services, UOP, Des Plaines, IL, Ron Long, UOP, Des Plaines, IL and Kathy Picioccio, UOP

**Development of Membranes for Hydrogen Production From Coal**
Wednesday, March 16, 2011: 2:40 PM
**T. H. Lee**, Y Lu, C. Y. Park, S. E. Dorris and U (Balu) Balachandran, Energy Systems Division, Argonne National Laboratory, Argonne, IL

**Coal Gas Assisted Hydrogen Production Using Mixed-Conducting Oxygen Transport Membranes**
Wednesday, March 16, 2011: 3:00 PM
**C. Y. Park**, Tae H. Lee, Stephen E. Dorris, Yunxiang Lu and U.(Balu) Balachandran, Energy Systems Division, Argonne National Laboratory, Argonne, IL

**(7C) Selective Bromination of Methane Over Solid Acid Catalysts and Poly (4-vinyl pyridine) Catalyzed Hydrolysis and Methanolysis of Methyl Bromide**
Monday, March 14, 2011: 9:00 AM

Surya Prakash[1], **Patrice Batamack**[1], Juan Colmenares[2], Thomas Mathew[1] and George Olah[1], Dr. George Olah **Nobel in Chemistry Priestly metal**

## Officers and Contact Information

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