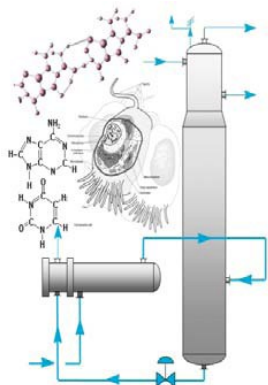


December Newsletter

Chicago Section

www.aiche-chicago.org

December 2012



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Happy Holidays

From the AIChE Chicago Section!



Renew your AIChE Membership
by 12/31/2012!

<http://www.aiche.org/community/membership/renew>

Chair's Corner

The Improving Outlook for Chemical Engineers

In the last newsletter I wrote that things are looking up for chemical engineers due to the explosion of oil operations in North Dakota, Texas and Ohio. Of course there are some chemical engineers looking for jobs today, but how are chemical engineers really doing today? One way to get a feeling for how chemical engineers are doing today is to look at salary data. Salary.com recently published salary statistics that provides us with some insight as to how the young chemical engineers are doing. For example, in 2012 the typical starting salaries for recently graduated chemical engineers ranged from \$55,241 to \$82,989 with the mean starting salary at \$68,668.

To the older chemical engineers these starting salaries don't look too bad, so how are the older folks doing? Knovel.com published an article titled "Engineering Salaries in 2012" that says the average salary for all chemical engineers was at \$105,200 in Texas and in California it was \$106,670 with the national average at \$94,590. Those averages for all chemical engineers were based on statistics from 2010 so these numbers would be higher for 2012. As

we have heard in past surveys, chemical engineers tend to be the highest paid of all engineers regardless of when these data are collected. Occasionally, there is a year when some other engineering discipline ends up having higher average salaries due to rapid growth in some job market, but in general we chemical engineers end up on top in terms of engineer salary.



The AIChE salary survey for 2012 hasn't been published yet, but the 2011 results were that the overall average chemical engineering salary was \$110,000 – growth above even the Texas and California averages in 2010. So we aren't doing too badly today, and there are things going on in the country that make the future look even brighter for chemical engineers. Happy holidays to everyone.

Jerry Wilks—CITGO

Chair Elect

November Meeting Review

The AIChE November 2012 meeting was held at Szola's in Chicago, near Midway. Attendees enjoyed Polish pierogis, stuffed cabbage, and potato pancakes. Flowserve representative Tom Wood gave a pre-meeting workshop on centrifugal pumps and pump capabilities offered by Flowserve. Speaker Steve Donnellan from Coskata informed attendees about Coskata's fermentation technologies for alternative fuels and chemicals. The topic generated lots of interest from the audience, and Mr. Donnellan fielded numerous questions from attendees throughout the presentation. Special thanks to Flowserve for sponsoring this meeting! Sponsorship of meetings offsets student attendance costs to the chapter. This support allows AIChE to continue low-cost admission to students, and to strengthen our support of student activities during the year.



AIChE National's Live Webinars in December

Safety in the LNG Value Chain

AIChE Webinar

Wednesday, Dec 12, 2012 - 3:00pm-4:00pm

Presenter(s): Georges Melhem, Henry Ozog

In this webinar, presenters describe and examine potential LNG (liquefied natural gas) hazards and risk-reduction methods for the LNG value chain — production and consumption. Included are examples for liquefaction, transportation (pipelines, marine tankers and trucks), storage and re-gasification, both on-shore and offshore. As LNG becomes a more viable option for meeting energy needs around the world, the associated risks must be evaluated and mitigated. In the U.S. for example, development of new technology for recovery of natural gas has changed the economics so drastically that we have gone from building LNG import terminals to exporting LNG in less than a decade. The abundance of LNG has even made its use as a vehicle fuel one of the fastest growing applications.

Upcoming Meetings

[Virtual Local Section Meeting: Changing How We Promote the Chemical Engineering Profession](#)

Webex

December 20, 2012

[4th ICBE—International Conference on Biomolecular Engineering](#)

Hyatt Regency Pier 66

Ft Lauderdale, FL

January 13—16, 2013

Joint ACS and AIChE Meeting

European Crystal Banquet and Conference Center

Arlington Heights, IL

January 17, 2013

[5th Annual Midwest Regional Conference](#)

Illinois Institute of Technology

Chicago, IL

January 31—Feb 1, 2013

[SBE's 3rd International Conference on Accelerating Biopharmaceutical Development](#)

Coronado Island Marriott

Coronado Island, CA

February 24-27, 2013

Upcoming Virtual Local Section Meeting

Changing How We Promote the Chemical Engineering Profession

Keynote Speaker:

John L. Anderson, president Illinois Institute of Technology

Thursday, Dec 20, 2012. 9-10 PM EST

<http://virtual.iche.org/event/changing-how-we-promote-chemical-engineering-profession>



Meeting Summary:

Innovation is driven by people who are smart, creative and assertive. One strategy for innovation in the chemical enterprise is to attract people like this to chemical engineering. Opportunities for careers in technical fields are much different for today's students than decades ago when many of us chose to major in chemical engineering. Our field has attracted very talented young persons who have gone on to outstanding careers in technology, business and education. The vitality of our profession strongly depends on our ability to increase the number of such students who will enter our profession and enhance its leadership position.

In 2008 only 4.5% of baccalaureate degrees were awarded to engineers (in Asia and Europe the fractions were 20 and 12%, respectively), and only 0.3% to chemical engineers. The situation has not changed much since then. The salaries of starting engineers are very good, and chemical engineers are near the top of the scale. So why is engineering generally, and chemical engineering specifically, doing so poorly in attracting high school graduates, especially women and undergraduate minorities? How does our profession win the battle for the imagination of young people? This presentation is aimed at stimulating ideas for promoting chemical engineering among the youth of our country. I believe interest in engineering will rise in future years because of the positive public relations associated with STEM education. It is essential that chemical engineering maintain its market share among engineering students; hence, we must keep the focus on the "E" first, and then brand the distinctiveness of the C in terms of interest, societal needs and career opportunities. And our educational institutions must do their part in developing curricula that focus both on the "fundamentals" (and redefining them as technologies emerge) and "creativity" with more emphasis on innovative thinking.

Speaker Bio:

John Anderson has served as the president of Illinois Institute of Technology (IIT) since 2007. He is a member of the National Academy of Engineering and fellow of the American Academy of Arts and Sciences and the American Association for the Advancement of Science (Chair of the Engineering Section 2012). He has received the Professional Progress Award of the American Institute of Chemical Engineers, a John Simon Guggenheim Fellowship, and the 2012 National Engineering Award of the American Association of Engineering Societies. His technical interests are in membrane science and separations, coatings and colloidal suspensions, and polymers. He has served on the faculties of Cornell University, Carnegie Mellon University, Case Western Reserve University, and IIT. His previous leadership experience includes department chair (1983–94) and dean of engineering (1996–2004) at Carnegie Mellon, and provost (2004–07) at Case Western Reserve University. He has chaired several boards and study committees for the National Research Council and has held visiting professorships at Massachusetts Institute of Technology, University of Melbourne (Australia), and Landbouwniversiteit Wageningen (The Netherlands). He received a bachelor's degree from the University of Delaware and a Ph.D. from the University of Illinois at Urbana-Champaign, both in chemical engineering.

Young Professionals News

On December 8, the Young Professionals Committee held a holiday party and webinar. Twelve young professionals and guests enjoyed food and drink and exchanged gifts in a “white elephant” exchange. Attendees viewed the webinar “Molecular Gastronomy: The Science of Flavor”



Congratulations

Jerry Wilks

Jerry Wilks has been awarded a 2012 Citgo Presidential Award! Citgo Presidential Awards recognize employee excellence and achievements in innovation, leadership, community service, teamwork and influence. Jerry will be travelling to Houston to be presented this award by the Citgo President and CEO. Congratulations, Jerry!



How to Avoid Job Interview Brain Freeze

Have you ever experienced brain freeze during a job interview? You are asked a question and your mind goes blank? It's horrifying. You lose composure as well as confidence. Your interview goes down hill from there. Brain freeze most often happens as a result of behavioral or situational interview questions that are not anticipated before hand. As a career coach, this is the most common interview problem I hear about from my clients. With the right preparation you can avoid the nightmare of brain freeze and improve your interview performance greatly.

First of all, it's important to understand what a behavioral or situational interview question is. It is any question that start with:

Tell me a time when ?

Give an example of ?

Describe a situation when ?

Employers ask these types of questions with the assumption that past behavior indicates future performance. These questions reveal a lot about a candidate, including a candidates ability to think fast on their feet. Given that interviews are inherently stressful, many job seekers find it extremely difficult to think fast during interviews. Here are four steps that will help you prepare for any interview question.

1. Take inventory of your accomplishments.

This requires more than a cursory mental note of the good stuff you've done in the past year.

Take a systematic approach by asking yourself what challenges you've faced in each of your positions over the past five or more years. Try asking yourself

What processes have I improved?

How have I made work easier for others?

What did I do to save my company money?

When did I find a solution to a departmental problem?

How did I save time?

When did I go beyond the call of duty to solve a customer problem?

Write out your answers to these questions. Remember to include the quantitative details when appropriate. Include dollars saved, hours cut, percentage increased etc.

2. Study the job description.

With your list of accomplishments in hand you are ready to turn your attention to the job description. Study the requirements to determine the all possible challenges involved with the job. If the actual job description is skimpy in details, look to other similar positions listed to help fill in the blanks. Additionally, ask others who hold similar positions what their greatest challenges of the job are. Write out your list of anticipated challenges.

3. Create a list behavioral questions.

Turn your list of challenges of the position into a list of questions that start with:

Tell me a time when you ?

Describe a situation when ?

Have you ever had to ?

Your list will look something like:

Tell me a time when you had to cut costs out of your annual budget.

Describe a situation when you had to fire a friend.

How would you go about repairing a relationship with a disgruntled client?

4. Use your list of accomplishments to answer your behavioral questions.
Ask a friend to help you role play your interview answers. You should feel very comfortable communicating your success stories. The more time you practice actually talking about your accomplishments the faster you'll be able to recall your stories in your next interview.

With interview performance more important than ever before it pays to prepare, prepare, prepare. There is no such thing as over preparation when it comes to interviews. Use this 1,2,3,4 approach to interview prep and you'll be surprised at how much more confident you'll feel in your next interview. The better you interview the faster you'll be at your new job.

~~~~~  
Deborah Walker, Certified Career Management Coach

Read more career tips and see sample resumes at:

[www.AlphaAdvantage.com](http://www.AlphaAdvantage.com)

email: [Deb@Alphaadvantage.com](mailto:Deb@Alphaadvantage.com)

[360-260-4965](tel:360-260-4965)

Twitter: <http://twitter.com/DebWalkerCCMC>

## ***Holiday Fun Poll***

What is your favorite engineering holiday activity?

- A. Studying physical deformation of ice crystals upon human impact (aka snowball fights)
- B. Performing stress analysis on fruitcake
- C. Testing ornament load bearing on tree branches
- D. First hand experimentation on the effects of ethanol in eggnog

Let us know your choice or suggest your own! Take the poll on our facebook group!

[www.facebook.com/AIChEChicagoSection](http://www.facebook.com/AIChEChicagoSection)



## Job Opportunity

BSI Engineering is a full service engineering firm in search of a **PROJECT ENGINEER / PROJECT MANAGER** for our Chicago office.

### **BSI Engineering Background**

BSI Engineering provides engineering & design services to clients in the steel, chemical, pharmaceutical and renewable fuels (Corn to Ethanol, Cellulose to Ethanol, Biodiesel) industries. We have compiled an experienced staff of engineering professionals who can perform Feasibility Studies, Process & Utilities systems' evaluations, Conceptual, Preliminary & Detailed designs for project ranging from \$10K to very large projects (\$100 million total installed cost) for more than 100 different industrial clients in the U.S. and Canada.. Our corporate headquarters is in Cincinnati, Ohio with a satellite office in Chicago.

Each employee has been hired based on a demonstrated ability to provide exceptional service to our customers. Company profit sharing programs, ownership model and management systems have all been designed to support and reward employees who place our clients first; recognizing employee satisfaction will be the end result.

### **Project Manager/Project Engineer Job Overview:**

The project manager is an experienced project leader and is accountable for overall project implementation activities. The project manager is passionate, high energy, and results oriented with a creative and analytical mind and is experienced with advanced PM tools and processes, and has the ability to manage critical situations.

- Project management experience in coordination of all aspects of a project including client relations, developing project budgets and scopes of work, schedule development and leading a project team.
- Experience in leading and coordinating all phases of project development.
- Integrate into client environment in order to effectively lead project team while also building positive professional relationships with clients and associates.
- Define the objective, requirements, and assumptions necessary to structure a project or activity.
- Plan, schedule, and control activities to fulfill identified objectives applying technical, theoretical, and managerial skills to satisfy project requirements.
- Establish and maintain a high performing team and serve as a project advocate within the organization.
- Lead (coordinate, facilitate, and motivate) the efforts of the individual, team, client, and other resources associated with project activity. Ensure alignment on project goals and deliverables.
- Manage projects within the established scope, schedule, and budget while meeting or surpassing standards of quality.
- Lead risk management within the project team. Ensure risks have appropriate mitigation and contingency plans.
- Facilitate and lead effective meetings. Ensure appropriate agendas that enable key discussions and decisions within the team. Prepare meeting minutes and follow up on action items.

### **Requirements**

#### **Required Experience and Training:**

- Bachelor's degree or higher in an engineering discipline (**Chemical Engineering degree preferred**)
- 10-15 years of industry experience

Knowledge and application of a disciplined project management process (PMP certifications are a plus).

#### **Required Skills and Knowledge:**

- Exceptional interpersonal and leadership skills.
- Technical aptitude and displayed ability to grasp a general knowledge of multiple disciplines and technologies.
- Strong competencies in planning, project management, leadership, and organization.
- Ability to produce and present clear, concise, and professionally written communications and presentations.
- Strong analytical capabilities
- Ability to lead and facilitate multiple activities and resources.
- Demonstrated work ethic, integrity, and professional conduct.

Contact Sharon Bates  
Human Resources Manager  
BSI Engineering, Inc.  
[sbates@bsiengr.com](mailto:sbates@bsiengr.com)



# 5th Annual Midwest Regional Conference

## Jan 31st—Feb 1st, 2013

### Illinois Institute of Technology Chicago, IL

#### Featuring...

**Keynote Speakers:** Dr. Peter C. Stair, *Northwestern University*

Dr. Catherine O'Connor, *Metropolitan Water Reclamation District of Greater Chicago*

Dr. Jack Lewnard, *Gas Technology Institute*

#### Technical Sessions including:

- Advances in Gas Treating
- Fuel Cell Technologies
- Advances in Process Equipment
- Refinery Processing of the New Shale Oils and Tight Oils
- Emerging Technologies in Oil and Gas
- Renewables Research
- Advances in Biological Engineering
- Air and Water Pollution Controls for Fossil Power Plants
- Applications of Chemical Engineering in Food Safety
- Sustainable Fuel Processing
- Characterization Methods for Immunoassay Diagnostic Tests

**...Plus Young Professionals workshops and social!**



## **REGISTER BY DECEMBER 21ST FOR EARLY BIRD REGISTRATION RATE!**

**For more info and Registration, visit:**

<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?

- [U.S., State to fund battery research at Argonne](#)  
Chicago Tribune (11/30/12)
- [Oil, natural gas boom demands expertise of chemical engineers](#)  
The U.S. oil and natural gas boom presents employment opportunities for chemical engineers, said James Turner, chairman of the American Institute of Chemical Engineers' South Texas Section. "We are seeing many companies take advantage of the new situation by moving forward with major expansion projects, which require engineers of all types and experience levels," Turner said. Houston Chronicle (11/27)
- [Universities are spending more on engineering research](#)  
Funding for engineering research at the university level increased 7.7% during fiscal 2011, reaching a total of about \$10 billion, according to a new report issued by the National Science Foundation. Chemical engineering received a 12.9% boost in fiscal 2011, according to the report. EE Times (11/29)

# HIGH SCHOOL OUTREACH PROGRAM

**AIChE 5<sup>th</sup> Annual Midwest Regional Conference**  
Thursday January 31<sup>st</sup> - Friday February 1<sup>st</sup>, 2013 | Chicago, IL

*January 31–February 1, 2013*

**AIChE**

*5<sup>th</sup> Annual*

**Midwest Regional Conference**

Scientific Research      **Connecting to a Sustainable Future**      Professional Practice

Student Outreach

This **FREE** high school outreach program is presented in parallel with the American Institute of Chemical Engineers' (AIChE) 5<sup>th</sup> Annual Midwest Regional Conference. The goal is to expose students to the profession of chemical engineering and engineering in general, and give students the opportunity to **interact with professional engineers, engineering students, and engineering faculty**. Students will come away from the program with an understanding of what chemical engineers do, how they touch our lives, and how to pursue a career in engineering. We encourage you and your students to join us for this one-of-a-kind program.

*Sponsored by the Chicago Local Section and hosted by the IIT Student Chapter of the AIChE*

# HIGH SCHOOL OUTREACH PROGRAM

**WHAT:      Activity Schedule (same for both days)**

- 8:30 - 9:30    **Tech Park Tours** – Smart grid center, Innovation center, Idea shop and Computerized crime prediction demonstration
- 9:30-10:15   **Introduction to Engineering** – Presentation and Ice-breaker
- 10:15-11:30   **Astronaut Al Sacco** – Chemical engineering professor and first chemical engineer in space
- 11:30-12:30   **Lunch** – with engineering students and practicing professionals  
*(lunch included at no cost to HS visitors)*
- 12:00-1:00    **Networking Hour** – Engineering Game (with prizes), Robotics and Electric Car demos, ChE lab tours, and IIT admissions booth
- 1:00-1:45     **Engineering Panel** – Q&A with engineering students and professionals
- 1:45-2:30     **Physics of Skydiving**

**WHERE:      Illinois Institute of Technology**

Bus Drop Off: IIT Tower, 10 West 35<sup>th</sup> Street, Chicago, IL 60616

Bus Pickup: Hermann Hall, 3241 South Federal, Chicago, IL 60616

(Visiting schools must provide their own transportation.)

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For reservations contact Jessica Jaskolka ([jjaskolk@hawk.iit.edu](mailto:jjaskolk@hawk.iit.edu)) and provide:

1. Teacher Name
2. Contact information (email and phone)
3. School name and location
4. Date selected (pick **ONE** of two dates 01/31/2013 or 02/01/2013)
5. Estimated number of students attending
6. Estimated arrival time
7. Estimated departure time

*(The program is limited to 200 HS students per day, so reserve your slot early)*

**For additional information please contact:**

Jessica Jaskolka  
AIChE HS Outreach Coordinator  
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**We want you for AIChE-Chicago!**  
**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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