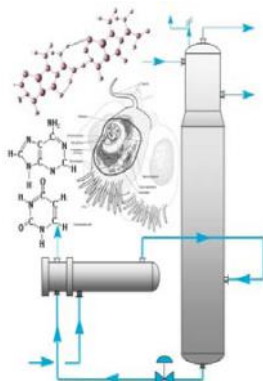


March Newsletter

Chicago Section

www.aiche.org/Chicago

March 2020



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AIChE
MIDWEST
REGIONAL
CONFERENCE

Midwest Regional Conference

March 11-12, 2020

Illinois Institute of Technology
Chicago, IL

Keynote Speakers:

- **Matthew Tirrell** (Dean, Pritzker School of Molecular Engineering at University of Chicago)
- **Michael Graff** (CEO of Air Liquide)
- **Keith Couch** (Senior Director at Honeywell UOP)
- **Jeff Garascia** (CIO of Marmon Holdings)
- **Ed Nam** (Regional Administrator, EPA Region 5)

AIChE Chicago March / MRC Dinner Keynote

Ed Nam

Director of our Land, Chemical and
Redevelopment Division, EPA

Thursday March 12, 2020

Illinois Institute of Technology

Address: Hermann Hall, 3241 S Federal St, Chicago, Illinois 60616

5:30-6:30 PM: Registration, Networking

6:30-7:30 PM: Dinner

7:30-7:45 PM: Section Announcements

7:45-9:00 PM: Technical presentation, Q&A

Registration and Information: <http://www.cvent.com/d/6nqp8p>

If you are registered for the conference, check your registration if you already paid for the Dinner Meeting!



Chair Corner

March brings us two things that I look forward to each year – warmer weather and the AIChE Midwest Regional Conference on March 11th and 12th ! The AIChE MRC is in its twelfth year, having been started in 2008 with the same format that is organized today. The AIChE MRC by far the largest event that the Chicago Section leads independently from AIChE Global using local midwestern resources. There is still time to register for this great conference hosted by the Illinois Institute of Technology!



The MRC is a huge endeavor currently chaired by Jeff Zalc with the support of many, many volunteers under the direction of the Programming Chair, Don Chmielewski, and the General Arrangements Committee Chair, Pat Shannon. I would also like to recognize Dennis O'Brien for his role as the past MRC Chair and helping to get us organized for this year's MRC. Dennis was recently awarded a 2020 Shining Star Award for his substantial contributions to both the MRC and the Chicago Section.

The Chicago Section is deeply grateful for the generous support of the MRC sponsors. These sponsors make it possible for us to sustain the MRC planning into future years and to pass down the local expertise for conference planning to a new generation of volunteering engineers. To the companies and organizations that have supported us, we sincerely thank you.

March also brings us to a point of identifying new volunteers to serve on the Chicago Section's Board of Directors. AIChE Chicago Section members may nominate one candidate for each open officer and director position: Chair-Elect, Vice-Chair of Programming, Treasurer, Secretary, and Director-at-Large.

The nomination deadline is March 18th ; please submit a nomination form here:

<https://form.jotform.com/50354560774154>

I hope that I get to see many of you at the AIChE MRC next week and that you might consider actively contributing to next year's MRC or becoming more involved in the Chicago Section's volunteer efforts!

Jarad L. Champion, P.E., BCEE
AIChE Chicago Section Chair
AIChE Senior Member

MRC Dinner Keynote March Dinner Meeting

Ed Nam

***Director of our Land, Chemical and
Redevelopment Division, EPA***

Biography:

Dr. Edward Nam has been the director of the Land, Chemicals and Redevelopment Division since July 2019. He had previously been the director of Region 5's Air and Radiation Division since 2016. Ed's career with EPA started in 2003. Prior to joining Region 5, he served as the director of the Light-Duty Vehicles and Small Engines Center and the Air Quality and Modeling Center in the Office of Transportation and Air Quality in Ann Arbor, Mich. In these roles, he managed the development of the motor vehicle emissions simulator and the mobile source emissions inventory model, and was a lead for two light-duty vehicle greenhouse gas rules. He also served as the EPA representative to the United Nations international harmonization of vehicle standards in Geneva, Switzerland. Prior to joining the EPA, Ed was a research scientist at Ford Motor Co. Ed earned his master's and doctoral degrees in physics from the University of Michigan, and a Bachelor of Arts in physics from the University of Pennsylvania.



Talk and Abstract: U.S. EPA Priorities

EPA Region 5 Administrator Kurt Thiede will discuss agency and regional priorities. A major focus for the administration is emerging contaminants – with a significant national focus on PFAS. Mr. Thiede will highlight EPA's PFAS Action Plan and the actions Region 5 and its partner states are taking to implement the plan. Although new and emerging contaminants are one of the pressing issues of our day, pollution prevention on a broader scale continues to be a priority for the administration through tools like the Toxic Release Inventory helping curb pollutants from entering communities. Beyond specific program initiatives, Mr. Thiede will share some of the ways he and Administrator Wheeler are working to improve the way EPA interacts with the regulated community and the people it serves.

Where: ***Illinois Institute of Technology***

Location: ***Hermann Hall, 3241 S Federal St, Chicago, Illinois 60616***

February Meeting



MIDWEST REGIONAL CONFERENCE 2020 KEYNOTE SPEAKERS



Keynote Speakers

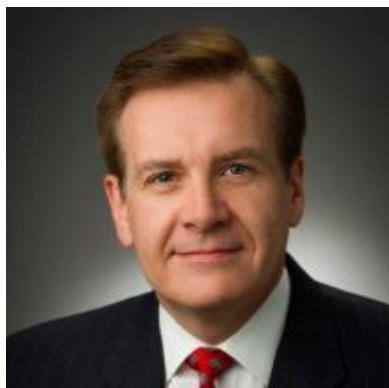


Jeff Garascia

Chief Innovation Officer, Marmon Holdings

Jeff Garascia has been the Chief Innovation Officer of Marmon Holdings since July 2017. In this position, Jeff advises presidents of Marmon's ten operating sectors to help stimulate product innovation in their businesses, create new ideas and approaches, and identify innovation talent. Additionally, he is responsible for various "think tank" initiatives, the Marmon Innovation Council, and the Marmon Patent Society. Prior to this Jeff was the Senior Vice President, Growth & Innovation for Marmon Beverage Technologies, leading strategy and innovation teams in areas including engineering, product management, marketing, and consumer research, as well as the research and development center in India. Before joining Beverage Technologies in 2013, Jeff spent seven years with Scotts Miracle-Gro in senior management positions in global strategy, R&D, and business development. He previously was with the Booz, Allen & Hamilton consulting firm for eight years in progressive roles culminating in his appointment as a Principal in the firm. Jeff earned a B.S. in Electrical Engineering from the University of Houston and an M.S. and Ph.D. in Industrial Engineering, both from the University of Cincinnati.

MIDWEST REGIONAL CONFERENCE 2020 KEYNOTE SPEAKERS,



Michael J. Graff,

Chairman, CEO and President, American Air Liquide

Executive Vice President, Air Liquide Group

Mike Graff joined Air Liquide in 2007 and currently serves as executive vice president and executive committee member of Air Liquide S.A., chairman and chief executive officer of American Air Liquide Holdings, Inc., chairman of the board of Airgas, and board member of Air Liquide Sante Intl. As executive vice president of the Group's Americas Hub, Graff leads business operations for North America, South America, Central America, and the Caribbean from its Houston, Texas headquarters. He is also the global chairman of the Group's Electronics business line and has oversight for safety and industrial systems worldwide. Graff is a senior executive with over 30 years of experience in the energy, chemicals and polymers industries across the Americas, Asia, and Europe. He began his career with Amoco and BP, plc. and went on to serve as president or chief executive officer of several global chemical and polymer businesses. Graff serves on the board of directors of Westlake Chemical Corporation and is a former director of the Lubrizol Corporation. He also serves on a number of industry and civic boards including as an executive committee member of the American Chemistry Council and as a principal of the Bipartisan Policy Center's American Energy Innovation Council. Graff was a 2016 recipient of the Illinois Institute of Technology's Alumni Association's Professional Achievement Award and is a member of both the University's Board of Trustees and the Armour College of Engineering Board of Advisors. He has served on the New Directions Industrial Advisory Board of Purdue University's department of Chemical Engineering, where he has also been recognized as a recipient of the University's Outstanding Chemical Engineer and Distinguished Engineering Alumni awards. He also serves on the board and executive committee of Children at Risk, and is an active member of The Baker Institute of Rice University, Junior Achievement of Southeast Texas, and the Barbara Bush Literacy Foundation. Graff holds a bachelor's degree in chemical engineering from the Illinois Institute of Technology and a master's degree in chemical engineering from Purdue University. He studied business at the University of Chicago and completed executive management programs at the Wharton School of the University of Pennsylvania, the University of Cambridge, and the Stanford University Law School. Along with his family, Graff participates in a variety of community service programs and activities. He is a strong advocate for STEM education, literacy and youth athletics.

MIDWEST REGIONAL CONFERENCE 2020 KEYNOTE SPEAKERS



Matthew Tirrell

Professor and Dean Pritzker School of Molecular Engineering, University of Chicago

Matthew Tirrell's research has been in the fields of polymer interfaces, dynamics, fluid phase behavior and nanomedicine. He is particularly known for his work on polymer brushes, surface force measurement, peptide amphiphiles and polyelectrolyte complex phase behavior. In 2011, Matthew Tirrell was appointed as the founding Pritzker Director and Dean of the Faculty of the Institute for Molecular Engineering and established the first University of Chicago engineering program, which he continues to oversee (now the Pritzker School of Molecular Engineering). Professor Tirrell simultaneously served as Deputy Laboratory Director for Science (September 2015 - April 2018) and Chief Research Officer (January 2017 - March 2018) at Argonne National Laboratory. Immediately prior to joining the University of Chicago, he was the Arnold and Barbara Silverman Professor and Chair of Bioengineering at the University of California, Berkeley, with additional appointments in chemical engineering and materials science & engineering, as well as a Faculty Scientist appointment at the Lawrence Berkeley National Laboratory. Dr. Tirrell completed ten years as Dean of Engineering at the University of California, Santa Barbara on June 30, 2009. From 1977 to 1999, he was on the faculty of Chemical Engineering and Materials Science at the University of Minnesota, where he served as department head from 1994 to 1999. Tirrell received a B.S. in Chemical Engineering at Northwestern University in 1973 and a Ph.D. in 1977 in Polymer Science from the University of Massachusetts. He has co-authored about 400 papers and one book, has supervised about 100 Ph.D. students and 50 postdoctoral researchers. Professor Tirrell is a member of the National Academy of Engineering, the National Academy of Sciences, the American Academy of Arts & Sciences and the Indian National Academy of Engineering, and is a Fellow of the American Institute of Medical and Biological Engineers, the AAAS, and the American Physical Society.

MIDWEST REGIONAL CONFERENCE 2020 KEYNOTE SPEAKERS,



Keith A. Couch

Senior Director, Technology Sales and Integrated Projects

Honeywell UOP, Des Plaines, Illinois, USA

Keith A. Couch is Senior Director of global Technology Sales and Integrated Project Solutions (IPS) teams within UOP's Petrochemicals & Refining Technologies (PRT) business. Keith's team spans the US, UK, India, China and Malaysia offices. The focus of the organization is to drive improved client value creation and business operations for both discrete and integrated projects. He has over 28 years of international experience that has included Manufacturing, R&D, Field Service, Technical Service, Technical Sales and Business Management. Keith is recognized as a technologist and author with 27 patents and 18 industry publications. He holds a B.S. degree in Chemical Engineering from Louisiana Tech University and a Master of Business Administration from the University of Chicago, Booth School of Business.

Conference Sponsors

The Chicago Section of the AIChE is grateful for the generous support of our Conference Sponsors!

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BakerRisk

Chemstations

The Climate Solutions Community

REACT Core Facility

Reactor Resources—Catalyst Sulfiding

WISER

YP Event in February

YP Social: Bowling

February's Young Professionals Social is usually a cacophony of bumper cars, basketball, and lacrosse better known as the sport of Whirlyball. This year, circumstances forced a change that led the YPs down a new path (exploring new paths is fun!). This year's February YP social was a free-for-all, retro style BOWLERAMA. 11 ChemEs showed up at Fitz's Spare Keys in downtown Elmhurst, Illinois where six quiet bowling lanes are tucked away.



Attendees enjoyed free bowling and free pizza as they socialized in an old-timey sort of way (face-to-face in a bowling alley without screens that dictate when it's your turn or automatically keep score for you, perhaps refreshing in these days of hyperconnectivity). The YP Committee thanks everyone who came out and made this event successful. Also, a special congratulations to those that displayed serious bowling skills and topped 100 points - way to go!

YP MRC Social, March 11th 7:30-9:30PM

AIChE is hosting its 12th annual Midwest Regional Conference on Mar 11-12 at the Illinois Institute of Technology. YP Chicago is hosting a social to go along with it at Fat Fish Bar and Grill and we hope to see you there. Appetizers and soft drinks will be provided courtesy of our sponsor, Reactor Resources- Catalyst Sulfiding.

Please RSVP to Ruben at rubenbarajas321@gmail.com by March 10th, at the latest.

Event Details

What: MRC Social

Where: Fat Fish Bar and Grill

Address: 234 W 31st St, Chicago, IL 60616, +1(312) 842-9200

When: Wednesday, March 11th 7:30-9:30PM

Cost: Free

Sponsored by:



DuPage STEM Expo

AIChE was present at the 36th annual DuPage Area STEM Expo at the Illinois Institute of Technology Rice Campus. The event aimed to expose young children and their parents to different areas of STEM through any means possible including LEGOs, robots, drone demonstrations, bees, slime, cryogenics, and a Van der Graaf generator (makes your hair stand on end, also fun if you like getting shocked). AIChE relied on its trusty poster board, industry personal protective equipment items, and the overflowing charisma of ChemE volunteers (and candy) to educate the public about the chemical engineering discipline and possible career paths within it. Thank you to all of the volunteers that came out and shared their insights regarding ChemE. Special thanks to Sanaz for taking awesome pictures.



Regards,
AIChE Young Professional Committee



March 11 - 12, 2020
IIT, IL
2020 Midwest Regional Conference

Day 1 - Wednesday March 11, 2020, Track 1

7:30	10:30	Registration (Open all day) & Breakfast
8:15	8:30	Chairman's Introduction
8:30	9:30	Keynote: Jeff Garascia, Chief Innovation Officer, Marmon Holdings
9:30	9:45	Coffee Break
9:45	11:30	Session I: Catalysis and Reaction Engineering I Chair: Malek Ibrahim (UOP/Honeywell)
9:45	10:05	Improved Catalyst Selectivity and Longevity Using Atomic Layer Deposition Zheng Lu, Christopher L. Marshall (Argonne National Laboratory), Arrelaine Dameron (Forge Nano), Christopher P. Nicholas, Leigh M. Abrams, Paul T. Barger (UOP/Honeywell)
10:05	10:25	Site-averaged kinetics for catalysts on amorphous supports: an importance learning algorithm Craig Vandervelden (University of California, Santa Barbara)
10:25	10:45	Deciphering the hidden complexity of heterogenous nanoparticles Cecilia Gentle, Yuanheng Wang, Tyler N. Haddock, Conner P. Dykstra, Renske M. van der Veen (University of Illinois at Urbana-Champaign)
10:45	11:05	Investigating Isobutane Dehydrogenation over Molybdenum Oxides and Sulfides Emily Cheng, Justin Notestein (Northwestern University)
11:05	11:25	Enhancing Photocatalytic Activity of BODIPY-based Porous Organic Polymers (POPs) through Post-Synthetic Modification for Decontamination of a Sulfur Mustard Simulant Ahmet Atilgan, Mustafa M Cetin, Yassine Beldjoudi (Northwestern University)
11:30	12:30	Lunch,

Day 1 - Wednesday March 11, 2020, Track 1		
12:45	1:45	Keynote: Matthew Tirrell Pritzker School of Molecular Engineering, University of Chicago
1:45	2:00	Coffee Break
2:00	3:45	Session II: Catalysis and Reaction Engineering II Satish Parulekar (Illinois Institute of Technology)
2:00	2:20	A New Catalytic Way to Make Hydrogen Upgrades Achievable Isaac Niekamp (Johnson Matthey)
2:20	2:40	Grafting metal complexes onto amorphous supports: from elementary steps to catalyst site populations via kernel regression Salman A. Khan (University of California, Santa Barbara), Baron Peters (University of Illinois at Urbana-Champaign)
2:40	3:00	Core-Shell SiO₂/Nb₂O₅ and SiO₂/TiO₂ for Bronsted Acid Catalysis Andrew Wolek, Justin M. Notestein (Northwestern University)
3:00	3:20	Reactive, High-Valent Metal-Oxo Species Incorporated within Metal-Triazolate Frameworks Andrew Rosen, Justin M. Notestein, Randall Q. Snurr (Northwestern University)
3:20	3:40	The Fate of the Hole Scavenger in Plasmon-Excitation-Mediated Chemistry Varun Mohan, Eric Wu, Jaeyoung Heo, Prashant K. Jain (University of Illinois at Urbana-Champaign)
3:45	4:00	Coffee Break
4:00	5:45	Session II: Process Engineering and Optimization Chair: Ha Dinh (UOP/Honeywell), Co-Chair: Norah Ghazinoor (UOP/Honeywell)
4:00	4:20	Microkinetic Model Reduction and Reactor Optimization for Oligomerization Reactor Design in CISTAR Kanishka Ghosh, Alexander Dowling (University of Notre Dame)
4:20	4:40	Personalized Medicine for In-vitro Fertilization Procedure using Modeling and Optimal Control Apoorva Nisal (University of Illinois at Chicago) Urmila Diwekar (Vishwamitra Research Institute)
4:40	5:00	Multi-Rate Data-Driven Models for Lactic Acid Fermentation - Parameter Identification and Prediction Jingwei Gan, Satish J. Parulekar (Illinois Institute of Technology)
5:00	5:20	Integration of Molecular Simulations and Computer-Aided Design to Enable Novel Azeotropic Separations Bridgette Befort, Edward Maginn, Alexander Dowling (University of Notre Dame)
5:20	5:40	Parametric Sensitivity and Runaway in Fixed-Bed Reactors: Example of Methanol Selective Oxidation over Pt-Bi Catalysts Yang Xiao (Purdue University)
6:00	7:30	Poster Reception, Gallery Lounge Session Chair: Adam Kanyuh, UOP

March 11 - 12, 2020

IIT, IL

2020 Midwest Regional Conference

Day 1 - Wednesday March 11, Track 2

7:30	10:30	Registration (Open all day) & Breakfast
8:15	8:30	Chairman's Introduction
8:30	9:30	Keynote: Jeff Garascia, Chief Innovation Officer, Marmon Holdings
9:30	9:45	Coffee Break
9:45	11:30	Session I: Industrial Crystallization I Chair: Meenesh Singh (University of Illinois at Chicago)
9:45	10:05	A Industrial Crystallization: Challenges and Opportunities Nandkishor K. Nere (AbbVie)
10:05	10:25	Towards Design of Synthetic Routes of Molecular Crystals and Co-crystals using Molecular Simulations and Machine Learning Approach Santanu Chaudhuri (Argonne National Laboratory)
10:25	10:45	Computer-aided-molecular design for Crystallization Urmila Diwekar (Vishwamitra Research Institute), Anish Dige, Meenesh Singh (University of Illinois at Chicago)
10:45	11:05	Screening of Polymorphs and Measurement of Growth Rates of L-Histidine at Controlled Supersaturation using Continuous-Flow, Microfluidic Device Paria Coliaie, Meenesh Singh (University of Illinois at Chicago)
11:05	11:25	Micellar structures, stepwise thinning and nanoscopic thickness variations in foam films formed by aqueous sodium naphthenate solutions Chrystian Ochoa, Vivek Sharma (University of Illinois at Chicago) Shang Gao, Samanvaya Srivastava (University of California at Los Angeles)
11:30	12:30	Lunch,

Day 1 - Wednesday March 11, Track 2		
12:45	1:45	Keynote: Matthew Tirrell Pritzker School of Molecular Engineering, University of Chicago
1:45	2:00	Coffee Break
2:00	3:45	Session II: Industrial Crystallization II Aditya Prajapati (University of Illinois at Chicago)
2:00	2:20	Continuous Crystallization: Case Studies in Pharma Applications Manish S Kelkar, Moussa Boukerche, Daniel Pohlman, Nandkishor Nere (Abbvie Inc)
2:20	2:40	On application to population balances in continuous crystallization Christopher Burcham (Eli Lilly and Company)
2:40	3:00	Exploring nucleation mechanism and polymorph selection in nucleation of glycine from solution Pelin Bulutoglu, Doraiswami Ramkrishna (Purdue University)
3:00	3:20	Identification of Polymorph Specific Molecular Interactions during the Process of Crystallization Anish Dighe, Meenesh Singh (University of Illinois at Chicago)
3:20	3:40	Three-dimensional supercrystals formed by controllable oversaturation: facts and artefacts. Elena Shevchenko, Byeongdu Lee (Argonne National Laboratory) Matthew Pelton (University of Maryland, Baltimore County)
3:45	4:00	Coffee Break
4:00	5:45	Session III, Biomedical Engineering
4:00	4:20	A Novel Microfluidic Device to Study Intestine-Bacteria-Drug Metabolism Chengyao Wang, Thao Dang, Jasmine Baste, Daniel Martin, Shanie Scoble, Abhinav Bhushan (Illinois Institute of Technology)
4:20	4:40	Drainage of Protein Foams and Foam Films Lena Hassan, Chenxian Xu, Vivek Sharma (University of Illinois at Chicago)
4:40	5:00	Development of Sprayable, Thermoreversible Hydrogels for Burn Wound Applications Riannon Smith, Nicole Brogden, Jennifer Fiegel (University of Iowa)
5:00	5:20	Lost in Translation: Engineering ribosomes with combinations of active site mutations Alyse DeFoe, Anne E d'Aquino, Tasfia Azim, Adam J Hockenberry, Michael C Jewett (Northwestern University), Kim Hoang (Johnson and Whales University)
6:00	7:30	Poster Reception, Gallery Lounge Session Chair: Adam Kanyuh, UOP

March 11 - 12, 2020

IIT, IL

2020 Midwest Regional Conference

Day 1 - Wednesday March 11, Track 3

7:30	10:30	Registration (Open all day) & Breakfast
8:15	8:30	Chairman's Introduction
8:30	9:30	Keynote: Jeff Garascia, Chief Innovation Officer, Marmon Holdings
9:30	9:45	Coffee Break
9:45	11:30	Session I: Transport Phenomena chairs: Joel Paustian (Honeywell), Ehsan Akbari Fakhrabadi (University of Toledo)
9:45	10:05	Pinch-off dynamics, shear and extensional rheology, and dispensing of polymer-surfactants complexes Carina Martinez, Vivek Sharma (University of Illinois at Chicago)
10:05	10:25	Flow of biomass in a compression screw feeder Ehsan Akbari Fakhrabadi, Matthew Liberatore (University of Toledo), Jonathan Stickel (National Renewable Energy Laboratory)
10:25	10:45	Rheology of Bogger Fluids and Elastic Instabilities Alexander Kubinski, Fahed Albreiki, Vivek Sharma (University of Illinois at Chicago), Prerana Rathore (University of Massachusetts at Amherst)
10:45	11:05	Tuning the Solubility of Uranyl Peroxide Clusters Through Ligand Exchange Mengyu Xu, Peter Burns (University of Notre Dame)
11:05	11:25	Modelling the transport and reactions in the electrochemical reduction of dinitrogen to ammonia at ambient conditions Nishithan C Kani, Meenesh R Singh (University of Illinois at Chicago)
11:30	12:30	Lunch,

Day 1 - Wednesday March 11, Track 3		
12:45	1:45	Keynote: Matthew Tirrell Pritzker School of Molecular Engineering, University of Chicago
1:45	2:00	Coffee Break
2:00	3:45	WorkShop: How to Engineer Your Success Alex Flueck (Illinois Institute of Technology)
2:00	3:45	Explore the Process of Personal Transformation Alex Flueck (IIT)
3:45	4:00	Coffee Break
4:00	5:45	Session III, Product and Process Characterization Chair: Limin Lu (Anton Paar)
4:00	4:30	Anton Paar and Solutions in the Petroleum Industry Shelby Voorhees (Anton Paar)
4:30	5:00	Powder Characterization: From Macroscale to Nanoscale Mark R Haase (Anton Paar)
5:00	5:30	Rheology Testing in Polymers Limin Lu (Anton Paar)
6:00	7:30	Poster Reception, Gallery Lounge Session Chair: Adam Kanyuh, UOP

3:45	4:00	Coffee Break
4:00	5:45	Session III, YP Session: Job Search Skills Chair: Ruben Barajas (Honeywell), Connor Wegner (Leister Technologies)
4:00	4:30	Job Searching (A Recruiter's Advice) Adam Krueger (Sun Recruiting, Inc.)
4:30	5:00	You Big Softy! - Improving Soft Skills in the Workplace and Life Ruben Barajas (Honeywell)
5:00	5:30	Resume Reviews Adam Krueger (Sun Recruiting, Inc.), Ruben Barajas (Honeywell), Connor Wegner (Leister Technologies)
6:00	7:30	Poster Reception, Gallery Lounge Session Chair: Adam Kanyuh, UOP

March 11 - 12, 2020

IIT, IL

2020 Midwest Regional Conference

Day 2 - Thursday March 12, Track 1

7:30	10:30	Registration (Open all day) & Breakfast
8:15	8:30	Chairman's Introduction
8:30	9:30	Keynote: Michael J. Graff CEO, American Air Liquide
9:30	9:45	Coffee Break
9:45	11:30	Session I: Bio-films Chair: Seok Hoon Hong (Illinois Institute of Technology)
9:45	10:05	Elucidating a new extracellular function of DegP inhibiting biofilm formation of enterohemorrhagic Escherichia coli O157:H7 Kuili Fang, Seok Hoon Hong (Illinois Institute of Technology)
10:05	10:25	Accurate Identification of the Differentiation Stages of Living Hematopoietic Stem and Progenitor Cells on Biomaterial Substrates using Raman Micro-Spectroscopy and Multivariate Analysis Isamar Pastrana-Otero, Sayani Majumdar, Aidan Gilchrist, Brendan A. C. Harley, Mary L. Kraft (University of Illinois at Urbana-Champaign)
10:25	10:45	Engineering colicins for target-specific control of biofilms Xing Jin, Seok Hoon Hong (Illinois Institute of Technology)
10:45	11:05	Graphene-Interface with Electrogenic Bacterial Membrane: Electron Transport and Energetics Sheldon Cotts, Vikas Berry (University of Illinois at Chicago)
11:05	11:25	Characterizing biofilm formation on carbon-foam electrodes Jiacheng Zhou, Kuili Fang, Seok Hoon Hong (Illinois Institute of Technology), Gregg P. Kotchey, David V. P. Sanchez (University of Pittsburgh)
11:30	12:30	Lunch,

Day 2 - Thursday March 12, Track 1		
12:45	1:45	Keynote: Keith A. Couch Senior Director, Honeywell UOP
1:45	2:00	Coffee Break
2:00	3:45	Session II: Refining & Petrochemical Technology Chair: Belma Demirel (BP), Co-Chair: Hadjira Iddir (Honeywell/UOP)
2:00	2:20	Findings from MTO Commercialization – Don't Forget About the Small Stuff Joe Montalbano (UOP Honeywell)
2:20	2:40	Intelligent Operations in Refining: Digital Technologies to Support Fuels Production Martin R. Gonzalez (BP)
2:40	3:00	Honeywell Forge for Industrial- Process Reliability Advisor Abhishek Pednekar (Honeywell)
3:00	3:20	Opportunity crudes and renewable feedstocks in refining Henrik Rasmussen (Haldor Topsoe, Inc.)
3:20	3:40	Technology Advances and Commercialization of Second Generation Biofuels – 2G Ethanol Mukund Yallambalse (Axens North America)
3:45	4:00	Coffee Break
4:00	5:45	Session III: Process and Environmental Safety Chair: Brenton Cox, Jessica Morris (Exponent)
4:00	4:20	Why Storage Tanks Leak and How to Stay Safe Jessica M. Morris PhD
4:20	4:40	Back to Basics: Protecting Tanks from Overpressure and Vacuum Todd W. Drennen, P.E.
4:40	5:00	Flammable liquid spills David C Hietala
5:00	5:20	Stochastic optimization for real-time spatiotemporal sensor placement to monitor air pollutant through health impact assessment Urmila Diwekar
5:20	5:40	Good Practices for the Control of Hazardous Waste Emissions Matthew Walters
6:00	6:45	Reception
6:45	7:25	Local Section Dinner
7:25	7:30	Local Section Announcement
7:30	9:00	Keynote Presentation

March 11 - 12, 2020

IIT, IL

2020 Midwest Regional Conference

Day 2 -Thursday March 12, Track 2

7:30	10:30	Registration (Open all day) & Breakfast
8:15	8:30	Chairman's Introduction
8:30	9:30	Keynote: Michael J. Graff CEO, American Air Liquide
9:30	9:45	Coffee Break
9:45	11:30	Session I: Energy and Sustainability Chair: Lynza Sprowl (Honeywell), Mathew Walters (Exponent)
9:45	10:05	Carbon Dioxide Capture and Utilization: Technology Challenges and Opportunities C. B. Panchal, Kruti Goyal, Richard Doctor (E3Tec Service, LLC)
10:05	10:25	Single-atoms Synthesized via a Novel Method as the Active Site with Highly Efficient Electrocatalytic Conversion of CO₂ to Ethanol Haiping Xu (Northern Illinois University), Di-Jia Liu (Argonne National Laboratory)
10:25	10:45	Copper (II) Oxide Nanoparticles for Electrochemical Conversion of CO₂ to Value-added Chemicals in a Flow Cell Mohammadreza Esmailirad, Alireza Kondori, Andres Ruiz Belmonte, Mohammad Asadi (Illinois Institute of Technology)
10:45	11:05	The Recell Center: DOE's advanced battery recycling program Bryant Polzin, Jeff Spangenberg, Linda Gaines (Argonne National
11:05	11:25	Lead-Based composites as Anode material for Sodium-Ion Batteries Jehee Park, Jinhyup Han, Shabbir Ahmed, Eungje Lee, Christopher Johnson (Argonne National Laboratory), Youngsik Kim (Ulsan National Institute of Science & Technology)
11:30	12:30	Lunch,

Day 2 -Thursday March 12, Track 2

12:45	1:45	Keynote: Keith A. Couch Senior Director, Honeywell UOP
1:45	2:00	Coffee Break
2:00	3:45	Session II, Electrochemical Engineering I Hakim Iddir (Argonne National Laboratory)
2:00	2:20	A Systematic Approach for a Mechanistic Study on Electrochemical Oxidation of Methane over Transition metals and Bi-metallic Catalysts Aditya Prajapati, Meenesh R. Singh (University of Illinois at Chicago)
2:20	2:40	Silicon in Next Generation Batteries: Stabilizing the Li-Si chemistry for Long Cycle and Calendar Life Baris Key, Jack Vaughey, Binghong Han, Fulya Dogan, Chen Liao, Saul Lapidus (Argonne National Laboratory)
2:40	3:00	Improving Li-ion batteries: A density functional theory study of electrolyte breakdown on the anode surface Lynza Sprowl (Honeywell UOP), Liney Arnadottir (Oregon State University), Maria Chan (Argonne National Laboratory)
3:00	3:20	Graphite Lithiation Under Fast Charging Conditions: Atomistic Modeling Insights Juan Garcia, Ira Bloom, Christopher Johnson, Dennis Dees, Hakim Iddir (Argonne National Laboratory)
3:20	3:40	Tri-molybdenum Phosphide (Mo₃P) Catalyst for Electrocatalytic Hydrogen Evolution Reaction Alireza Kondori, Mohammadreza Esmaeilirad, Mohammad Asadi (Illinois Institute of Technology)
3:45	4:00	Coffee Break
4:00	5:45	Session III, Electrochemical Engineering II Chair: Mohammad Asadi (Illinois Institute of Technology)
4:00	4:20	Detecting Lithium Plating Using Raman Spectroscopy Marco Rodrigues (Argonne National Laboratory)
4:20	4:40	The Quest for Next Generation Cathodes for Multivalent Batteries Prakash Parajuli, Bob Jin Kwon, Ian D. Johnson, Jack Vaughey, Jordi Cabana (University of Illinois at Chicago)
4:40	5:00	Transition Metal Dissolution from Li(Ni,Mn,Co)O₂ cathodes Ira Bloom (Argonne National Laboratory)
5:00	5:20	An investigation on ORR and OER behaviors of Lithium Oxygen battery cathode Yang Liu, Jai Prakash (Illinois Institute of Technology)
5:20	5:40	Characterization Assisted Material Design: Application of Solid-State Nuclear Magnetic Resonance on Li-ion Cathodes Fulya Dogan (Argonne National Laboratory)
6:00	6:45	Reception
6:45	7:25	Local Section Dinner
7:25	7:30	Local Section Announcement
7:30	9:00	Keynote Presentation

March 11 - 12, 2020 IIT, IL 2020 Midwest Regional Conference		
Day 2 -Thursday March 12, Track 3		
7:30	10:30	Registration (Open all day) & Breakfast
8:15	8:30	Chairman's Introduction
8:30	9:30	Keynote: Michael J. Graff CEO, American Air Liquide
9:30	9:45	Coffee Break
9:45	11:30	Session III, Multiphase Modeling and Simulation Chair: Allan Issangya (Particulate Solid Research, Inc), Co-Chair: Reza Mostofi (Honeywell UOP)
9:45	10:05	CFD Modeling of a Bioreactor Reza Mostofi, Azita Ahmadazdeh, Steve Poklop (Honeywell UOP)
10:05	10:25	Numerical Simulation of Concentrated Solar Energy Adsorption by Packed and Fluidized Bed Zeyuan Gao, Javad Abbasian, Hamid Arastoopour (Illinois Institute of Technology)
10:25	10:45	Performance of Fluidized Bed Strippers Allan Issangya (Particulate Solid Research, Inc)
10:45	11:05	Multiphysics Modeling of Reactors for Fuel & Chemical Production Joel Paustian (Honeywell UOP)
11:05	11:25	A Comprehensive Analysis of Transient Heat Conduction in Composite Solid Slabs Using Tailor-Made Integral Transforms Satish J. Parulekar (Illinois Institute of Technology)
11:30	12:30	Lunch,

Day 2 -Thursday March 12, Track 3		
12:45	1:45	Keynote: Keith A. Couch Senior Director, Honeywell UOP
1:45	2:00	Coffee Break
2:00	3:45	Session I: Directed Self-assembly of Nanostructures Chair: <i>Shafigh Mehraeen (University of Illinois at Chicago)</i>
2:00	2:20	Atomistic Modeling of Nanoparticles Lattices Formed at Surfaces and Bulks of Liquids Petr Kral (University of Illinois at Chicago)
2:20	2:40	Direct Imaging of Nanoparticle Self-Assembly in Solutions Using Liquid-Phase TEM Qian Chen (University of Illinois at Urbana-Champaign)
2:40	3:00	Impact of confinement on directed self-assembly of sub-10 nm particles into textured substrates Shafigh Mehraeen, Zhen Luo (University of Illinois at Chicago)
3:00	3:20	Active Magnetic Colloids: Multi Vortex States in Swarms Of Magnetic Rollers Alexey Snezhko (Argonne National Laboratory)
3:20	3:40	Formation, Growth and Coalescence of Nanoscopic Mesas in Stratified Chenxian Xu, Subinuer Yilixiati, Chrystian Ochoa, Yiran Zhang, Vivek Shar-
3:45	4:00	Coffee Break
4:00	5:45	Session III, Panel discussion: Big Data in Industry & Academia Chair: <i>Matthew Liberatore (University of Toledo)</i>
6:00	6:45	Reception
6:45	7:25	Local Section Dinner
7:25	7:30	Local Section Announcement
7:30	9:00	Keynote Presentation

NOMINATIONS FOR 2020-2021 AIChE Chicago SECTION OFFICERS

Members may nominate only one candidate for each office (Chair-Elect, Vice-Chair Program, Treasurer, Secretary) and one Director-at-Large for 2019-2020 Fiscal year.

You must fill out a letter of intent form:

<https://form.jotform.com/50354560774154>

Please submit nominations either on line or download the form and send it to Jarad Champion (jaradchampion@aichechicago.org). The nomination deadline is on **March 18**.



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 \$1000 honorarium presented at our sectional meeting.

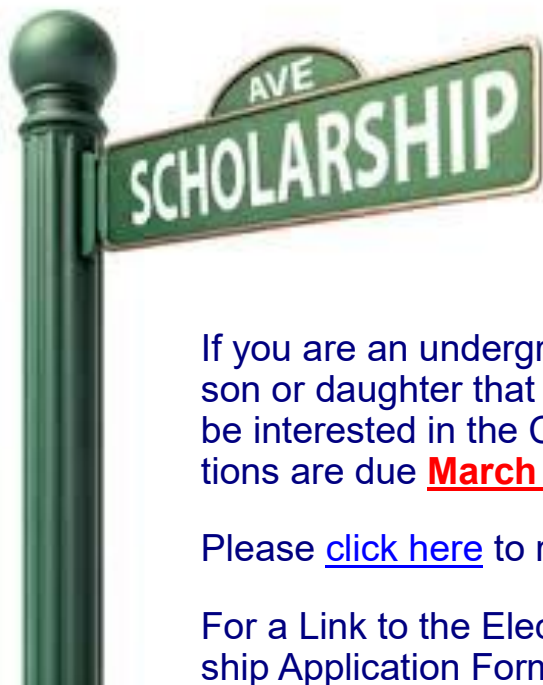
Nomination forms and additional information can be obtained from the Thiele Committee Chair.

Completed nominations are due to the committee chair no later than April 01, 2020.

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, 603-2W 150 W
Warrenville Road, Naperville, IL 60566
Ph 331-702-4071 (office) , Ph 630-269-8662 (cell)

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 15.**

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>

Reminder—Use your credits!

AIChE Global professional members get six free credits each year, good for live or archived content, with permanent access to the content selected. If you haven't used all your credits, they will expire at the end of the year.



Check out the archived webinars and conference presentations [available at the AIChE website](#), and be sure to renew your membership to get six free credits good for next year!

Volunteers Needed for Chicago Local Section

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 local network grows.

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.

Why Renew Your AIChE Membership?

Renew your membership now to keep learning and growing.

Renew Membership



Stay Connected to 40,000+ international members who take advantage of:

- Subscription to AIChE's flagship publication: CEP*
- Education—Access to e-learning courses and instructor-led training, offering Continuing Education Units and PDHs
- 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](#)

[Connect with members & participate in discussions on Engage!](#)

Check out AIChE's member benefit, AIChE Engage. Use the robust directory search to find and connect with members. Participate in technical, career, and academic discussions about chemical engineering.

Upcoming AIChE Conferences, Meetings & Webinars

Chicago Local Meetings

March 12, 2020	Speaker: Ed Nam , Director of our Land, Chemical and Redevelopment Division, EPA
May 20, 2020	Speaker: Prof. Linda Broadbelt , Northwestern University (Thiele Award Winner) Location- Anton Paar, Address- 50 Lakeview Parkway Suites 116-117, Vernon Hills, IL-60061

AIChE Conferences

March 11-12, 2020	Midwest Regional Conference 2020, Chicago, IL https://www.aiche.org/community/sites/local-sections/chicago/mrc12-2020
March 26-29, 2020	2020 Southern Student Regional Conference , Auburn, AL
March 27-29, 2020	2020 Southwest Student Regional Conference , Beaumont, TX
March 29-April 2, 2020	2020 AIChE Spring Meeting and 16th GCPS, Houston, TX
April 3-4, 2020	2020 Western Student Regional Conference , Davis, CA
April 3-4, 2020	2020 Rocky Mountain Student Regional Conference , Socorro, NM
April 3-4, 2020	2020 Mid-America Student Regional Conference , Lincoln, NE
April 4-5, 2020	2020 Eckhardt Northeast Student Regional Conference , Boston, MA

AIChE Webinars

March 4, 2020	What is Safe Discharge?
March 11, 2020	Modeling Corrosion and Corrosion Protection
March 25, 2020	Simulation-driven Engineering for the Modern Chemical Engineer

Officers and Contact Information

Chair	Jarad Champion
Chair Elect	Jeff Zalc
Chair Programming	Ha Dinh
	Sarika Goel
Secretary	Ben Ketter
Treasurer	McKay Rytting
Directors at Large	Adam Kanyuh
	Pat Shannon
	Olha Zvarych
House Committee	Paolo Palmas
	Lance Baird
	Asmara Soomro
Newsletter Editors	Riya Narjari rnarjari@hawk.iit.edu
	Azita Ahmadzadeh azita.ad@gmail.com

AICHE CHICAGO SECTION

AICHE 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.

