
THE ACTION & REACTION

Newsletter of the Mid-Michigan Section of the American Institute of Chemical Engineers

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CERM - 2025 Chemistry Reconnected

Empowering Scientists | Rebuilding
Trust | Inspiring Change



Joint meeting of the
ACS Central Region & Midland Local Section

October 16 - 17

Central Michigan University

Mount Pleasant, MI

- ☐ **Author-Submitted Posters** (closes Sept. 15)
- ☐ **Expositions** (career, vendor, academic)
- ☐ **Invited Technical Sessions**
- ☐ **Interactive Networking**



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Words from the Chair

By KAYLA WILLIAMS



I hope you have all had a chance to enjoy summer in Michigan to its fullest this year. While our programming tends to quiet down during the summer months, we had an excellent turn out for trivia in the park (a co-sponsored event between AIChE, ACS, and Dow's RISE organization). Special thanks Kim Dinh, Victor Sussman, and their collaborators for all the effort they put in to organizing and running this event!

With summer winding down and school back in session in many districts, your executive committee is hard at work putting together programming options and events for the 2025-2026 cycle. We hope you will all join us for our fall networking kick-off event at MI Element in Midland on September 17th from 5-8:30pm. This promises to be an evening of networking for professionals across the region and is a great way to get a preview into some of the upcoming events for the year. Local section membership is not required to attend, and we encourage you to bring others to the event who may want to learn more about what MMAIChE is up to and how to get involved.

Keep an eye out for future communications on upcoming events and volunteer opportunities such as a sugar factory tour and Delta College "Girls day out" STEM events this fall. I look forward to meeting more of you at our September kick-off!

Words from the Past Chair

By ROQUE GOCHEZ



Dear MMAICHE Community,

During the past Spring Banquet, I had the opportunity to host the event, recognize the talent of our scholarship and award recipients, and learn from our keynote speaker about how to navigate the challenges of the scale-up lab results. Leveraging his vast experience, we had a engaging Q&A session.

At the end of the event, I passed chair responsibilities to Kayla Williams as chair for the 2025 – 2026 cycle. I am confident that under their leadership, the committee will reach new heights and continue to set a standard of excellence for our community!

Our stated goal is to function as a professional space where chemical engineers from the area can develop professionally while working with the local community to further the understanding of science and engineering to support their pursuits of higher education. I want to thank you for your support during 2024-2025 to help us achieve these goals in the community. It has been a great honor and I'm excited to keep being a part of this community, even if not part of the executive committee.

MSU/CMU Plant Tour 2025

By VINCENT COPELAND

On April 4th, MMAICHE partnered with ACS-YCC to host a professional development session for students from Michigan State University's AIChE chapter as well as students from Central Michigan University. During this event, students learned about silicone chemistry while touring Dow R&D and environmental operations facilities. The event also included a speed networking session at MSU St. Andrews, where students networked with industry professionals in various areas of chemical manufacturing. Following the event, students provided feedback indicating that the event was engaging and informative, helping them enhance their understanding of manufacturing and industrial R&D as well as assisting them in determining their future plans and goals. We would like to thank ACS-YCC and all the volunteers who contributed to the success of this event and are looking forward to building upon this event for the near future!



Annual Trivia Night @ Park

By KIM DINH

The Equity, Diversity, and Inclusion Committee co-hosted alongside the Midland ACS Diversity and Inclusion Committee and Dow RISE their 5th annual Trivia Night in the Park at Emerson Park on July 25. Over 70 people attended to network, socialize, eat tacos, and participate in trivia with an emphasis on diversity and inclusion! Team “Past Our Bedtime” took home the trophy. Thank you to everyone who helped with organizing and attended!





MidMichigan AIChE Awards

By MICHAEL MOLNAR

Jessica Nichols Receives Mid-Michigan American Institute of Chemical Engineers' Young Chemical Engineer of the Year Award

On May 22nd, Jessica Nichols, Research Scientist in Performance Silicones Process R&D, The Dow Chemical Company, was awarded by the Mid-Michigan Local Section of the American Institute of Chemical Engineers (AIChE) as the Young Chemical Engineer of the Year for the 2024-2025 program year. This award recognizes technical and professional expertise, and leadership that is superior for an early-career engineer.



Jessica Nichols joined Dow in 2018, after obtaining a PhD in Chemical Engineering from The University of California-Berkeley and a B.S. in Chemical Engineering from Arizona State University. Since joining Dow, she has been supporting the Reactive Chemicals team in Dow's Core R&D organization. She is currently an R&D aligned Reactive Chemicals Subject Matter Expert; she is responsible for providing reactive chemicals data, consultation on reactive chemistry questions, responding to process safety emergencies, and interpreting results for non-experts.

Jessica remains engaged in the broader scientific community and committed to safety across industry, academia, and government. She has provided critical support in high-priority projects and troubleshooting, delivering over \$60MM in value preservation and value creation and contributed to the growth of Dow's portfolio through expertise in reactive chemicals. She has presented work in the area of process and laboratory safety at numerous national meetings and is a co-author on publications related to Dow's Process Safety Containment Event Prevention Program (P3) which describes how collaboration of researchers and safety professionals reduces process safety incidents in laboratories. She also co-authored a recent paper about scale-up of a reactive silicone-acrylate monomer, highlighting that her collaborators clearly felt her technical contributions went beyond providing reactive chemicals data. Most recently, Jessica has published an article in *Chemical Engineering Progress* (CEP) on the dangers of dogmatic reliance on Safety Data Sheets (SDSs) to make decisions. She also leads a partnership with a government agency to improve understanding of explosive sensitivity demonstrating external recognition of her expertise and credibility in loss prevention.

Within the American Institute of Chemical Engineers, Jessica is also an active participant in AIChE, having presented at national meetings, volunteered with the Process Development Division, and presenting to the Pharma, Food, and Fine Chemicals subcommittee of the Center for Chemical Process Safety (CCPS). Between her graduate and her undergraduate work, she authored or co-authored seven publications in high impact journals and recently submitted a chapter on reactive chemicals in *Lee's Process Safety Essentials*.

On behalf of the Mid-Michigan Local Section of AIChE and its awards committee, we would like congratulate Jessica for this well-deserved accomplishment.

Navraj Hanspal Receives Mid-Michigan American Institute of Chemical Engineers' Chemical Engineer of the Year Award

On May 22nd, Navraj Hanspal, Senior Subject Matter Expert in Fluid Mechanics and Mixing, Corteva Agriscience, was awarded by the Mid-Michigan Local Section of the American Institute of Chemical Engineers (AIChE) as the Chemical Engineer of the Year for the 2024-2025 program year. This award recognizes exceptional career accomplishments and leadership in Chemical Engineering.



Navraj Hanspal began his professional career at the University of Manchester (UMIST) as a lecturer in the Mechanical, Aerospace and Civil Engineering department following the completion of his PhD in chemical engineering from Loughborough University in 2005 and B.Tech. from Malaviya National Institute of Technology in 2001. While at UMIST, he focused on multiphase flow problems, especially porous media flows for filtration design. He transitioned from academia to industry, first joining Hemlock Semiconductor Corporation as a CFD analyst in its computational group in 2011 and then working for ANSYS as an application engineer. In 2018, he joined Corteva Agriscience's Crop Health R&D organization as a subject matter expert in fluid mechanics and mixing.

A testament to his leadership was offered by the nominees.

He is a champion of reviewing and summarizing historical research in a concise fashion, and in expanding the field of CFD & Mixing throughout Corteva and our industry at large.

As the sole CFD/Mixing practitioner and expert within the company, he is involved in over 20 projects at any given time. He excels at prioritizing his work and determining the appropriate level of accuracy, ranging from simple correlations to complex multiphase CFD models. He has improved the use of CFD in making it more production ready and helping transition many projects from "lab bench" to "solutions".

Throughout his tenure at Corteva Agriscience, Navraj has made substantial contributions to small molecule synthesis, formulations development, and the support of biological molecules produced in large fermenters. His impact spans 34 molecules across 17 different geographical locations, where he has recommended superior mixing equipment (agitators, dip pipe geometry, nozzles) and optimized process conditions (rotational speed, addition ports, mixing evaluations, energy inputs), leading to improved yield, productivity, safety, and reduced corrosion and splashing. He has also championed adoption of new tools in Corteva Agriscience for some sensitive mixing problems, such as the Lattice Boltzmann-based Large Eddy simulation methodology.

Navraj has also enhanced processes for formulations manufacturing, a field where effective mixing is crucial for creating stable products for our customers, the farmers. A conservative estimate of the value generated in just seven years exceeds \$50 million. This estimate only includes projects where his changes improved yield or productivity. Additionally, he has often demonstrated that mixing was not

the issue, saving costs on unnecessary improvements. His technical accomplishments have been recognized over the course of his career, including the UK Filtration Society Gold Medal award, Dow Corning's Donald R. Weyenberg Technical Achievement Award while at HSC in 2013, and a more recent Manufacturing Leadership Award at Corteva in 2021. He is also a recipient to multiple (28) Corteva Shine awards which are bestowed to individuals involved in successful and high valued ongoing projects.

Navraj has maintained his professional service throughout his career, being active within the American Institute of Chemical Engineers, including roles as Mid-Michigan-Local Section newsletter editor (2024-Present), North American Mixing Forum (NAMF) Historian (2024-Present), AIChE Programming Chair for the NAMF Mixing sessions (2022-2024), and previously the IChemE: Institution of Chemical Engineers in the United Kingdom, where he had served as the President of the Young Members Group, North West. Over the course of his career, he has 22 peer-reviewed publications, approximately 40 conference papers/presentations, 6 book chapters, 36 industrial reports, multiple poster presentations, and has chaired multiple conference sessions. He is also a lead of the Global Asian Impact Network (GAIN) Business Resource Group (BRG) at Corteva Agriscience since 2023.

On behalf of the Mid-Michigan Local Section of AIChE and its awards committee, we would like to congratulate Navraj for this well-deserved accomplishment.

Volunteer as Mentor for Midland ACS and MMAIChE: Day in the Life of an Industrial Scientist

By KIM DINH

Volunteers are needed to work with students on a case study while networking and discussing your career path, role, and advice on how to achieve their goals. Light breakfast and lunch provided.



Volunteers Needed!



Be a mentor at Day in the Life of an Industrial Scientist

Saturday, September 27, 2025, 9 AM – 1 PM, UM-Flint

Network, collaborate on a problem-solving challenge, and share your career path with college students! Light breakfast and lunch provided.

Sign Up or Questions: Kim Dinh (kdinh@dow.com) or Isabel Meza (mmeza1@dow.com)



MMAIChE Kick-Off



MID MICHIGAN AICHE KICK-OFF

Venue

Mi Element Grains and
Grounds
(3124 Jefferson Ave, Midland, MI 48640)



Date

September 17, 2025
(Wednesday)

Agenda

5:30 – 6:00 PM Check in, refreshments
6:00 – 6:30 PM Icebreaker, Executive
Committee Intro &
Program Overview
6:30 – 8:00 PM More Networking Until the
Event Ends

Time

5:30 – 8:00 PM

RSVP NOW!!!



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