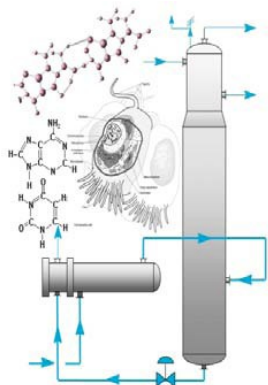


# May Newsletter

Chicago Section

[www.aiche-chicago.org](http://www.aiche-chicago.org)

May 2013



## *Inside this issue:*

Chair's Corner	2
April Meeting Summary	3
May Meeting Information	4
May Elections Information	6
WIN A PRIZE	8
Process Development Symposium in Oak Brook	9
Young Professionals May News	10
April Pictures	12

## May 2013 Local Section Meeting and Waste Water Facility Tour

**Date:** Wednesday, May 8, 2013 4:30 PM-8:45 PM

**Tour Location:**

DuPage County Knollwood Plant  
Village of Burr Ridge  
11S175 Madison St.  
Burr Ridge IL 60527

**Program Location:**

Capri Ristorante  
324 Burr Ridge Pkwy #1  
Burr Ridge, IL 60527  
630.455.4003

**Cost:**

<b>Members:</b> \$35	<b>Non-Members:</b> \$40
<b>Students:</b> \$5	<b>Unemployed/Retired:</b> \$20

Click on the link to register!

<http://www.cvent.com/d/1cqb43/4W>



## Chair's Corner

### Jerry Wilks Chair –Elect



In several of the past articles I've mentioned the AIChE Spring Conference and this article gives me an opportunity to tell you something about the conference. As happens at many conferences, the first event on the first day was the keynote address for the conference. This year the keynote presentations began with a few words from Phillip R. Westmoreland, AIChE President. He said that today AIChE has 45,000 members from over 100 countries, and 43 countries had representatives at the Spring Conference. He said that due to shale oil and gas we are about to enter a "golden age of chemical engineering". He also mentioned several aspects of this conference: the networking luncheon, young professional programming, the six topical conferences and the series of process safety symposia.

Mr. Westmoreland then introduced Aamir Farid, Vice President of Manufacturing for Shell Americas who gave the keynote address. His presentation was titled, "Delivering Innovative Solutions for an Energy Future". His presentation began with a story about his first job with Shell at a refinery near Los Angeles. He began by saying that universities don't teach that "bad things can happen" and we need to get that into university curricula. To explain this he told a personal story about a

FCC vapor cloud explosion that occurred at a refinery near Los Angeles when he first started working in the oil industry. He was called out to his unit after the fire had started and told to go into the fire and close a valve so the fire would run out of fuel and stop burning. Of course this was a scary experience for a young engineer. He said it taught him what his responsibilities really were on that unit. He then discussed the Texas City Refinery fire on March 23, 2005, and how that failure impacted the oil industry. He concluded this portion of his presentation by saying that the oil industry today is intolerant of accidents, and we need to develop new ways to keep accidents from occurring.

Mr. Farid then said a few words about Shell and where the oil industry is going. Today Shell has over 90,000 employees, and it controls about 3.2 billion barrels of oil reserves. Oil consumption is expected to be twice what it was in 2000 by 2050. So far the oil industry has been able to keep production ahead of consumption, but this is going to become more difficult with increasing demand and environmental requirements. The overall goals to reduce CO<sub>2</sub> emissions could become a major problem for refineries and chemical plants in the future. This is going to put pressure on the oil and chemical industries, and we are going to have to come up with new ways to assess risks and consequences. He presented diagrams that showed the traditional views of hazards, events, and consequences, and he pointed out some of the problems. He also presented a new approach that had at its core the role of leadership and corporate culture in preventing accidents.

Next Mr. Farid discussed the role of leadership

and the importance of getting the right information to the right people to avoid accidents. He also mentioned that many accidents occur due to the mundane activities that we all do at work. The everyday work activities like checking the lube oil on a pump can sometimes lead to failures and disasters. Having the right corporate culture can help avoid accidents that originate in mundane activities. He made a comment about the way the oil industry is moving away from employees and toward contractors. He feels this will have an impact on the functioning of our equipment and processes. (Shell has about three contractors for each Shell employee.)

Basically, Mr. Farid was making the point that the industries we are in have some dangerous aspects, and we need to pay attention to our leadership, our workers and our contractors to keep things running safely. The future is going to put pressure on the oil and chemical industries, and we need to maintain safe operations while we enter the “golden age of chemical engineering”.

## April Meeting Summary

### Janet Chu

The April 2013 AIChE Chicago meeting was held on Wednesday, April 10th at UIC. The evening started with a poster competition, featuring both undergraduate and graduate student poster submissions. Judges evaluated the authors' visual poster appeal, technical content, and oral presentation skills. Later in the evening, presenters Nate Meyer and John Calandrino, from Chemical Personnel Search Incorporated (CPS), spoke to attendees about the pros and cons of working with a recruiter

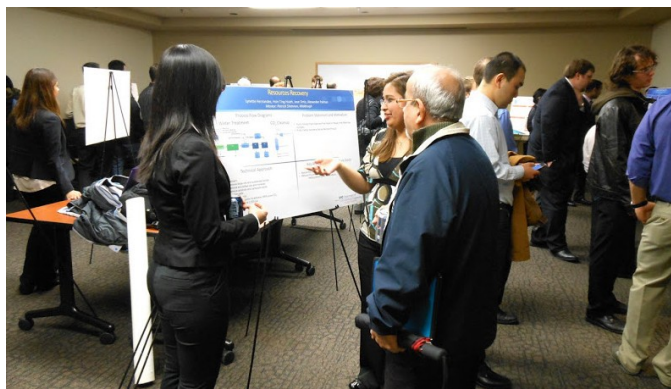
and differences in desired qualities for fresh graduates versus highly experienced candi-



dates. Nate and John also entertained questions from the audience and stayed to answer questions after their presentation.

AIChE Chicago Chair-Elect Jerry Wilks presented the McCormick awards for outstanding chemical engineering undergraduate students from UIC, IIT, and Northwestern. Jerry Wilks also presented the honorarium to the IIT AIChE student chapter for assistance in hosting and planning the 2013 Midwest Regional Conference. House Chair DeMarcus Hunter presented the poster awards to two undergraduate winners and one graduate winner.

**Thanks to all participants, judges and a special thank to all the students for their work and time. Thanks to UIC student chapter for hosting the event.**



## May Speaker Bio and Abstract

### Biography:

Mr. Richard Novak has over 32 years experience in industrial gas research and development, the last 23 years with Praxair, Inc. His current position is Assistant Director, Program Development – Water, where his responsibilities include creation of new R&D programs in water and wastewater treatment. Mr. Novak received a BSChE from Princeton University, an MSChE from MIT, an MBA from Depaul University, and is a licensed professional engineer. He is a member of the AIChE, WEF, and the AWWA, and serves on the AWWA Ozone Systems committee.



### Abstract:

#### **Reducing Emission of Volatile Organic Chemicals in Industrial Wastewater Treatment: Modeling and Case Study of High Purity Oxygen biological treatment**

In the last decade, stringent regulations have been imposed on the permissible level of Volatile Organic Compound (VOC) emissions from industrial facilities. The clean air act amendments of 1990 and related regulatory extensions (e.g., National Emissions Standards for Hazardous Air Pollutants, NESHAPs) have significantly reduced the acceptable level of Volatile Organic Compound (VOC) emissions from industrial facilities (Woodward & Curran, 2006). A total of 188 organic compounds have been designated Hazardous Air Pollutants

(HAPs); facilities which generate or handle these compounds are subject to permitting, monitoring and reporting requirements. Although extensive emissions controls have been implemented in the production process of many industrial facilities, significant amounts of VOCs may appear in the wastewater. These VOCs can be stripped into the air during conveyance through collection systems or during biological treatment.

Fate and Transport models are used for a variety of tasks including design, emissions analysis and regulatory reporting. The development of fate & transport models in wastewater collection and treatment systems were spurred by regulatory drivers like the Clean Air Act (Melcer, 1994). A variety of computer-based fate & transport models such as BASTE, EPA Water Models (versions 7, 8 and 9), CORAL, PAVE, SIMS, TORONTO, INTERCEPTOR and Toxchem™ have been applied for addressing the fate of volatile contaminants in collection systems, drop structures, weirs, quiescent surfaces, and wastewater treatment processes (Quigley et al, 2006; Melcer, 1994). EPA Water Models (7, 8 & 9) and Toxchem™ are the most commonly utilized fate and emissions transport modeling platforms in the wastewater industry. In both models, the default aeration options exclusively model the mass transfer behavior as diffused air processes or surface aeration style mechanical mixers. Attempts at modeling the performance of High Purity Oxygen (HPO) based devices have typically required finding the most appropriate approximation to the mass transfer and VOC stripping behavior of HPO aeration systems by modifying default parameters in the diffused air or surface aeration modules



(NYSERDA, 2000; Levine et al, 2010; Rodieck et al, 2001). In contrast, an improved modeling approach is employed in the recently released Toxchem™ 4.1 (Hydromantis, 2012), which extends the simulation capabilities of the platform to include the modeling HPO and Sequencing Batch Reactor (SBR) process systems.

This paper discusses results for VOC emissions modeling obtained by applying Toxchem™ 4.1 to VOC reduction projects that utilize SBR and HPO systems. We provide a methodology for modifying the default parameters in diffuser and mechanical surface aeration modules in fate and transport models in order to enable VOC emissions characteristics associated with HPO systems to be modeled, and provide comparative analyses on the effect of the approach adopted on simulation results.

## May Meeting Information

### Wastewater Plant Tour (Optional):

Starts at 4:30 PM Tour will be limited to 40.  
MUST PRE-REGISTER!!!

#### Location:

DuPage County Knollwood Plant  
Village of Burr Ridge  
11S175 Madison St.  
Burr Ridge IL 60527

#### Nearest intersection:

97th Street and Madison Street in Burr Ridge

This tour give background information needed on how a waste water treatment plant works to better understand how Praxair's solution on reducing VOC emissions works. The tour will give the participants an opportunity to see how

water is first brought into the plant, treated, and then discharged into the local water supplies.

**No special equipment, PPE, etc. needed.**

### Meeting at Capri Ristorante:

#### Restaurant Location:

Capri Ristorante  
324 Burr Ridge Pkwy #1  
Burr Ridge, IL 60527  
630.455.4003

#### Agenda:

**4:30 pm:** Waste Water Facility Tour

**5:30 pm:** Social Hour / Cash Bar at Capri Ristorante

**6:30 pm:** Dinner

**7:30 pm:** Local Section Business (Officer Elections)

**7:45 pm:** Presentation Given by Richard A. Novak, P.E., Associate Director, Program Development, Praxair, Inc.

**8:45 pm:** Guest depart

#### Dinner:

##### Appetizer

- Bruschetta Calabrese
- Calamari Fritti

##### Salad

- Cesare
- Plated Pasa
- Farfalle with 4 Cheeese Sauce

##### Entree

- Chicken Al Limon
- Eggplant Parmesan

##### Dessert

- Tiramisu

**To register click:**

<http://www.cvent.com/d/1cq43/4W>

## ***2013-2014 Elected Officers***

### **Chair - Jerry Wilks**

Jerry Wilks is a senior metallurgy and corrosion engineer at the CITGO Lemont refinery since 2005. Prior to that Jerry has been a US Air Force officer and also worked at different engineering position at AMOCO and BP Naperville campus and Whiting refinery. He has a BS in Metallurgical Engineering and two masters degree in Materials Engineering and Chemical Engineering all from IIT in Chicago. Jerry holds three US patents and is the author of several publications. He has served as the secretary and vice-chair program of the AIChE Chicago section and has been a contributor and organizer of the AIChE midwest regional conferences since 2006. He is currently the secretary of the Chicago section.

### **Director at Large -Jeff Umbach** (continuing)

Jeff Umbach is an Instrumentation and Controls Engineer at Ambitech Engineering Corporation. He received his B.S. in Chemical Engineering from the University of Illinois at Chicago.

### **Director at Large - Jennifer Guilfoyle** (continuing)

Jennifer Guilfoyle is a Process Engineer with Middough in Oak Brook. She joined Middough in 2010 after receiving a BS in Chemical Engineering from Illinois Institute of Technology (IIT) and passing the fundamentals of engineering exam. In her current position, she is involved in process design in the refining industry. She was an active member of the IIT student chapter of AIChE and is a current active member of the Chicago Section's Young Professional Advisory Board.

## ***Proposed Slate for 2014***

### **Chair Elect - Azita Ahmadzadeh**

Azita Ahmadzadeh received her PhD in Chemical Engineering from IIT in Chicago and worked as a CFD modeling specialist at Simutech group for 5 years. She was involved in AIChE national as session chair at national meetings. She is the MPC of the 2013 PDS which will be held in June in Oak Brook. Azita has been very active in the local section as newsletter editor for many years and also as the fundraising committee chair for the Midwest Regional Conference. She is the 2010 recipient of the AIChE Local Section Committee's Shining Star Award for outstanding volunteerism.

## **Secretary - Open for Nominations during Meeting**

### **Treasurer - Patrick Shannon**

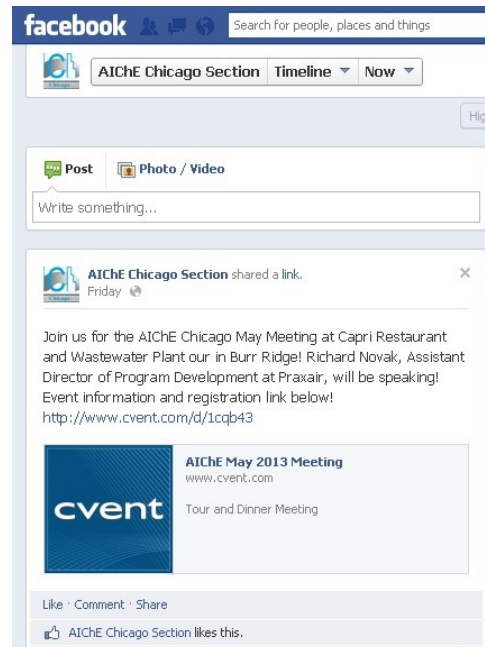
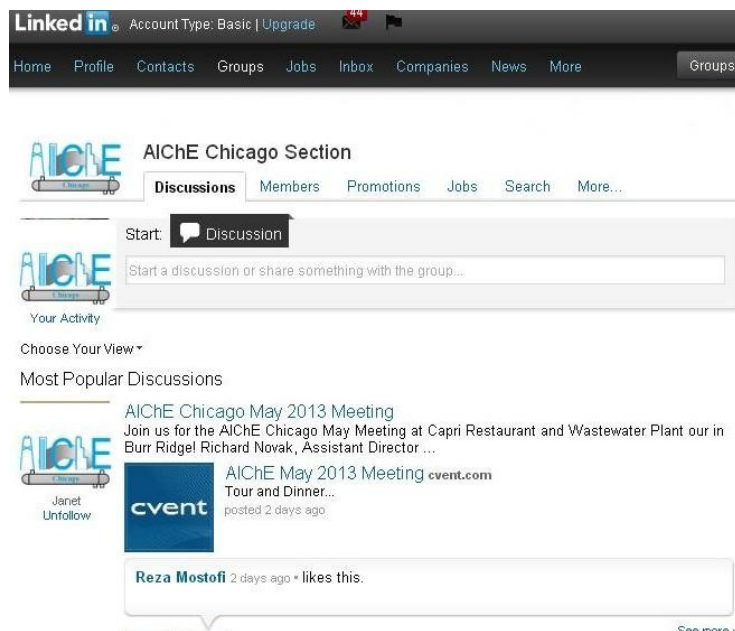
I am currently employed as a Senior Staff Engineer at Middough, Inc. and I have held process engineering positions at several engineering companies in the Chicago area as well as in Houston. I have proudly served the Chicago Section as Chair, Past-Chair and House Committee Chair. And I have been a New Officer Training leader. I have also been Program Chair and Session Chair for the Midwest Regional Meeting. It is an honor to fill any AIChE local section elected position, and I expect to serve with honesty and enthusiasm. I will do my best to fulfill all Chicago Section Treasurer requirements.

### **Director at Large - Steven Wozniak**

Steven Wozniak is a Process Specialist in Process Plants Process Technology with UOP specializing in Hydrogen PSA. Prior to that Steven was a Consultant with Jacobs Consultancy, a Senior Process Engineering Lead with Jacobs Engineering in Houston where he lead a team of process engineers in the design and integration of various process units into refineries. He has over 10 years experience and design expertise in ULSD hydrotreaters. Steven served as the Secretary in 2012 and House Chair in 1998 for AIChE Chicago. He holds a B.S. in Chemical Engineering from the University of Illinois Champaign Urbana and earned a M.S. in Chemical Engineering in a joint degree between the National University of Singapore and the University of Illinois Champaign Urbana.

### **Vice Chair Program - Dan Rusinak**

Daniel Rusinak, PE, is Chief Process Engineer at Middough, Inc, Chicago office. He has over 37 years of professional engineering experience in development, design, construction and operations of specialty, polymer, and fine chemical plants. Dan has served the AIChE Chicago Section as Vice-Chair Program 2011-2012, and he was House Committee Chair for two years.



## AICHE Chicago Section is now on Facebook and LinkedIn!

### Join/Like Us for a Chance to Win a Prize!

Join our group on LinkedIn or Like our page on Facebook and attend the May Meeting for a chance to win a \$25 giftcard!

Here's how to have a chance to win!

1. [Click here](#) to go to our LinkedIn group or [Click here](#) to go to our Facebook page! Join our LinkedIn group or like our Facebook page.
2. Attend the AICHE Chicago May 2013 Meeting.
3. At registration, ask to participate in the raffle.
4. During the section announcements after dinner, a winner(s) will be drawn! Must be present to enter and win. AICHE Chicago board members as [defined by the website](#) are not eligible to participate or win.



Links:

<http://www.linkedin.com/groups/AICHE-Chicago-Section-4538581>

<http://www.facebook.com/AICHEChicagoSection>

<http://www.aiche-chicago.org/section-info/board-members/>





**Plan on joining** your colleagues, friends and fellow chemical engineers at the 2013 Process Development Symposium, organized by the Process Development Division of AIChE.

<http://www.aiche.org/conferences/process-development-symposium/2013>

### Opening Keynote

#### **Innovative Use of Waste Gases to Make Sustainable Fuels and Chemicals**

##### **Jennifer Holmgren – CEO of LanzaTech**

Dr. Holmgren leads the company's global management team and sets the strategic direction for the organization. LanzaTech has developed a novel gas to liquid platform for the production of valuable fuels and chemicals using waste gases.



### Technical Program

#### **Wednesday, June 12, 2013**

- **Process Design, Modeling, and Flow-sheets**
- **Prevalent Industry Unit Operations**
- **Separation Unit Operations You Didn't Learn about in School**
- **Mixing Unit Operations You Didn't Learn in School**

#### **Thursday, June 13, 2013**

- **Pilot Plants**
- **Environmental, Health, and Safety Concerns**
- **Case Studies**
- **Process Scale-Up Dos & Don'ts**

**The PDS Registration Includes:** breakfasts, lunches, evening receptions, meeting refreshments, and conference proceedings.

**Be prepared to leave with** a critical understanding of unit operations, environmental, health, and safety concerns and non-technical issues such as process scale-up dos & don'ts. Attendees will have ample opportunity to network with experts from all sectors.



## **AICHE YPs May Activity**

### **Spirax Sarco Demonstration/Tour for YPs**

**When: Wednesday, May 29<sup>th</sup>, 6:00PM-7:30PM**

**Where: Spirax Sarco Lab, Lisle, IL**

**Cost: \$10**

**RSVP: Janet, [janet.lily.chu@gmail.com](mailto:janet.lily.chu@gmail.com) by Mon, May 27<sup>th</sup> by 2PM**

Spirax Sarco, provider of steam traps, instrumentation, controls, and systems, will be giving a tour and demonstration at their Lisle lab! Join us in learning about steam traps and regulators! Pizza is included in cost.



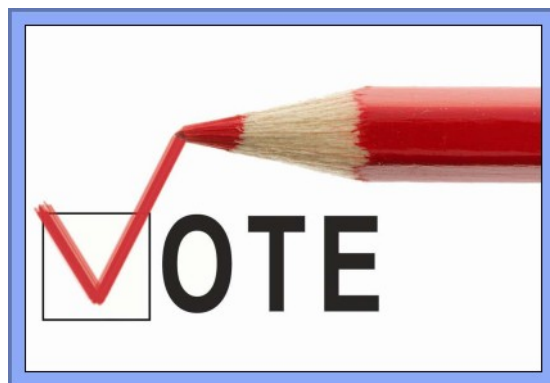
Please RSVP to Janet, [janet.lily.chu@gmail.com](mailto:janet.lily.chu@gmail.com), by Mon., May 27<sup>th</sup> by 2PM to attend!

## ***Election of Section Officers***

### ***ABSENTEE BALLOTS***

At the May meeting, AIChE-Chicago will be holding the annual election of local section officers. The proposed slate of officers for fiscal year July 1, 2013—June 30, 2014 is included in this newsletter. The slate will be voted upon at the May meeting. At the meeting, there will be one last call for nominations before the vote begins. Absentee ballots will be counted before the meeting. If no other nominations are received, a voice vote will be called for the proposed slate. If additional nominations are received, a vote will be called for each individual position.

Members may send in an absentee ballot to **Jerry Wilks** [gwilks@citgo.com](mailto:gwilks@citgo.com)



# Knowledge is power.

At URS, we believe that the more involved you are with a process from beginning to end, the better equipped you are to provide solutions. Today, through our proven experience, we are helping clients across the Midwest meet the increasing demand for energy and chemicals. From feasibility studies, process and detailed design through construction for oil, gas, and chemical facilities, we help our customers succeed. Which is why more people are turning to us to get it done. We are URS.



# URS

FEDERAL  
OIL & GAS  
INFRASTRUCTURE  
POWER  
INDUSTRIAL

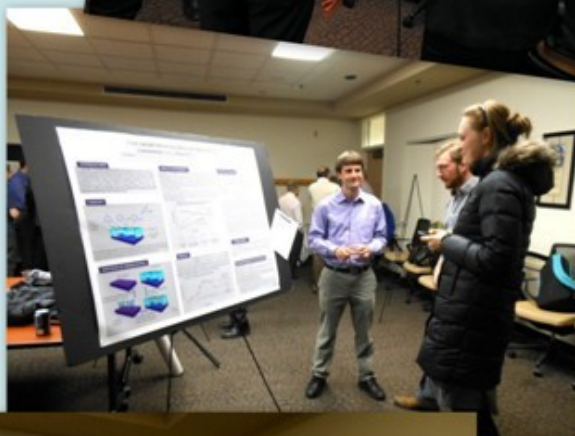
URS.COM

MIDWEST PROCESS ENGINEERING Chicago, IL 60606 1.312.577.7437  
Douglas.chidley@urs.com





Photos by: Janet Chu



Photos by: Janet Chu



### Officers and Contact Information

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

### Directors at Large

Annette Johnston <a href="mailto:Annette.Johnston@abbott.com">Annette.Johnston@abbott.com</a>	Jeff Umbach <a href="mailto:jumbach@ambitech.com">jumbach@ambitech.com</a>
	Jenn Guilfoyle <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)

## 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](http://www.aiche-chicago.org/Section_Info/Volunteer)

## 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.

AICHE Publicity Committee Fees	Academic (non-AICHE)		Company		Recruiters	
	Per Month	Per Year	Per Month	Per Year	Per Month	Per Year
<b>Advertisements (3X3)</b>	100	450	150	675	N/A	N/A
<b>Half-Page (~7"x 4.5")</b>	280	1260	420	1890	N/A	N/A
<b>Job Posting (Size?)</b>	50	225	100	450	250	N/A
<b>Special Sizing</b>	Contact Publicity Committee <a href="mailto:aichechicago@gmail.com">aichechicago@gmail.com</a>					

For the purchase of a year ad, customers have the option of changing ads/jobs month to month.

Student and AIChE Member Related Postings are Free.

