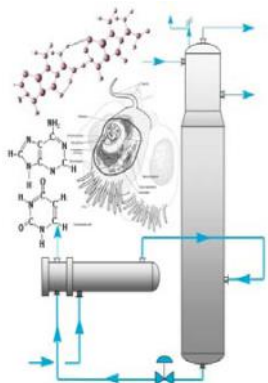


January Newsletter

Chicago Section

www.aiche.org/Chicago

January 2019



Inside this issue:

Chair's Corner	2
January Meeting Info	3
Young Professionals News	5
AIChE Midwest Regional Conference (MRC-11)	7
Scholarship Info	8
Thiele Award	9
Volunteer Opportunities	10
Upcoming Events and Webinars	12

AIChE Chicago January Joint Meeting with ACS

Rational Cancer Vaccine Design Based on Spherical Nucleic Acids

Dr. Andrew Lee

Northwestern University



Date: *Friday, January 25th, 2019*

Where: *Roosevelt University—Schaumburg*

Address: *1400 N. Roosevelt Rd. Schaumburg, IL*

Cost: *AIChE Members—\$15
Non-Members—\$17*

Registration and Information: <http://www.cvent.com/d/j6q7zy>

Agenda

5:30 - 6:30 Registration and poster session
6:00 - 6:20 Pre-dinner presentation: Joel Schoenburg
6:30 - 7:30 Dinner
7:30 - 7:45 Announcements
7:45 - 8:30 Technical presentation



AIChE®
MIDWEST
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DON'T FORGET! EARLY BIRD
REGISTRATION ENDS

JANUARY 31ST!

Register Here: <http://www.cvent.com/d/8bqtj2/4W>

Chair's Corner



Happy New Year!

Hopefully you had a wonderful holiday break and are feeling refreshed heading into 2019. Of course, with the ringing in of the year comes the tradition of New Year's resolutions. I think having major aspirations to run a marathon or visit a faraway country are certainly admirable. However, I also strongly believe there is immense value in finding ways (no matter how small) to resolve to get better each and every day. For instance, simply making an effort to chat more with co-workers can be a means to gradually strengthen communication skills, and such steps can go a long way to making you a more well-rounded individual inside and outside of the workplace.

New Year's resolutions are inherently about self-growth. A common suggestion in this regard is to do something outside of your comfort zone – basically, put yourself in new situations or force yourself to interact with new people. There is much we all can learn by just being exposed to diverse and sometimes dissimilar viewpoints. For this reason, I really have fun at our monthly meetings observing the conversations between students, retirees, and everyone in between. I furthermore enjoy the fact that many of our invited speakers through the years have actually *not* been chemical engineers but rather physicists, mechanical engineers, attorneys, and so forth, because of the fresh perspectives and unique approaches to issues they bring.

The upcoming monthly meeting is a case in point. I am excited to announce that the Chicago Section of the American Chemical Society (ACS) will be co-hosting this meeting with us, akin to past years. Thus, in addition to the usual agenda, there will be the bonus of sharing the setting with another technical organization, which I anticipate will spur interesting discussions. I strongly encourage reaching out and interacting with our ACS colleagues if you are able to attend. You never know what kind of connections you might end up developing!

Bob Tsai

AIChE Chicago Section Chair, 2018-2019

January Meeting Information

Andrew Lee

Rational Cancer Vaccine Design Based on Spherical Nucleic Acids

Speaker's Bio:

Andrew Lee is a Research Assistant Professor at Northwestern University, in the Department of Chemical and Biological Engineering. Following his PhD training in chemistry at Harvard University post-doctoral training at Northwestern University, he began an appointment as an independent investigator at Northwestern University. Andrew Lee's activity in nanomedicine research involves the development of spherical nucleic acid (SNA) nanostructures as therapeutic agents for the treatment of cancer (immunotherapeutic or gene regulatory mechanisms of action), in research programs led by Professor Chad Mirkin at Northwestern University. This research is examining the chemical composition and structure of SNAs (the core, oligonucleotide, and antigen and peptide-conjugation chemistries) as the drivers of the ability of SNAs to function as agents that enter targeted cells and enhance the activity of therapeutic

oligonucleotides (as immunostimulatory compounds). These research efforts are supported by the National Cancer Institute and Prostate Cancer Foundation. Related research projects, aimed at innovating vaccine immunotherapy for prostate cancer, are focused on discovering neoantigens through the identification of post-translationally modified proteins and analysis of the immunogenicity of these proteins.



Abstract:

Nanomedicine stands to make major contributions to immunotherapy. Nanostructures that can be designed to present and deliver immunestimulatory molecules to cells of the immune system provide a way to boost, modulate and tune immune responses to disease. Spherical nucleic acids (SNAs) are a specific and promising class of nanostructure that are we are developing as immunotherapeutic vaccines for cancer. In spite of what is known about the molecular pathways for immune system stimulation and antigens specific for many types of cancer, cancer vaccines have historically not shown outstanding success clinically. What remains poorly understood is how best to de-

liver and present antigen and adjuvant molecules to the immune system. SNAs have the characteristic feature of a nanoparticle core presenting chemically functionalized TLR agonist oligonucleotides at high surface density. SNAs are structurally well-defined and modular in nature; through synthetic chemistry, we have controlled several structural features of SNAs independently (e.g., core composition and size, position of antigen). This approach has enabled our rational design of vaccines based on SNA structures and has identified several structural features critical for stimulating anti-cancer immune responses. We have found that variations in the structures of SNAs, those that are compositionally equivalent but structurally distinct, lead to major differences in the quality of induced antigen-specific immune responses. Our development of SNAs as potential cancer vaccines has not only led to the identification of structures that generate anti-tumor responses and survival benefits in vivo, but has also allowed us to establish the structural and mechanistic basis for function and to drive further improvements in vaccine design.

Pre-Meeting Speaker:

Joel Schoenburg, ACS Chicago YCC Chair

"Lead, the versatile metal that fixed engine knock"

This short presentation dives into a portion of the book, "Prometheans in the Lab." Most people today know that lead poses some health risk. But the book transports us to a time where lead was everywhere, even in our toothpaste containers. I would like to talk about the driving factors in science when health was no issue. What did leaded fuel succeed at doing? What did it fail at?

For January Meeting Information and Registration, click here: <http://www.cvent.com/d/j6q7zy/>

For additional satellite locations available through ACS, please visit [their website](#).

Young Professionals News: December Social

The December AIChE social event was strung up in lights for the holidays. AIChE members attended Lincoln Park Zoo Lights and became acquainted with their peers and the rest of the animal kingdom.

The small-reptile house featured an assortment of smaller critters from foxes and geckos to armadillos and chameleons. In between these well-defined creatures were others who were perhaps trying to be something else: leaf frogs, dwarf crocodiles, spider tortoises, and a feathery gilled creature called an axolotl. Regardless, the emperor newt presided over all.

In the primate house, the situation less chaotic. The sometimes rowdy animal inhabitants were huddling together for a night's rest, tails intertwined. The final stop at the zoo was the African Journey building where a sheepish giraffe managed to hide itself from visitors. Hopefully, the resident hippopotamus filled the void.

After the zoo, the attendees had dinner at a nearby 5 Guys restaurant. There were only five people in attendance, but our backgrounds and current situations were diverse. Some had always called Chicago home while others came here from faraway countries. Some were looking for the next step in their careers while others were taking their first steps on their career journeys. Wherever you find yourself, we hope you have enjoyed a happy holiday season, and we look forward to seeing you soon.

YP's: Look out for an upcoming invitation from YP Programming for our annual Whirlyball event!

Regards,

AIChE House Committee and YPC

December Social — Pictures



Why Renew Your AIChE Membership?

Renew Membership



Renew your membership now to keep learning and growing.

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- Access to CareerEngineer—a comprehensive job site tailored to chemical engineers
- Access to the AIChE eLibrary—a wealth of information from Knovel Life Sciences and the McGraw-Hill AccessEngineering Library collections

[View COMPLETE benefits](#)

2019 AIChE Midwest Regional Conference

Registration is Now Open!

Chicago, IL – March 18-19, 2019

Hosted by University of Illinois at Chicago

Organized by Chicago Local Section of AIChE



Early-Bird registration deadline

January 31, 2019.

NOTE:

Regular registration deadline

February 28, 2019.

More information about the AIChE Midwest Regional Conference can be found with this link: [MRC](#).

If you have an interest in volunteering for MRC, please contact

Dennis O'Brien

at dennisobr@gmail.com.



Sponsorship of the 2019 AIChE Midwest Regional Conference:

<http://www.cvent.com/d/3bqbgz/4W>

For more information, please contact

[Janet Werner](#) or [Azita Ahmadzadeh](#).

Registration link:

<http://www.cvent.com/d/8bqtj2/4W>

The planning committee for the 2019 AIChE Midwest Regional Conference is now accepting oral and poster abstracts.

For submission questions Contact the Programming Chair at parulekar@iit.edu

[Click Here to Submit your Abstract](#)

The Fuels and Petrochemicals Division High School Academic Scholarship for STEM Majors.

The Fuels and Petrochemicals Division of AIChE (F&PD) is pleased to sponsor two \$1,000 one-time awards to exemplary high school seniors who plan on studying engineering or science from an ABET accredited college starting in 2019. F&PD is committed to introducing high school students to careers in Fuels & Petrochemicals through its programs, helping to fuel the industry's need for top talent in the future.

Details of the program, along with applications, will be available on the F&PD website:

<https://www.aiche.org/community/sites/divisions/fuels-and-petrochemicals/awards>

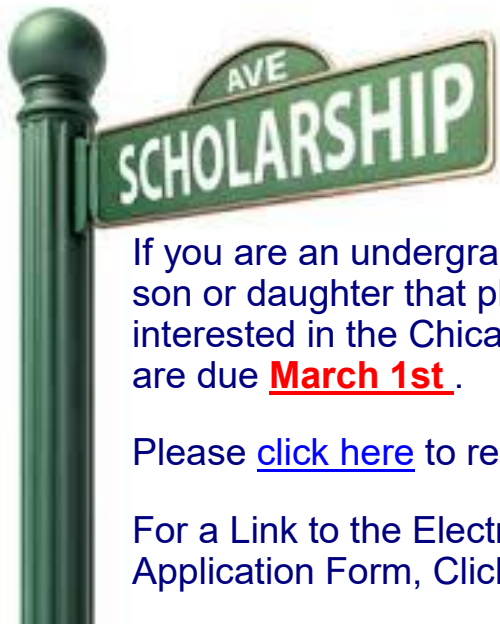
If you do have any questions or have interest in volunteering to help run this program of F&PD, please contact our Scholarship Coordinator, Professor Sheima Khatib. We kindly ask F&PD members to help spread the word on F&PD's annual high school scholarship program.

Sincerely,

Sheima Khatib - fpdHS-scholar@aiiche.org

Bill Rooney - fpdchair@aiiche.org

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>

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



**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>.

Volunteers Needed for Chicago Local Section

The AIChE Chicago Section needs volunteers to help with:

- **Newsletter Contributions** - write meeting summaries, contribute photos, interview members, or write newsletter pieces
- **Welcoming and Registration** - help at registration desk for monthly meetings, develop membership initiatives

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.

Visit our website!

Be sure to check out our website to make sure you have the latest information on meetings and events! Miss a meeting? You can even find old newsletters and past events!

If you want to help us improve our website, please give us feedback, or even better, volunteer to help us with the website!



Thank you for being part of AIChE Chicago!

www.aiche.org/Chicago

AIChE Chicago is now on Facebook and LinkedIn!



Like us on Facebook www.facebook.com/AIChEChicagoSection



Join our group on [LinkedIn!](#)

Upcoming AIChE Conferences, Meetings and Webinars

Chicago Local Meetings

Jan 25, 2019	January 2019 Local Section Meeting - Joint with ACS, Schaumburg, IL
Feb 26, 2019	Speaker: Donald Chmielewski. "Economic Based Controller Design." Location TBD.

AIChE Conferences

Feb 5-6, 2019	SPE/AIChE Workshop: Spend Less and Produce More, Austin, TX
Feb 13-14, 2019	3rd Ethylene Middle East Technology Conference & Exhibition (EMET), Manama, Bahrain
Feb 13-14, 2019	Middle East Fine & Specialty Chemicals Conference & Exhibition (ME-SPEC), Manama, Bahrain
Feb 17-20, 2019	6th International Conference on Accelerating Biopharmaceutical Development (AccBio 2019), Carlsbad, CA
Mar 11-13, 2019	2019 E2S2-CREATE and AIChE Waste Management Conference, Singapore
Mar 18-19, 2019	AIChE Midwest Regional Conference, Chicago, IL
Mar 31-Apr 4, 2019	2019 Spring Meeting and 15th Global Congress on Process Safety, New Orleans, LA

AIChE Webinars

Jan 23, 2019	PSM Compliance Audits - Leveraging your "A" Team
Feb 6, 2019	Biotechnology for Aquaculture

Officers and Contact Information

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Chair Elect Protem	Jarad Champion
Chair Programming	Ha Dinh
	Sarika Goel
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Treasurer	Jeff Zalc
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	Dennis O'Brien
	Olha Zvarych
House Committee	Paolo Palmas
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	Azita Ahmadzadeh azita.ad@gmail.com
	Janet Werner Janet.werner8@gmail.com

AICHE CHICAGO SECTION

American Institute of Chemical Engineers
Chicago Section
13964 Doral Lane
Homer Glen, IL 60491
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.

