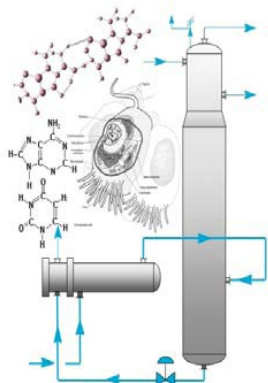


# November Newsletter



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## AIChE Chicago November 2012 Meeting Notice

**Steve Donnellan**

**Coskata, [www.coskata.com](http://www.coskata.com)**

**Manager of Process and Project Engineering**



**Date:** **Wednesday, November 14, 2012**

**Location:** **Szala's**

5214 S Archer Ave, Chicago  
[\(773\) 582-0300](tel:(773)582-0300)

**Cost:** **Members: \$30** **Non-Members: \$35**

**Students: \$5** **Unemployed Members: \$20**

*To Register Click the Link;*

<http://www.cvent.com/d/tcq3cn/1Q>

### Agenda

|  |                |
|--|----------------|
| Meeting registration                         | 5:30 pm        |
| Social hour and Flowserve presentation table | 5:45—6:45 pm   |
| Dinner                                       | 6:45 - 7:30 pm |
| Section business                             | 7:30 - 7:45 pm |
| Speaker                                      | 7:45 - 8:45 pm |
| Meeting close                                | 8:45 pm        |

## Chair's Corner

### The Improving Outlook for Chemical Engineers

Lately when we leave the house for work the cool or cold morning air reminds us that winter is coming soon. You can feel it in the wind. Similarly, there are things going on in industry today that indicate a change is coming. You can almost feel the change in the air. What I'm talking about is the coming oil boom in the US. Sure to those of us who aren't in the oil industry, the oil developments in North Dakota seem to be a small boom. However, new records are being set almost every day, and it's obvious that growth is increasing. For example, in August (the latest month for which data available), oil production in the Bakken and Three Forks formations in North Dakota averaged 701,134 barrels/day – a new record. Similarly, gas production there in August averaged was 761,826 MCF/day – another record. Also, North Dakota isn't the only place where hydrocarbon growth is occurring. Under Ohio are the Marcellus Shale and Utica Shale deposits which are part of the world's largest deposits of natural gas, and parts of Ohio are also experiencing a hydrocarbon driven economic boom.

As chemical engineers our jobs are frequently related in some way to hydrocarbon production. My job in a refinery is directly related to what's going on in North Dakota because it directly affects the price and quality of the crudes we process in the refinery. North Dakota is following about the same path that Canada followed to exploit their hydrocarbon reserves. Today the activity is mostly involved with getting the oil out of the ground, but eventually there will be crude upgraders and refineries built near these abundant deposits resulting in many new jobs for chemical engineers. Also because hydrocarbons are frequently the

building blocks for molecules we chemical engineers want to build with our processes, chemical plants and more chemical engineering positions will eventually be created. Furthermore, the energy from these deposits will be available at lower prices to fuel our future chemical engineering processes.



So it's time for us to realize that the future looks pretty good for chemical engineers. We've been through a tough period, but the winds of real change are blowing in North Dakota and in other parts of the US making the future definitely brighter for chemical engineers. You can feel it in the air.

Speaking of positive changes, one of our own - Annette Johnson - was elected Director of AIChE, and she will serve on the Board of Directors from January 1, 2013 till December 31, 2015. Congratulations Annette!

Reza Mostofi—was elected as the co-chair of PTF and he will serve from January 1, 2013 till December 31, 2015 and will become the chair of the PTF for two more years.

Mayank Kashyap won the best PhD thesis in Particle Technology area. He got his PhD degree from IIT under Professor Gidaspow's supervision.

Jerry Wilks—CITGO

Chair Elect

## November Meeting Information

### Speaker's Bio

Steve has a Bachelor's of Chemical Engineering from the University of Delaware and is pursuing an MBA at Northwestern's Kellogg School of Management. Since joining Coskata in the fall of 2008, he has had responsibility for some portion of commercial plant project and design in addition to training and operations duties at the company's demonstration plant in Western Pennsylvania. He is currently managing the process design group for Coskata's first commercial project in addition to interfacing with R&D and Business Development to evaluate the impacts various technology and project opportunities.

Prior to Coskata, Steve was employed with Cabot Microelectronics in Aurora, IL, for 6 years and UOP for 11 years. At Cabot, he worked as an Operations Black Belt, leading efforts in both Process Improvement and Design for Six Sigma, and in Supplier Technical Management. While at UOP, he has supported multiple technologies in the role of Sales Tech Service Engineer, Process Design Engineer, and Technical Field Advisor.

In total, Steve has accumulated more than 20 years of experience in process engineering, process improvement, product development, supplier management, and sales support in the petroleum, petrochemical, gas separation, specialty chemical, and alternative fuels industries.

Steve's "hobbies" include parenting – his daughter just started her freshman year of col-

lege - and running.

### Abstract

Coskata is a technology leader in the production of alternative fuels and chemicals. Our proprietary process has been demonstrated at significant scale and offers high yields, low costs, and feedstock flexibility. Potential feedstocks include natural gas, other industrial gases, wood, trash, and other organic / biomass type feedstocks. The heart of the process is a proprietary microbe which can convert syngas into fuels and chemicals; at this time we are focusing in ethanol. I will present the company background, provide a technology overview, and discuss some of the key drivers and advantages associated with our process and company.



## Des Plaines Library Family Science Expo

YP represented AIChE at the Des Plaines Library Family Science Expo, and introduced chemical engineering to many students and parents. YP's also advised students on career paths in chemical engineering. Much thanks to all volunteers that attended the event!" Photo: Jon Haughton explaining process engineering to students at the Des Plaines Library outreach event.



## November Pre\_Meeting Information

### Abstract:

Flowserve is one of the world's leading providers of pumps and services for the global infrastructure and process industries. Tracing its history to 1790 and the earliest application of steam pumping engines, Flowserve has grown into a driving force in the global pump marketplace. No other pump company has the depth or breadth of expertise in successful application of pre-engineered, engineered and special purpose pumps and systems. Our presenter will be talking about the different types of pumps, things to consider when selecting the correct pump, and basic design philosophy. Our presenter will also be staying after the presentation to answer any questions about applications you are currently working on

### Speaker Bio

Tom Wood has been with Flowserve (starting with Byron Jackson, one of the heritage companies) for thirty nine years. Tom has held various sales positions in the Mid West. He has extensive experience in pump applications and systems in virtually all industries that use centrifugal pumps, ranging from Water and Waste Water and General Industry, to Oil and Gas and Power Generation (conventional, nuclear, and alternative fuels) working with users, distributors, contractors, and consulting engineering firms.

## Careers

Whether you're a student looking for an internship, a young professional looking for your first job or a seasoned engineer looking to breathe new life into your career, AIChE offers a variety of options to help guide you.

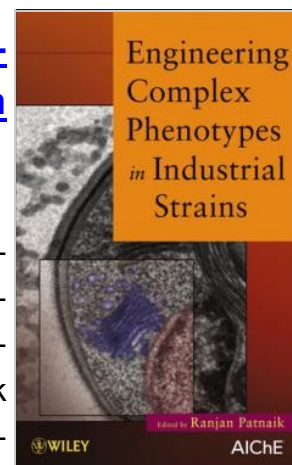
Learn about institute networking opportunities, attend a career fair, get profession advice, or simply check out the AIChE job board.

## NEW BOOKS

### Engineering Complex Phenotypes in Industrial Strains

November, 2012

This book highlights current trends and developments in the area of engineering strains. The book details the current and future tools used in the production of bulk chemicals and biofuels from renewable biomass using green technologies. Complex phenotypes are traits in a microbe that requires multiple genetic changes to be modulated simultaneously in the microorganism's DNA. Knowing what those genetic changes are for a given trait and how to make those changes in the most efficient way forms the motivation behind writing this book. This book explains the newer tools to develop and enable engineered strains at time scales much faster than the natural evolution process so that we can increase a cells' production of a certain substance, increase process productivity, and extend metabolic capability.



## Congratulations

### **ANNETTE JOHNSTON** ELECTED TO AIChE BOARD

Annette Johnston has been elected to the AIChE National Board for a three year term, beginning January 1, 2013. Annette is a Past Chair of the Chicago Section, and has been a volunteer in many capacities, since 1996. She has been assigned to be on the Constitution and Bylaws Committee, as well as being the Board Liaison to Chemical Engineering-Technology Operating Council. In these roles, she will be the Board Liaison for activities related to the programming and structure of the Institute. Annette is completing her term as the Chair of the Research and New Technology Committee.

AIChE has 22 Programming Entities at the National Level. Programming entities vary from Management to Nuclear to Particle Technology to Separations. All of them contribute programming to the two National meetings, and all of them contribute to the Webinars available on the [aiche.org](http://aiche.org) website. Members of National AIChE receive 6 free webinars annually. In addition to these programming groups, new entities, called Industry Technology Groups. These groups are the face of AIChE to the world - members and nonmembers. The ITGs represent what chemical engineers do in the world - Energy (CEI), Water Use and Treatment (ISWS), Sustainability (IfS), Safety (CCPS), Modeling and Property Data (ComSEF and DIPPR) and others. Annette will be working with CTOC and EPBS

(Executive Board of the Programming Committee) to find the Synergies needed to produce Programming from the 22 entities that related to our face to the world.



AIChE is coming into another golden age for Chemical Engineers. Enrollments in undergraduate programs are at record levels; plans to build billion dollar plants near the Marcellus Shale, and the Williston Field are already underway. The emergence of LNG as an exportable fuel, and all of the energy, sustainability and water use issues related to expansion of the fuels industry, will make for many jobs for all of these future engineers. There will be so many opportunities to make lasting contributions to the practice of Chemical Engineering. At the 2012 Annual meeting, many senior members are saying they have not seen such opportunity for growth since the 1950's and 1960's.

AIChE must remain the Premier Practice Home for Chemical Engineers in this golden age. Annette plans to consider how any initiative or plan impacts the prestige of the Institute, and the prestige of the practice of Chemical Engineers. Tell her your thoughts the next time you see her at a local section meeting.

## Congratulations

**Reza Mostofi**,  
elected as co-chair of  
AIChE PTF

Reza Mostofi has been elected to the AIChE PTF (Particle Technology Forum) for a two year term, beginning January 1, 2013. Reza is a Past Chair of the Chicago Section, and has been a volunteer in many capacities. He was the program chair of 2011 Midwest Regional Conference.

PTF is part of the AIChE that handles ~40 sessions related to particle technology at the national meetings in fall and also handles various awards in this field.

The 5 programming areas are:

- 3a: Particle Production and Characterization
- 3b: Fluidization and Fluid-Particle Systems
- 3c: Solids Flow, Handling, and Processing
- 3d: Nanoparticles
- 3e: Energetic Materials

And the awards are:

- George Klinzing Best PhD in Particle Technology Award
- Particle Technology Forum Award
- Thomas Baron Award (Currently Sponsored by Shell Global Solutions)
- Fluidization Processing Recognition Award (Current Sponsor Dow Chemical)
- PSRI Lectureship Award in Fluidization
- PTF Best Poster Award



## Congratulations

Congratulation to **Dr. Mayank Kashyap** who received the 2012 best PhD thesis award in the area of particle technology. Mayank studied at Illinois Institute of Technology under the supervision of Prof. Dimitri Gidaspow (IIT Distinguished Professor, Emeritus, AIChE Fellow) and has worked on dispersion and mass transfer in fluidized beds. He co-authored a recently published book with his advisor titled "Dispersion and Mass Transfer Coefficients in Fluidized Beds: Experimental and Computational Fluid Dynamics Studies", based on his thesis.

**Pictures show Mayank with Prof. Gidaspow, Dr. Ray Cocco (Particle technology forum chair) of Particulate Solids Research Inc. (PSRI, Chicago) and his wife, Dr. Tersita Kashyap (also IIT graduate).**



## October Meeting Review

The AIChE Chicago October meeting was a success with an outstanding 80 attendees, including almost 20 students!" Prior to the meeting, professionals Pat Shannon, Nate Schurr, and Jennifer Guilfoyle gave their advice on careers and job seeking to students. Discussion was also opened up to the audience with several professionals adding their own advice and experience. Business author and consultant Alexandra Levit spoke to members about Blind Spots in business, based on her book *Blind Spots: 10 Business Myths You Can't Afford to Believe on Your New Path to Success*. Alexandra described myths including employers want you to be yourself, controversy propels your career, and it's best to climb the ladder as fast as possible. Alexandra debunked these

myths with real life examples and explained instead the new business truths.

**If you enjoyed the meeting and would like to continue the discussion or give us feedback, please post on our facebook page or LinkedIn group!**



## 5th Annual AIChE Midwest Regional Conference

### *Preliminary Program Announcement*

**Keynote Speaker:** Thursday, January 31, 2013: 8:30am-9:30am

*Professor Peter C. Stair,*

Director of Center for Catalysis and Surface Science, Northwestern University

**Dinner Keynote:** Thursday, January 31, 2013: 7:00pm-8:00pm

*Dr. Catherine O'Connor,* Lecture Title: Chicago: A River Runs Through It

Director of Engineering, Metropolitan Water Reclamation District of Greater Chicago

**Keynote Speaker:** Friday, February 1, 2013: 8:30am-9:30am

*Dr. Jack Lewnard*

Chief Technology Officer, Gas Technology Institute

**HS Outreach Keynote:** January 31 and February 1, 2013: 10:00am-11:00am

*Professor Al Sacco*

Dean, Edward E. Whitacre Jr. College of Engineering, Texas Tech University

Payload Specialist on the Space Shuttle Columbia

#### **Technical Sessions** (Submitted to date)

- Catalytic Transformations for Biomass to Chemicals or Fuels
- Advances in Refining
- Advances in Petrochemical
- Process Engineering Best Practices
- Nanotechnology
- Process Intensification
- Air & Water Pollutions Controls for Fossil Power Plants
- Research at Archer Daniels Midland Company
- Emerging Technologies in the Oil and Gas Industry
- Applications of chemical engineering principles in food safety
- Advances in Biological Engineering
- Agent-based systems in chemical engineering applications
- Fluidization and Fluid- Particle systems
- Coal Gasification & Clean Coal Technology
- Biological Water and Wastewater Treatment
- Smart Grid and the Process Industry
- Teaching the Chemical Engineering Capstone Senior Process Design Course
- Biochemical Innovation and Commercialization
- Engineering Extracellular Matrices
- Fuel Cell Technologies

(The final program and timing of each session scheduled for release on December 15, 2012)

For additional information including **registration** please see:

<http://www.aiche.org/conferences/midwest-regional-conference/2013>



## RICHARD HOEHN WINS THE 2012 ERNEST W. THIELE AWARD

Congratulations to **Richard (Dick) Hoehn**, Senior Engineering Fellow at UOP for being awarded the 2012 Ernest W. Thiele award!

This prestigious award will be presented to Dick Hoehn at a 2012-2013 meeting of the Chicago AIChE section at a date and place to be announced.

Dick Hoehn is awarded the 2012 Ernest Thiele Award for his leadership and creativity in hydroprocessing technology. His contributions have resulted in improving the yields, efficiency, safety and reliability of this critical process for clean fuels. He is also presented this award for his years of mentoring and training that have resulted in better-trained design engineers and ultimately better processes for hydroprocessing.

The Ernest W. Thiele award is presented annually to a Midwest region member of AIChE who has made outstanding contributions to advance the practice of Chemical Engineering. The award is sponsored by BP, and consists of a plaque and a \$1000 honorarium.

Please join us in congratulating Dick Hoehn on his achievement.

### What is New?

- [Chevron expects Calif. refinery to reach full capacity in 2013](#)

Chevron's refinery in Richmond, Calif., is expected to return to full production during the first quarter of 2013, the company said. A fire broke out at the plant's crude unit early in Au-

gust, and the incident continues to be investigated. "This is the most definitive statement we've made about a startup of the unit," spokesman Kurt Glaubitz said. [The Oakland Tribune \(Calif.\)](#) (11/2)

- [Refining helps oil majors' Q3 earnings](#)

Profits from refining operations boosted third-quarter earnings reports from Exxon Mobil, Royal Dutch Shell, BP and Philips 66, with BP saying that its quarterly refining and marketing profit set a record. [The New York Times \(tiered subscription model\)](#) (11/1), [Bloomberg Businessweek](#) (10/31), [Nasdaq.com/Dow Jones Newswires](#)(11/2)

- [Researchers find quick way to convert algae into biocrude](#)

Researchers at the University of Michigan have found a way to turn marine algae into biocrude by "pressure cooking" it in intense heat for as little as one minute. "My guess is that the reactions that produce biocrude are actually much faster than previously thought," said Phil Savage, a professor of chemical engineering. The researchers emphasized the need for further study of the process. [DomesticFuel.com](#) (11/2)

- [StemCells, R Biomedical unite to develop iPS cell lines and reagents](#)

R Biomedical and StemCells agreed to jointly develop cell lines and reagents for use in human induced pluripotent stem cell studies aimed at regenerative medicine. The partners said they have commercialized their first product together, an "ultra-primary" human fibroblast cell line designed for iPS cell generation. [Genetic Engineering & Biotechnology News](#) (11/1)



The American Institute of Chemical Engineers  
and the Illinois Institute of Technology  
present:

## **Becoming an Engineer —Creating a World That Works!**

### **SAVE THE DATE!**

Choose one of the following dates:

Thursday, January 31<sup>st</sup> OR Friday, February 1<sup>st</sup>, 2013

**Only 200 student slots per day and they go fast  
so reserve one today!**

#### **Program to include:**

- **Chemical Engineering in Space**
- **Electric Car and Robotics Demonstrations**
- **Smart Grid and Medical Imaging Center tours**
- **Lunch with Engineering Professionals**

#### **To reserve a slot, please contact:**

Jessica Jaskolka  
HS Program Coordinator  
Email: [jjaskolk@iit.edu](mailto:jjaskolk@iit.edu)  
Phone: 224.383.5924

Professor Donald Chmielewski  
Conference Chair  
Email: [chmielewski@iit.edu](mailto:chmielewski@iit.edu)  
Phone: 312.567.3537



### Officers and Contact Information

|                   |   |
|-------------------|---|
| Chair             | Peter Herena<br><a href="mailto:pgherena@yahoo.com">pgherena@yahoo.com</a>                      |
| Chair Elect       | Jerry Wilks<br><a href="mailto:gwilks@citgo.com">gwilks@citgo.com</a>                           |
| Chair Programming | Mike Buettner<br><a href="mailto:Mike.Buettner@alfalaval.com">Mike.Buettner@alfalaval.com</a>   |
| Secretary         | Steve Wozniak<br><a href="mailto:Steven.Wozniak@honeywell.com">Steven.Wozniak@honeywell.com</a> |
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| Newsletter Editor | Azita Ahmadzadeh<br><a href="mailto:azita.ad@gmail.com">azita.ad@gmail.com</a>                  |
|                   | Janet Chu<br><a href="mailto:Janet.lily.chu@gmail.com">Janet.lily.chu@gmail.com</a>             |

### Directors at Large

|  |  |
|--|--|
| Annette Johnston<br><a href="mailto:Annette.Johnston@abbott.com">Annette.Johnston@abbott.com</a> | Jeff Umbach<br><a href="mailto:jumbach@ambitech.com">jumbach@ambitech.com</a>      |
|  | Jenn Guilfoyle<br><a href="mailto:guilfojm@middough.com">guilfojm@middough.com</a> |

## AICHE CHICAGO SECTION

### American Institute of Chemical Engineers

Chicago Section  
13964 Doral Lane  
Homer Glen, IL 60491  
[aichechicago@gmail.com](mailto:aichechicago@gmail.com)

We are on the web  
[www.aiche-chicago.org](http://www.aiche-chicago.org)

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## We need your help!

How many opportunities can you find to learn project management, delegation and leadership skills for free? Becoming an officer in the Chicago Section of AIChE is such an opportunity. While you're learning new skills, your local network grows. Just about all of us are either undergoing a career change, contemplating a career change, or are wondering if our career will be changed for us. Volunteering with AIChE is a way to add skills and accomplishments to your resume.

[aichechicago@gmail.com](mailto:aichechicago@gmail.com)

[http://www.aiche-chicago.org/Section\\_Info/Volunteer.html](http://www.aiche-chicago.org/Section_Info/Volunteer.html)

## Submitting Articles to AIChE Columns

We welcome email submissions for our monthly newsletter. Commercial announcements are subject to the fee schedule below. News stories, editorials, technical or career related non-commercial contributions are always welcome with no charge. We consider job postings, announcements of for-fee training courses, expositions, conferences as commercial. Categorization of announcements is at the sole discretion of the Chicago AIChE Board of Directors. Chicago AIChE may publicize activities of interest to our members by cooperating professional societies and other non-profits without charge.

Please submit your material to [aichechicago@gmail.com](mailto:aichechicago@gmail.com) with "newsletter article" as a subject line.

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