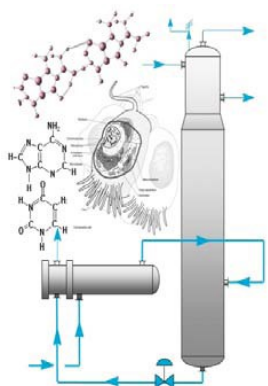


November Newsletter

Chicago Section

www.aiche.org/Chicago

November 2018



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AIChE Chicago

November Meeting

Systems Approaches for Engineering Microbial Biocatalysts

Dr. Jennifer Reed

University of Wisconsin –Madison



Date: *Thursday, November 15, 2018*

Program Location: Ram Restaurant and Brewery
9520 W Higgins Rd
Rosemont, IL 60018
(Accessible from I-90/I-94/I-294 and CTA Blue Line)

Dinner Costs: AIChE Global and Local Section Member: \$40
AIChE Global Member: \$45 Non-Member: \$50
Students: \$10 Unemployed/Retired: \$15

Register Here:

<http://www.cvent.com/d/qbqd8w>

Agenda

5:30-6:30: Registration and social hour with cash bar
6:30-7:30: Dinner
7:30-7:45: Announcements
7:45-8:45: Technical presentation and Q&A

Chair's Corner

The 2018 AIChE Annual Meeting just concluded last week. I did not attend but hope many of you did and enjoyed your time in Pittsburgh. Much like our monthly local section gatherings, the annual meeting is a great occasion to network and to learn about the remarkable work being done throughout the chemical engineering community. I often find myself feeling quite inspired after going to technical conferences and definitely believe there is value in having such environments to connect and interact with peers.

We have been fortunate to have our own premier symposium nearby in the form of the Midwest Regional Conference (MRC). For those not familiar, the MRC has been held annually in the Chicago area over the past decade and is a comprehensive meeting featuring distinguished keynote lectures, parallel technical sessions on a variety of topics, workshops, and an extensive high school outreach program. I first attended the MRC in 2015 and attribute that experience as a major factor in influencing me to increase my involvement with the local section. While many of us simply enjoy the fruits of labor as attendees, the considerable effort of the AIChE Chicago section, host university (UIC or IIT), and numerous dedicated volunteers that goes into arranging the conference has been vital to its success and should certainly be recognized and commended.

Attendance at the 2018 MRC was unfortunately lower than in prior years. There have been several follow-up conversations since its conclusion, to assign primary roles for the next conference and furthermore reflect on how to structure the event to best serve the interests of attendees. These discussions have taken time, and while organization of the 2019 MRC (planned for March 18-19 at UIC) has consequently gotten off to somewhat of a delayed start, we have two very capable people leading the charge in Dennis O'Brien (conference

chair) and Professor Satish Parulekar (programming chair). There is a vast amount of work ahead though, so I wanted to use this month's corner to highlight the need for volunteers to assist with the conference. Serving on a

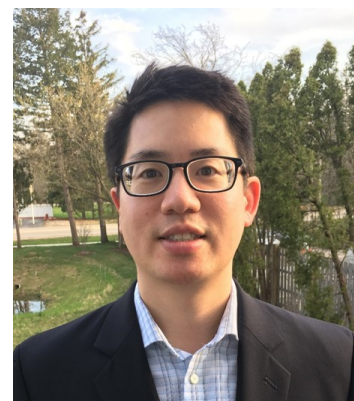
logistics committee or as a session chair are a couple of ways to help; a list of opportunities is outlined further on in this newsletter, and I ask that you consider joining the team. Your support in this substantial undertaking is absolutely critical! Volunteering provides a chance to make new contacts, receive valuable mentoring, and have a significant impact on the symposium, so please send us a note, (aichechicago@gmail.com) or reach out to Dennis directly (dennisobr@gmail.com) if interested in taking on this challenge.

Of course, technical presentations are the core of the meeting. Hence, another aspect I would like to emphasize is the need for quality content. Be sure to keep an eye out for the call for contributions and certainly, think about submitting if possible to help the conference committee establish a good program slate. The presentations are an opportunity to showcase your talents and let us know about the interesting activities that you all are involved in, and particularly for those in early-career stages, are an excellent means to gain recognition within the community.

As a reminder, the monthly meeting on November 15 will be our last one of 2018, so please attend if you can! I hope to see you there.

Bob Tsai

*Chair, 2018-2019
AIChE Chicago*



November Meeting

Systems Approaches for Engineering Microbial Biocatalysts

BIOGRAPHY

Jennifer Reed is a Harvey D. Spangler Faculty Scholar in the College of Engineering and Professor in the Department of Chemical and Biological Engineering at the University of Wisconsin-Madison. She received her B.S. in Bioengineering: Biotechnology and Ph.D. in Bioengineering from the University of California, San Diego. She has received a number of awards for her research including an NSF Career Award, DOE Early Career Award, and a Presidential Early Career Award for Scientists and Engineers (PECASE). She is an American Institute for Medical and Biological Engineering Fellow and a Kavli Fellow. Her group develops and applies systems biology approaches to study and engineer microbial metabolism and regulation for a variety of biotechnology applications.

ABSTRACT

Microbes have been engineered to produce a variety of chemicals, including biofuels, commodity chemicals, specialty chemicals, and therapeutics. Chemical production can be enhanced by connecting synthesis pathways to host metabolism, re-wiring regulatory networks, improving precursor produc-

tion, and optimizing gene expression. A number of computational systems biology approaches have been developed to facilitate metabolic engineering efforts by suggesting which combination of genetic



changes would improve chemical production. Network analysis methods can be used to identify paths from renewable substrates to high-value chemical products and central metabolic precursors common to a variety of chemical products. Genome-scale metabolic models can be used to predict how gene deletions, gene additions, and gene expression changes would impact chemical product yields, growth rates, and/or productivities. Additionally, machine learning and active learning algorithms can be used to optimize gene expression constructs to efficiently convert metabolic precursors into desired products. Case studies will be presented that show how a variety of computational tools can guide development of strains with enhanced chemical production. This work will illustrate how integrating computational and experimental efforts can lead to the rapid development of microbial biocatalysts for renewable chemical production.

To Register :

<http://www.cvent.com/d/qbqd8w>

October Meeting Summary

Granite City Food and Brewery hosted the local section meeting in October. With construction in progress on Highway 53, it was an adventure in traffic to get to the venue on the southwest corner of the Woodfield Mall, but the camaraderie, quality of the food, and excellent brews made the adventure worthwhile. We Chemical Engineers asked for and got a tour of the on-site brewery, which included tasting the beer directly from the tanks and a reveal that the wort is produced and shipped from a single facility in Iowa to ensure that the beer recipes taste the same at all Granite City locations. Rich Johnson, an Engineering Fellow from the FCC Technology Center of Honeywell's UOP LLC, was the invited speaker and discussed the complexities of revamp engineering compared to new FCC unit designs. Rich emphasized the importance of engineering expertise, close interaction with the unit owner, an early on-site visit to confirm the equipment layout, and gave an example of the utility of reactor/regenerator CFD to help accomplish revamp objectives. About 40 engineers attended the meeting, including a strong contingency from UOP and PSRI which made for a lively Q&A afterwards.

By: Lance Baird



Young Professionals NEWS

AIChE Young Professionals,

Check your inboxes for our next event! We're trying something new by introducing meeting themes at our next social as a catalyst for conversation. The theme we plan to discuss in our upcoming event is non-traditional and adjacent careers. A few YP board members plan to be there ready to tackle the theme for those interested. If the theme doesn't interest you then join us for a fun evening of catching up and networking.

The event will take place on Monday, November 12th in Evanston at the Temperance Tap Room beginning at 6:30 PM. Please remember to RSVP by Friday, November 9th. If you did not get the invitation and would like to join the young professionals mailing list please email me at Larry.Avtzis@mcdermott.com.

A special thanks to those of you that volunteered for Chemistry Day. The event was held at the College of DuPage in Glen Ellyn on October 27th.

We put up the AIChE poster, some PPE, and candy to entice children and parents alike. Everyone enjoyed conveying the merits of a chemical engineering education and the opportunities available in our industry.

Finally do not hesitate to contact us in providing feedback. The Google Forms survey that was sent a while ago is still open if you'd like to complete it. We hope to see you at our upcoming events and wish you continued success in our exciting field of chemical engineering!

Eleftherios (Larry) Avtzis

AIChE-Chicago YP Chair





2019 AICHE Midwest Regional Conference Chicago, IL

March 18-19, 2019

Hosted by University of Illinois @ Chicago, UIC

Organized by Chicago Local Section of AICHE

Volunteers needed for MRC 2019

The AICHE Midwest Regional Conference 2019 organization is well underway. We are still trying to fill a couple of Committee Chairs:

Registration Committee – *registration committee is responsible for the registration both online and on-site.*

Onsite Registration – *responsible for the printing of name badges for all preregistered attendees and distribution of program books. Also, issue PDH (continuing education) certificates as well as manage associated sign-in/out sheets.*

Lodging and Travel - *Provide support for making arrangements and/or coordinating travel arrangements for out of state guest participants and visitors*

Signage – *responsible for creating, printing and displaying any signage required for the conference.*

Session chairs: *We also need your help in organizing the technical sessions. This position includes soliciting three speakers for your session that can be about a relevant subject. It is a great opportunity to know your peers in your interest area and expand your network of friends as well. We would like to have two co-chairs for each session so in case of any unforeseen circumstances, the session can still be held at the given time slot. Our estimate for the time required to perform this task is around 10-15 hours excluding the actual time at the conference. Please note that there are several sessions in parallel and we need many volunteers for this position.*

If you have an interest in any of these positions or if you want to volunteer for any other MRC committee, please contact Dennis O'Brien at dennisobr@gmail.com. The MRC 2019 will be held March 18-19th 2019 at UIC. More information is available at the conference web site:

<https://www.iche.org/community/sites/local-sections/chicago/mrc11-2019>.

ERNEST W. THIELE AWARD

The Ernest W. Thiele award is sponsored by BP and recognizes the outstanding contributions to our profession by a Midwest region chemical engineer. This award was established by the AIChE Chicago Section and is presented annually to a Midwest region AIChE member. This internationally recognized award consists of an engraved plaque and \$1000 honorarium presented at our sectional meeting.

Nomination forms and additional information can be obtained from the Thiele Committee Chair. Completed nominations are due to the committee chair no later than April 1, 2019

One of the highest honors a distinguished chemical engineer can receive is our Chicago Section Thiele award. Please consider nominating a deserving engineer for this prestigious award.

Jim Simnick

BP Amoco Complex, J-8

150 W. Warrenville Road, Naperville, IL 60566

Ph 630-420-5936, fax 630-420-4832

email: james.simnick@bp.com

Volunteers Needed for Chicago Local Section

The AIChE Chicago Section needs volunteers to help with:

- **Newsletter Editing** - format, edit, and draft newsletters
- **Newsletter Contributions** - write meeting summaries, contribute photos, interview members, or write newsletter pieces

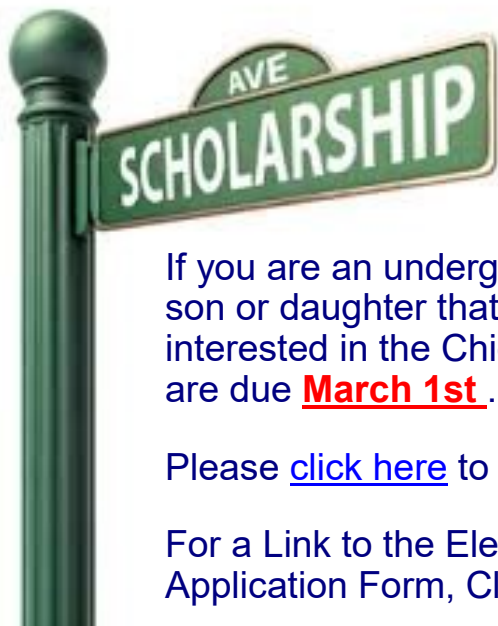
If you have an interest in any of these positions or if you want to volunteer for any other committee, please contact email aichechicago@gmail.com .

Congratulations to Chicago Area Award Winners!

Congratulations to the following [award recipients](#) honored at the AIChE Annual Meeting this year!

- [Julio M. Ottino](#), Founders Award for Outstanding Contributions to the Field of Chemical Engineering
- [Linda J. Broadbelt](#), R.H. Wilhelm Award in Chemical Reaction Engineering
- [Jeffrey A. Hubbell](#), James E. Bailey Award
- [Urmila M. Diwekar](#), Clarence (Larry) G. Gerhold Award
- [Hamid Arastoopour](#), Sustainable Engineering Forum Research Award
- [Aida Amini-Rankouhi](#), Sustainable Engineering Forum Student Paper Award
- [Daniel Garcia](#), Sustainable Engineering Forum Student Paper Award
- [Donald Chmielewski](#), Shining Star Award

Attention Students and Parents!



If you are an undergraduate chemical engineering student or have a son or daughter that plans to study chemical engineering you may be interested in the Chicago Section's scholarship program. Applications are due **March 1st**.

Please [click here](#) to read rules and eligibility.

For a Link to the Electronic Version of the AIChE Chicago Scholarship Application Form, Click on the Link Below:

<http://form.jotform.us/form/42814483647159>

Upcoming AIChE Conferences, Meetings and Webinars

Chicago Local Meetings

Nov 15, 2018	"Systems Approaches for Engineering Microbial Biocatalysts", Rosemont, IL
Jan 25, 2019	Joint Meeting w/ ACS, Roosevelt University, Schaumburg, IL

AIChE Conferences

Nov 12-Nov 14, 2018	<u>Space Travel: Adaptive Research and Technologies from Biological and Chemical Engineering (STAR Tech)</u> , Hyatt Regency Houston, TX
Nov 15-16, 2018	<u>Industrial Water Use and Reuse Workshop 2018</u> , San Antonio, TX
Dec 2-4, 2018	<u>Food Innovation and Engineering (FOODIE) Conference</u> , Napa, CA
Dec 5-7, 2018	<u>6th International Conference on Stem Cell Engineering 2018</u> , Los Angeles, CA
Mar 18-19, 2019	<u>AIChE Midwest Regional Conference</u> , Chicago, IL

AIChE Webinars

Nov 7, 2018	<u>"EM-101" An Introduction to the DOE Office of Environmental Management</u>
Nov 14, 2018	<u>The Value of Process Intensification for Module Manufacturing</u>
Nov 14, 2018	<u>Beyond the Basics: Managing Risk at BASF From Beginning to End</u>
Dec 12, 2018	<u>Modeling Membrane Separation</u>

Officers and Contact Information

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	Sarika Goel
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Chicago Section
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aichechicago@gmail.com

We are on the web
www.aiche.org/Chicago

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

<http://www.aiche.org/community/sites/local-sections/chicago/announcements/volunteerism>

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 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
Advertisements (3X3)	100	450	150	675	N/A	N/A
Half-Page (~7"x 4.5")	280	1260	420	1890	N/A	N/A
Job Posting (Size?)	50	225	100	450	250	N/A
Special Sizing	Contact Publicity Committee aichechicago@gmail.com					

For the purchase of a year ad, customers have the option of changing ads/jobs month to month. Online payment can be done using <http://www.cvent.com/d/9cq5pw/4W>

Student and AIChE Member Related Postings are Free.

