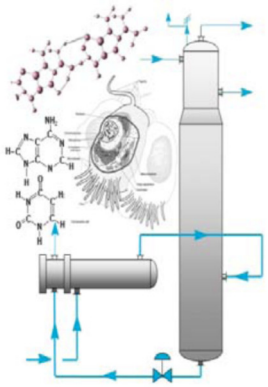
AIChE Chicago Section

February Newsletter

Chicago Section www.aiche.org/Chicago February 2020



Inside this issue:

AIChE Chicago February Meeting

Dr. Asha Oroskar

President and CEO
Orochem Technologies Inc.

Date: ***Thursday February 27, 2020***

Where: ***Restaurant– Greek Island***

Address: ***300 E 22nd St. Lombard, IL 60148***

Cost:

$40 ***AIChE Global and Chicago Section Member***

$45 ***AIChE Global Member Only***

$50 ***Non-Member***

$15 ***Unemployed or Retired AIChE Chicago Section Member***

$10 ***Student***

Registration and Information: http://www.cvent.com/d/4nq9dm

Agenda

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

AIChE® MIDWEST REGIONAL CONFERENCE

DON'T FORGET! TO REGISTER

Register Here: http://www.cvent.com/d/jhqp8f/4W

Chair Corner

I would like to spend a few moments to discuss sustainability. I think every chemical engineer is familiar with how our society is transitioning away from fossil fuel combustion to electrical power generation from non-fossil sources, such as wind and solar. As newer and more sustainable technologies replace older technologies, the primary driver of this progress is technical know-how and having a growth mindset for innovation. I am optimistic that we as engineers can respond to the energy and environmental challenges facing our society.

My optimism is borne by the widespread science and engineering outreach that is provided to students of all ages. I would like to highlight a couple of the outreach efforts that the AIChE Chicago Section supports with volunteers and funds. These outreach efforts are essential to sustaining our society's technical know-how and growth mindset for innovation.

First, on Saturday, February 22, 2020, AIChE Chicago will be participating in the Annual DuPage Area STEM Expo at the IIT Rice Campus in Wheaton, Illinois. Many organizations collaborate to provide over 50 displays, presentations, and projects for school-age children, from kindergarten through 12th grade. AIChE Chicago Section volunteers will be hosting a table where children can dress up in personal protective equipment and learn about chemical engineering. If you are interested in volunteering to represent AIChE, see later in this newsletter for more information.

Second, on March 11 and 12, 2020, AIChE Chicago will be hosting hundreds of high school students at the annual Midwest Regional Conference (MRC). The high school outreach program runs in parallel with the conference and exposes high school students to the profession of chemical engineering and engineering in general. Students have opportunities to tour engineering labs, complete hands-on engineering tasks, and have one-on-one discussions with engineering professionals.

Although the saying is trite, I really do believe that children are our future. AIChE Chicago maintains a scholarship fund for the children of AIChE Chicago members. We will be awarding one or two $500 scholarships to students who will be entering or continuing college education and pursuing a career in chemical engineering. More information is provided in a later page of this newsletter. I recommend that everyone consider donating to this effort. Our children will take over the responsibility of responding to our society's energy and environmental challenges, and it is up to us to make sure they are prepared.

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

February Meeting

Dr. Asha Oroskar

President and CEO , Orochem Technologies Inc.

Biography:

Dr. Asha Oroskar co-founded Orochem Technologies Inc. in 1996. She is recognized in the chemical industry for her expertise in high throughput sample preparation and purification products. Today Orochem is one of the companies that modifies silica and synthesizes polymer in-house for all their separation and purification needs. Utilizing her expertise in the analytical chemistry consumable products, Dr. Asha collaborated with her co-founder, Dr. Anil Oroskar, globally recognized for large scale separation to establishing Orochem as a world leader in establishing plants for production of pure ingredients. Orochem has the unique expertise to embed processes into plants installed worldwide for ton scale purification units for nutraceuticals, and food ingredients markets.

She has co-authored about twenty patents and has led Orochem to be recognized as a global leader for commercial scale purification using simulated moving bed chromatography.

She is recognized as serial entrepreneur. Following the success of Orochem, Dr. Asha Oroskar has co-founded with Dr. Anil Oroskar entities around the globe. Including Orochem India, based in Mumbai India; Kazmira, LLC, in Colorado, and Sirona Naturals, based in Naperville, Illinois.

Dr. Asha Oroskar is the recipient of several awards, including Women of M2M, and most recently been recognized as one of the 100 most impactful healthcare leaders globally.

Talk: Natural vs Synthetic molecules for health and wellbeing: Why does Nature always win in the end??

Date: ***Thursday February 27, 2020***

Where: ***Restaurant– Greek Island***

Address: ***300 E 22nd St. Lombard, IL 60148***

Agenda

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/4nq9dm

MIDWEST REGIONAL CONFERENCE 2020
KEYNOTE SPEAKERS MRC 2020

AIChE MIDWEST REGIONAL CONFERENCE

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 a M.S. and Ph.D. in Industrial Engineering, both from the University of Cincinnati.

MIDWEST REGIONAL CONFERENCE 2020
KEYNOTE SPEAKERS, MRC 2020

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.

Save the Date - Volunteers Needed for DuPage STEM Expo

AIChE is planning on participating at the Annual DuPage STEM Expo on the IIT Rice Campus in Wheaton, IL. Check out the flyer for the event here. This event is geared towards K-12, and it's a great opportunity to educate a younger generation about chemical engineering! This event will be held Saturday, February 22, 2020. Stay tuned to the February Newsletter for more information!

What: DuPage STEM Expo 2020

Where: IIT Rice Campus -- 201 East Loop Road, Wheaton, IL 60189

When: Saturday, February 22th, Shift 1: 10:00 am - 12:30 pm, Shift 2: 12:30 pm - 4:00 pm

RSVP: janet.werner@honeywell.com by February 19th (Please indicate which shift you would like to volunteer)

Cost: Free! We hope that you can join us and represent Chemical Engineering!

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.

Date: ***Thursday March 12, 2020***

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

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

Register for this dinner by adding it as an option in your MRC Registration.

Conference Sponsors

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

Platinum Level

BP

Gold Level

Albemarle

Honeywell UOP

Silver Level

Haldor Topsoe

PSRI

Bronze Level

Anton Paar

BakerRisk

Chemstations

The Climate Solutions Community

REACT Core Facility

Reactor Resources—Catalyst Sulfiding

WISER

BECOME A SPONSOR/ EXHIBITOR AT 2020 AIChE Midwest Regional Conference

MARCH 11-12, 2020

Illinois Institute of Technology · CHICAGO

Organized by Chicago Local Section of AIChE

Exhibiting and sponsoring at the conference not only showcases your latest technology, but also works to establish a long-term relationship with both the university & conference attendees.
Various levels are available!

For questions and additional information, please contact the **Corporate Sponsorship Committee**:

Azita Ahmadzadeh at
azita.ad@gmail.com
Janet Werner at
janet.werner8@gmail.com
Belma Delmirel at
belma.demirel@bp.com

AIChE
MIDWEST
REGIONAL
CONFERENCE

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,

Don't Forget to Register

Register Here: http://www.cvent.com/d/jhqp8f/4W

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, Gallary 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,

Don't Forget to Register

Register Here: http://www.cvent.com/d/jhqp8f/4W

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-dimenstional supercrystals formed by controlable oversaturation: facts and arterfacts.** Elena Shevchenko, Byeongdu Lee (Argonne National Laboratory) Mattew 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 Scole, 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** Alysse 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, Gallary 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,

Don't Forget to Register

Register Here: http://www.cvent.com/d/jhqp8f/4W

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, Gallary 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, Gallary 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 8:15	10:30 8:30	Registration (Open all day) & Breakfast 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,

Don't Forget to Register

Register Here: http://www.cvent.com/d/jhqp8f/4W

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	**Inteligent 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 Esmaeilirad, 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 Spangenberger, Linda Gaines (Argonne National Laboratory)
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,

Don't Forget to Register

Register Here: http://www.cvent.com/d/jhqp8f/4W

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 (Mo 3 P) 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,

Don't Forget to Register

Register Here: http://www.cvent.com/d/jhqp8f/4W

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: *Shafigh Mehraeen (University of Illinois at Chicago)*
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 Stratifying Foam Films** Chenxian Xu, Subinuer Yilixiati, Chrystian Ochoa, Yiran Zhang, Vivek Sharma (University of Illinois at Chicago)
3:45	4:00	Coffee Break
4:00	**5:45**	**Session III, Panel discussion: Big Data in Industry & Academia** Chair: *Matthew Liberatore (University of Toledo)*
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

PROFESSOR LINDA BROADBELT

WINS THE 2019-2020 ERNEST W. THIELE AWARD

Congratulations to Professor Linda J. Broadbelt for being awarded the 2019-2020 Ernest W. Thiele award!

This prestigious award will be presented to Professor Broadbelt at an upcoming meeting of the Chicago AIChE Section.

Professor Broadbelt is awarded the 2019-2020 Ernest Thiele Award for her distinguished contributions to the field of complex kinetic modeling, particularly for the development of automated mechanism generation and mechanistic models applied to diverse chemistries.

The Ernest W. Thiele award is presented annually to a Midwest region member of AIChE who has made outstanding contributions to advance the practice of Chemical Engineering. The award is sponsored by BP and consists of a plaque and a $1000 honorarium.

Please join us in congratulating Professor Broadbelt on her achievement at an upcoming 2020 Chicago Section AIChE meeting to be announced.

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.

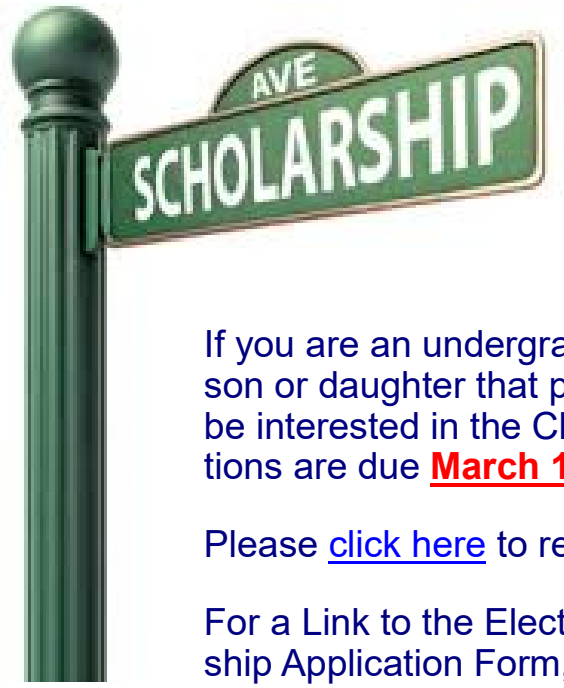
Nomination forms and additional information can be obtained from the Thiele Committee Chair.

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 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

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 Educations 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	
February 27, 2020	Speaker: Dr. Asha Oroskar, Orochem Technologies Inc.
March 12, 2020	Speaker: Ed Nam , Director of our Land, Chemical and Redevelopment Division, EPA
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	
February 26, 2020	Advantages of Remote Proof-Testing for Level Control
March 4, 2020	What is Safe Discharge?
March 11, 2020	Modeling Corrosion and Corrosion Protection

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.