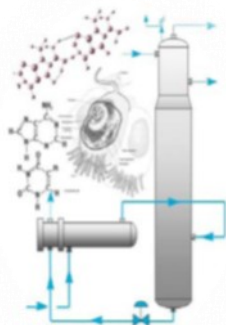


# AICHE Chicago Section

## November 2021 Newsletter



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## November Meeting Summary

<b>Speaker:</b>	<b>Professor Jennifer Dunn</b> Northwestern University Associate Director of Northwestern-Argonne Institute of Science and Engineering Associate Director of Northwestern's Center for
<b>Topic:</b>	<b>Guideposts and Guardrails: Analysis to Guide Energy and Material Transitions</b>
<b>Event Date</b> <b>Registration Deadline:</b>	<b>Monday November 15<sup>th</sup></b>
<b>Program:</b>	5:30 PM Zoom Meeting Opens 5:45 PM Technical Presentation, Q&A 6:45 PM Section Announcements & Networking
<b>Where:</b>	Zoom Meeting
<b>Cost:</b>	<b>FREE</b>

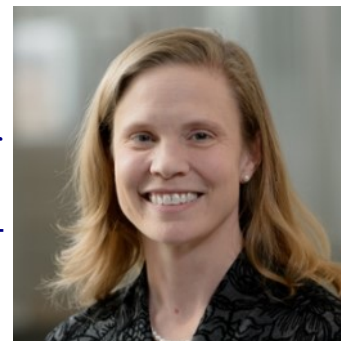
(To donate or learn about the local section student's scholarship program, please go to [this page](#).)

[Click to View Event Summary and Register](#)



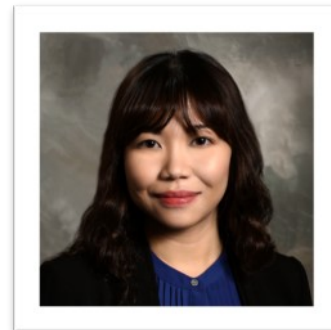
### Biography:

**Dr. Jennifer Dunn** is an Associate Professor of Chemical and Biological Engineering at Northwestern University. She holds a courtesy appointment in Mechanical Engineering. Jennifer is Associate Director of the Northwestern-Argonne Institute of Science and Engineering and the Associate Director of Northwestern's Center for Engineering Sustainability and Resilience. Jennifer studies emerging technologies, their energy and environmental impacts, and their potential to influence greenhouse gas and air pollutant emissions, water consumption, and energy consumption at the economy-wide level.



Cont. on Page 4

## Chair's Corner



November is always an exciting month for AIChE. This year, the Annual Meeting is organized in hybrid format for the first time, which brings the first in-person national conference since the Annual Meeting in 2019. I am very excited for both the in-person meeting in Boston on November 7 – 11 and the virtual meeting in the following week on November 15 – 17, since this is the first step for us to explore the “new normal” and taking advantages of what we learn from the virtual experience to make the conference more accessible. The Chicago Section is working closely with the National conference team for support and learning their know-how to implement in our own Midwest Regional Conference (MRC-14).

The MRC committee has been making great progress since the last newsletter. The conference website is live and accessible from both AIChE National (<https://www.aiche.org/conferences/midwest-regional-conference/2022>) and Chicago Section websites (<https://www.aiche.org/community/sites/local-sections/chicago/mrc14-2022>). The quality of the conference depends greatly on the technical program. Every year, we work on bringing attention to the current trending topics in both academia and industry. Call for Abstracts is currently open until December 3<sup>rd</sup>, 2021. Please consider submitting an abstract for an oral presentation or poster and help us put the words out to your colleagues and potential speakers. Presenting is an opportunity to demonstrate your new and exciting accomplishment and build your brand within the technical community. Besides, volunteering in the various committees also brings value in networking and gaining leadership experience. Volunteering for MRC as a session chair was what led me to my involvement with the Chicago Section, and this has been a continued development for me both professional and personally. Please reach out to Conference Chair, Dr. Matthew Walters at [mwalters@exponent.com](mailto:mwalters@exponent.com), and Conference Co-Chair, Dr. Jessica Morris at [jmorris@exponent.com](mailto:jmorris@exponent.com), if you would like to get involved with the planning process.

In this newsletter, I would like to bring to your attention the award and scholarships offered by our Section. 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 is one of the highest honors a distinguished chemical engineer can receive is our AIChE Chicago Section Thiele award. Nominations are due April 1, 2022. Please consider nominating a deserving engineer for this prestigious award. You can contact Thiele Committee Chair, Dr. Jeff Zalc at [zalc@iit.edu](mailto:zalc@iit.edu), for nomination form and additional information.

We also offer student scholarships every year. This is an effort to encourage the next generation of engineers to enter and continue their education in our field and practice chemical engineering as a professional. For this purpose, the AIChE Chicago Section has established a Scholarship, available to currently enrolled or planning to enroll in an ABET credited college or university of their choice in a chemical engineering discipline (undergraduate and senior high school students). The scholarship is also available to the immediate family of AIChE Chicago section members. Information for this is available on our website and in this newsletter. We also appreciate any donation made to the scholarship fund in support of our Section core mission in promoting education.

Lastly, I would like to thank the volunteers who have worked tirelessly to put together the first two meetings this year and planning MRC. November will be the last meeting of 2021, so I hope to see you to recap the year and hopefully receiving suggestions for 2022 activities.

Ha Dinh

AIChE Chicago Section Chair

AIChE Senior Member

## 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? Volunteering with the Chicago Section of AIChE is such an opportunity. While you're learning new skills, your professional 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.

Volunteers are needed to help with:

- \* Programming – arrange speakers for monthly meetings, and arrange catering and venues
- \* Logistics – arrange catering and venues
- \* Newsletter Editor – prepare and publish ten monthly newsletters
- \* Newsletter Contributions – write meeting summaries, contribute photos, and more
- \* Engineering Outreach – coordinate three annual K-12 outreach events with high schools and colleges

- \* Professional Development and Sponsorship – arrange companies to sponsor pre-meeting talks to help fund student dinners
- \* Awards and Scholarship Committees – Review applications for local Section award and scholarships
- \* Midwest Regional Conference – many opportunities including programming, logistics, website, advertising, sponsorship, high school outreach, poster session and more!
- \* Young Professionals – plan socials and programming for young professionals (under 35)

If you are interested in any of these positions, please contact us [aichechicago@gmail.com](mailto:aichechicago@gmail.com).

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



**Cont. from Page 1**

## November Meeting information

Particular technologies of interest include biofuels and bioproducts, automotive lithium-ion batteries, waste plastics recycling and utilization, advanced manufacturing, and fuels and chemicals made from natural gas liquids. Techno-economic, life cycle, and material flow analyses are primary tools in her research. Furthermore, she applies machine learning techniques to gain insights into land use and land use change, which drive the sustainability debate surrounding biofuels. Jennifer holds a Ph.D. in Chemical Engineering from the University of Michigan where she was introduced to life cycle analysis through earning her Master's degree in Sustainable Chemical Engineering Systems. Her undergraduate degree in Chemical Engineering is from Purdue University. Prior to joining Northwestern, she led the Biofuels Analysis group at Argonne National Laboratory and managed Argonne's relationship with DOE's Bioenergy Technologies Office. She has also worked at URS Corporation (now AECOM) including a one-year secondment in Brussels, Belgium and at U.S. EPA Region 5 in Chicago. She is raising her two sons with her husband near where she grew up; her eldest son is now attending the high school that is her alma mater.

### ***Abstract:***

#### **Guideposts and Guardrails: Analysis to Guide Energy and Material Transitions**

The transition away from fossil resources for producing fuels and chemicals is underway with initiatives and policies that support electrification, biofuels, and recycling of plastics. This presentation will describe the use of three analytical tools - life cycle analysis (LCA) coupled with scenario analysis, social LCA, and material flow analysis – to establish guideposts and guardrails towards reducing fossil energy consumption and greenhouse gas emissions from energy and material systems. These tools are applied to three case studies to illustrate how they can inform policy development, provide warning of potential negative effects of new technologies, and guide researchers towards innovations that will have impact. The first examines use of LCA coupled with scenario analysis to explore the extent to which co-deploying biofuels and electrification in hard-to-decarbonize sectors such as marine, aviation, and heavy duty transportation can increase greenhouse gas reductions compared to an approach that prioritizes electrification alone. Sweeping electrification strategies have implications for the communities that mine the metals used in batteries. The second case study explores whether we can quantify these impacts with social LCA to help guide policy and technology development. The final case study examines how material flow analysis of polyurethane can point towards opportunities to reduce fossil fuel consumption through recycling and increasing bio-based content for this type of plastics. Taken together, these case studies illustrate the role of a suite of sustainability analyses that can guide and support public and private sector efforts to decarbonize.



## Young Professionals October Social Summary

For the first in-person social event in over a year, the YPs visited a familiar haunt: Rosemont's Parkway Bank Park entertainment district.

The night started innocently enough with dinner at Five Roses Pub. There were 5 attendees, one for each rose, and after reconnecting with some old friends and making some new ones, it was time to see who would wilt first. The moment of truth was at hand, the stakes ran high, and we made our way through the night to 5050 River Road where perilous evil resides.

It was the 13th Floor Haunted House! Five in, five out, but rosy no more. We hope you join us next time; it won't be a bore!

Young Professionals Committee



## NOMINATIONS REQUESTED FOR THE 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 \$1,000 honorarium presented at a monthly section 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 01, 2022**.

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

To nominate, please contact:

Jeffrey Zalc

bp Solutions, P&O

phone: 630.881.5478

email: [jeffrey.zalc@bp.com](mailto:jeffrey.zalc@bp.com)

## ***Congratulations Prof. Ramkrishna!***

### [Doraiswami Ramkrishna of Purdue University to Receive AIChE's Walker Award for Chemical Engineering Literature](#)

The recipient of the 2021 William H. Walker Award is Doraiswami Ramkrishna, The Henry Creighton Peffer Distinguished Professor of Chemical Engineering at Purdue University.

First presented in 1935, the William H. Walker Award for Excellence in Contributions to Chemical Engineering Literature is named for William Hultz Walker (1869–1934), a founder of the chemical engineering discipline who in 1916 established the School of Chemical Engineering Practice at the Massachusetts Institute of Technology. The Walker Award is presented to a member of AIChE who has made outstanding contributions to the field's literature. The award is sponsored by John Wiley & Sons.



Dr. Ramkrishna is being honored “for original and seminal contributions to the chemical engineering literature on the application of mathematics to chemical, particulate, and biological processes.” He is lauded for his development of novel mathematical frameworks with wide applications to chemical and biochemical reaction engineering, particulate systems, biological systems modeling, and, more recently, personalized medicine for the treatment of diseases such as cancer.

Dr. Ramkrishna — known to colleagues in the community as Ramki — earned his B. Chem Eng degree at the University of Bombay (now the Institute of Chemical Technology) and his PhD from the University of Minnesota. He returned to India to join the faculty at the Indian Institute of Technology before joining the Purdue faculty in 1976.

A Fellow of AIChE and the American Institute for Medical and Biological Engineering, Ramkrishna's earlier honors from AIChE include the Alpha Chi Sigma Award for Chemical Engineering Research, the R. H. Wilhelm Award for Chemical Reaction Engineering, and the Thomas Baron Award from the Particle Technology Forum. Additional books written by Ramkrishna include *Linear Operators* (with Amundson) and *Cybernetic Models* (with H-S Song). Ramkrishna was elected to both the U.S. and Indian National Academies of Engineering.

## **Congratulations Prof. Lueptow!**

Professor Richard M. Lueptow is the winner of the AIChE's PTF "Dow Particle Processing Recognition Award".

The award recognizes a Particle Technology Forum member who has made significant contribution to the science and technology of particle processing in its commercialization, and who has shown leadership in the engineering community.

Professor Richard M. Lueptow is Senior Associate Dean at the McCormick School of Engineering and Applied Science, Co-Founder of the Master of Product Design and Development Program, Professor of Mechanical Engineering and of Chemical & Biological Engineering (by courtesy), and former Charles Deering McCormick Professor of Teaching Excellence at Northwestern University. He received his BS in engineering (1978) from Michigan Technological University and his master's degree (1980) and doctorate (1986) in mechanical engineering from the Massachusetts Institute of Technology. He has five years of product development experience in the biomedical industry and over three decades of academic experience on the faculty at Northwestern University. His research interests and expertise range from fundamental flow physics to water purification to dynamical systems. His current research focuses on granular flow dynamics and molecular simulations. He has published over 170 journal papers and six patents. He has received numerous teaching and research awards and is a Registered Professional Engineering, as well as a Fellow of both the American Physical Society and the American Society of Mechanical Engineers.



**November is National American Indian Heritage Month** The Library of Congress, National Archives and Records Administration, National Endowment for the Humanities, National Gallery of Art, National Park Service, Smithsonian Institution and United States Holocaust Memorial Museum join in paying tribute to the rich ancestry and traditions of Native Americans. [Read More »](#)

**DR. WENDY F. SMYTHE: 2019 PROFESSIONAL OF THE YEAR / HAIDA OF THE EAGLE MOIETY AND OF THE SDAST' AAS (FISH EGG) HOUSE**



“ Dr. Smythe has come to understand the significant impact — both good and bad — that policy can have on paving the way for more Native students in STEM fields. ”

[Learn More about Dr. Smythe »](#)



AMERICAN INDIAN SCIENCE  
AND ENGINEERING SOCIETY

## ***New Book from Arastoopour, Gidaspow, and Lyczkowski***

### Transport Phenomena in Multiphase Systems

This volume fills the need for a textbook presenting basic governing and constitutive equations, followed by several engineering problems on multiphase flow and transport that are not provided in current advanced texts, monographs, or handbooks. The unique emphasis of this book is on the sound formulation of the basic equations describing multiphase transport and how they can be used to design processes in selected industrially important fields. The clear underlying mathematical and physical bases of the interdisciplinary description of multiphase flow and transport are the main themes, along with advances in the kinetic theory for particle flow systems.

The authors represent a combination of nearly two centuries of experience and innovative application of multiphase transport representing hundreds of publications and several books. This book serves to encapsulate the essence of their wisdom and insight, and:

Provides a lucid explanation of how the multiphase transport equations arise, including multiphase kinetic theory

Describes gas-liquid and gas-solid flows including fluidized bed systems

Explains applications to several chemical and energy conversion processes based on fluidized bed systems, including blood flow analysis, carbon dioxide (CO<sub>2</sub>) capture, pharmaceutical production, volcanic eruptions, polymerization process and wind turbine performance

Dr. Hamid Arastoopour is Henry R. Linden Professor of Engineering and Director of the Wanger Institute for Sustainable Energy Research (WISER) at Illinois Institute of Technology, Chicago, IL; Dr. Dimitri Gidaspow is Distinguished University Professor in the Department of Chemical and Biological Engineering at Illinois Institute of Technology, Chicago, IL; Dr. Robert W. Lyczkowski is a Chemical Engineer in Darien, IL. Margaret M. Murphy is Assistant Director of the Wanger Institute for Sustainable Energy Research (WISER) at Illinois Institute of Technology, Chicago, IL.

## ***Upcoming AIChE Conferences, Meetings and Webinars***

<b>AIChE Conferences</b>	
Nov 7-11, 2021 (in-person)	<a href="#">2021 AIChE Annual Meeting, Boston, MA</a>
Nov 15-19, 2021 (virtual)	
Nov 30 - Dec 2, 2021 (virtual)	<a href="#">Center for Hydrogen Safety Asia-Pacific Conference</a>
Dec 1-3, 2021 (virtual)	<a href="#">4th Water Conference</a>
Dec 3, 2021 (virtual)	<a href="#">8th International Conference on Stem Cell Engineering 2021</a>
Dec 5-7, 2021 (virtual)	<a href="#">2nd Optogenetic Technologies and Applications Conference</a>
Dec 6-7, 2021 (virtual)	<a href="#">4th Food Innovation and Engineering (FOODIE) Conference</a>





MRC-14  
March 1-2, 2022

The AICHE Midwest Regional Conference (MRC) continues into its 14th year. Organized by the [Chicago Local Section](#) and hosted at the [University of Illinois Chicago \(UIC\)](#), MRC-14 provides an opportunity for engineers and scientists in the region and beyond to learn about new technologies and refresh their knowledge, as well as network with peers. Abstracts may be submitted for the following topics:

- Advances in Refining & Biorefining Technology
- Bioengineering & Nanotechnologies
- Catalysis & Reaction Engineering
- Energy Storage
- Environmental Compliance & Remediation
- Fluid Properties, Fluid Dynamics, & Transport Phenomena
- Green Engineering & Climate Solutions
- Machine Learning & Optimization
- Polymer Science
- Process Safety & Occupational Health
- Other Emerging Topics in ChE

## Submission Timeline

**Abstract Submission Deadline:** Friday, December 3, 2021

**Acceptance Status:** Monday, January 10, 2022

**Draft Presentation or Poster Submission:** Tuesday, February 22, 2022

[Submit Abstract](#)

MRC is currently scheduled to be held *in-person* at UIC. Any changes to conference format will be announced as early as possible. The planning committee is continuing to monitor local, state, and federal guidance related to in-person conferences. COVID-19 safety protocols will be provided in the weeks leading up to the conference.



**2022 AICHE Midwest Regional Conference**  
**March 1-2, 2022**  
**Chicago, IL**

*Hosted by University of Illinois Chicago (UIC)*  
*Organized by Chicago Local Section of AICHE*

### **Volunteers needed for 2022 MRC**

The 2022 AICHE Midwest Regional Conference organization is well underway. We are still seeking volunteers for several positions:

**Onsite Coordinator:** *responsible for (i) printing of name badges and (ii) creating, printing, and displaying any signage required for the conference.*

**Professional Development:** *Issue PDH (continuing education) certificates, as well as manage associated sign-in/out sheets.*

**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 get to know your peers in your interest area, as well as expand your network of friends. 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 position, please contact Matt Walters at [mwalters@exponent.com](mailto:mwalters@exponent.com). More information is available at the conference website:

<https://www.aiche.org/conferences/midwest-regional-conference/2022>

## 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>



### AICHE CHICAGO SECTION INFORMATION

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<https://www.facebook.com/AIChEChicagoSection>

<https://www.linkedin.com/groups/4538581>

<https://www.aiche.org/community/sites/local-sections/chicago>

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#### AICHE Chicago Section Officers/Volunteers

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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

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