
THE ACTION & REACTION

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

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2022 MMAIChE Awards Winners

BY MIKE MOLNAR, AWARDS COMMITTEE CHAIR

Chemical Engineer of the Year Award – Eric Standland



On May 12th, Eric Standland, Principal Research Scientist in Core R&D's Chemical Sciences Inorganic Materials and Heterogeneous Catalysis Group, The Dow Chemical Company, was awarded by the Mid-Michigan Local Section of the American Institute of Chemical Engineers (AIChE) as its Chemical Engineer of the Year for the 2021-2022 program year. This award recognizes exceptional career accomplishments and leadership in Chemical Engineering.

Eric Standland joined The Dow Chemical Company in 2000 as part of its Research Assignments Program following completion of his PhD in Chemical Engineering at Purdue University. He also holds a M.S. degree in Chemical Engineering from Purdue and a B.S. degree in Chemical Engineering, from University of Wisconsin-Madison.

During his time at Dow, he has made significant contributions to numerous projects in the field of heterogeneous catalysis. His internal contributions at Dow have focused on supporting a variety of technology areas including olefin epoxidation and hydrocarbon feedstock catalyst and process development resulting in over 170 internal

reports and 80 external presentations. He is a co-inventor on 12 patents or patent applications.

Externally he has collaborated with faculty at numerous universities, most recently as part of a sponsored university research program to use both experimental and theoretical approaches to explore the kinetics and mechanism of hydrodechlorination of 1,2-dichloroethane with the research group of Professor Manos Mavrikakis at the University of Wisconsin-Madison. He has also been an active recruiter for Dow R&D at Purdue University.

His research interests have extended beyond the field of catalysis to include forays into materials for separations and exploration of strategies for managing large amounts of research data using tools such as R studio. He played a crucial role in establishing a characterization laboratory within Chemical Science for the surface characterization of inorganic materials and is recognized as a subject matter expert in this area.

In addition, he has provided mentorship and support to numerous researchers throughout Dow as they embark on their careers as industrial scientists. His relentless pursuit of high-quality data in support of research efforts has influenced multiple researchers and demonstrated that excellent research science is a cornerstone of research in both the academic and the industrial laboratory.

Eric's professional outreach is extensive. He has been actively engaged in professional activities within the American Institute of Chemical Engineers, having served as the Treasurer for the Mid-Michigan Local Section for multiple years, ensuring the financial health and responsible utilization of funds for the society and enabling its seminar and scholarship programs amongst other initiatives. He has also served in leadership roles within the Michigan Chapter of the North American Catalysis Society, demonstrating his commit-

ment not only to Dow, but the broader profession and scientific community. He was previously awarded the Young Chemical Engineer of the Year Award by the Mid-Michigan Local Section of AIChE in 2004.

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

Young Chemical Engineer of the Year Award – Patrick Heider



On May 12th, Patrick Heider, Research Scientist in Engineering and Process Sciences Core 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 2021-2022 program year. This award recognizes technical and professional expertise, and leadership that is superior for an early-career engineer.

Patrick Heider joined The Dow Chemical Company in 2013 as part of its Research Assignments Program following completion of his PhD from The Massachusetts Institute of Technology in Chemical Engineering. He also holds a Master of Science in Chemical Engineering Practice, MIT and

B.S. Chemical Engineering from Rensselaer Polytechnic Institute.

During his career to date, Pat has been instrumental in supporting multiple business projects for Dow. Following rotations in Dow Building Solutions and Dow Polyolefins, Pat did significant work on the process development and scale-up of a new agricultural molecule (now Corteva Agriscience). Within the Core R&D Process Sciences team, he is viewed by his peers as an excellent, well-rounded engineer who has strong “hands-on” skills in addition to understanding the fundamental technology and enjoys practicing both. He has been a champion of numerous miniplant builds for Dow Industrial Solutions and Dow Performance Silicones. This blend of talent was utilized well to advance the numerous projects Pat has led and worked on. He has a large work capacity and ensures each project progresses through good planning and prioritization. He is a recognized inventor with three granted patent families and two pending. He has also authored thirteen peer-reviewed journal articles and one book chapter.

In addition, Pat has led two University Partner Initiative projects as the Principal Researcher within Dow. During those projects Pat was able to provide perspective, guidance and support to the graduate students working through the project. For many of them, this was their first exposure to industry, and Pat did an excellent job of representing Dow and the chemical industry.

Pat takes an active role in talent acquisition as part of the MIT college recruiting team for Dow R&D. He led an effort to increase our effectiveness as recruiters and provide interview training across Core R&D. He has been great at identifying and recruiting talent into the organization, and he also plays an active role in mentoring many new engineers. In addition, Pat is a member of the Reactive Chemical Process Hazard Analysis (RCPHA) Pilot plant team where he supports several RCPHA assessments and new leader reviews each year. Pat is known for his attention to detail and is seen as a safety expert within his team and R&D as a whole.

Pat has made significant contribution to technical community through external publication, patent filing, and presentation. He is also very passionate about personal development and had taken active planning roles in organizations like AIChE to facilitate on-going learning for the engineering community. Within AIChE, Pat serves the Process Development Division, having served as session chair for Area 12E/F on process intensification at numerous national meetings and most recently as the chair-elect for programming. Within the Mid-Michigan Local Section of AIChE, he has served as the Young Professionals Outreach Coordinator and a STEM development champion. In 2019, he was part of development of a programming module, which won first place at the inaugural AIChE STEM Outreach Competition at the 2019 Annual Meeting.

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

Richard K. Helling awarded 2022 Outstanding Achievement and Promotion of the Chemical Sciences Award

Dr. Richard K. Helling, recently retired Associate Director for Sustainability and Life-Cycle Assessment at Dow Chemical was awarded the 2022 Outstanding Achievement and Promotion of the Chemical Sciences Award by the Midland Section of the American Chemical Society (ACS). Helling is being recognized for his commitment to development and implementation of tools to better assess and guide actions in the chemical industry, leading to more sustainable products and processes. He led Dow's efforts in life-cycle assessment. In addition, Helling is noted for his mentorship and commitment to efforts of the ACS Green Chemistry Institute and the American Center for Life Cycle Assessment.

“Dr. Helling is, simply stated, one of the world's top experts in Life Cycle Analysis and Sustainability” said Dr. Neil Hawkins, President of the Erb Family Foundation, Harvard Sustainability Professor, and former Chief Sustainability Officer at The Dow Chemical Company. “His sustainability career was not launched from the University, but rather, he built his expertise

brick-by-brick through application in his work at The Dow Chemical Company. He was always focused on integrating sustainability principles directly into his R&D projects at Dow, which was not common 25 years ago. He did so with the belief that it was the right thing to do for people and the environment, AND that it was good business.” Joel McDonald, current chair of the Midland Section stated “It was my pleasure to work with Rich, to see the passion he brought to his work and to see his focus on sharing his knowledge through mentorship and external engagement. I am happy that we were able to recognize his significant accomplishments with this award.”

Each year, the Midland Section of the ACS presents awards to recognize outstanding achievement in the chemical sciences. The Outstanding Achievement and Promotion of the Chemical Sciences Award recognizes a person residing in the Michigan counties of Midland, Bay, Saginaw, Isabella, or Gratiot County for dedication and service to the chemical profession. Helling joins a list of recipients that includes



Turner Alfrey, Edwin Plueddemann, Tom Lane, Bob Nowak, Ludo Frevel, Ted Doan and more.

The Midland Local Section recognized over 80 individuals and teams at a May 4th event. Awards were given for excellence in education, community service, membership, innovation, and service to the chemical profession. A full list of the awards and recipients can be found at awards.midlandacs.org and a more complete summary will appear in the May Midland Chemist

(midlandchemist.org), the Midland Section's newsletter.

Words from the Chair

BY MIAO WANG, CHAIR

As we cross the 2-year mark of the pandemic, we are seeing optimistic signs of things returning to pre-pandemic levels. I started my professional journey with Dow as an engineer right before the COVID-pandemic. Despite limited in-person interaction, I was welcomed by many who provided me with a sense of community. Throughout this process, many in the MMAICHe have dedicated themselves to developing personal connections with young professionals, which became critical as we started or continued our professional journey in this tumultuous time.

Through adversity comes strength. Our section leaders, chairs and officers have worked diligently to engage with our members and the greater community. I want to thank Victor Sussman for his leadership of the section for the past year. His effective communication and positivity have made serving on the committee fun and productive. I thank our directors Lura Dietsche, Shawn Feist, and Bruce Holden for their guidance on section development and by-law amendment. For our individual contributors, I want to thank Mark Sullivan as our secretary, Eric Stangland as our treasurer, Jyo Lyn Hor as newsletter editor, Bala Sreedhar as web Master, Greg Theunick and Laura Basgall as membership and publicity chairs, Carlos Escobar as STEAM outreach chair, and Rich Helling as archivist. Thank to Ted Calverley and Michael Molnar for their efforts in organizing our annual scholarship and section awards committee. Thank to Pranav Karanjkar and Preetam Giri's efforts in developing seminar series covering a wide range of subject matters, both technical and non-technical.

Their efforts to bring back in-person kickoff and Spring banquet also allowed the community to get back together. Thank to Pat Heider, our young professionals chair, who continued to promote our beer brewing tradition and lead the team to compete at the national meeting. Thanks to our EDI chair, Kimberly Dinh, who developed a mentoring program with UM-Flint which featured a one-on-one contact between a student and a practicing engineer/scientist. The trivia night that she helps established has also become a popular event in the past year and will continue to be part of our program. Lastly, thank you to all our members for your ongoing support and participation.

As I assume the role of section chair for 2022, I look forward to working with all of you to continue our strides in developing our members professionally and to collaborate with our community to improve their understanding of the impact of today's science and engineering. On this note, we are developing strong programming for the seminar series that features a diverse group of speakers and topics. We are awarded the Project Connect grant, which gives us another opportunity to develop local section programming for our members. As schools return to their regular programming, we will also have opportunities to resume our STEM outreach. Last but not least, our section is also planning for the upcoming AICHe beer brewing competition this fall at the national meeting.

Solutions to today's problems require innovation and creativity, which will be accelerated through diverse teams in an inclusive environment. Our section is committed to nurturing a welcoming environment where



people of all backgrounds and identities are respected, valued, and can achieve their full potential. We understand that every member is different, with their own set of experiences, values, cultural backgrounds, and influences. We come together as a wonderful group of people who share the same vision and are willing to lead with wholeheartedness. As a member of the committee, we will set out to find and develop that potential in you. I encourage you to find opportunities to get involved, whether it is by attending the seminars, or participating in our EDI activities, or volunteering in community outreach, or serving on our committees. As we look forward to a new year, we will have more opportunities to connect and collaborate. So I encourage you to show up, let yourself be seen and be courageous!

Sincerely,
Miao Wang

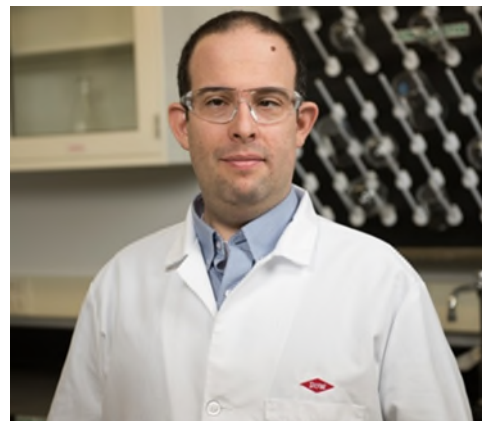
Words from the Past Chair

BY VICTOR SUSSMAN, FORMER CHAIR

Summer is typically a quieter time for the Mid-Michigan Chapter of AIChE as members seize the opportunity to take advantage of warmer weather. In May we were fortunate to be able to host our end of year banquet in person at the Midland Country Club and we welcomed Dr. Andre Argenton, Chief Sustainability Officer at Dow, to discuss the importance of a decarbonized future and the challenges and promise of sustainability for the chemical industry and human progress more broadly. The Spring Banquet was also a time to celebrate the accomplishments of our members and future chemical engineering professionals as we awarded Drs. Pat Heider and Eric Stangland the Young Chemical Engineer and Chemical Engineer of the Year awards respectively in addition to our

scholarship award recipients Karlee Szafranski and Mackenzie Trainor who will be embarking on their own journeys into engineering. We are excited to see where their adventures take them. Not least of all, it was also tremendously satisfying to be able to celebrate these accomplishments in person. The necessary precautions we have taken the past several years have poignantly reminded us of the pleasure and value of interacting with colleagues and friends.

Finally, as I settle into my role as past chair, I look forward to continuing to work with the Executive Committee to maintain a vibrant and engaging set of programs in the coming year, and I am excited to be able to support our current chair, Miao Wang, and



his team in realizing his vision for the 2022-2023 season.

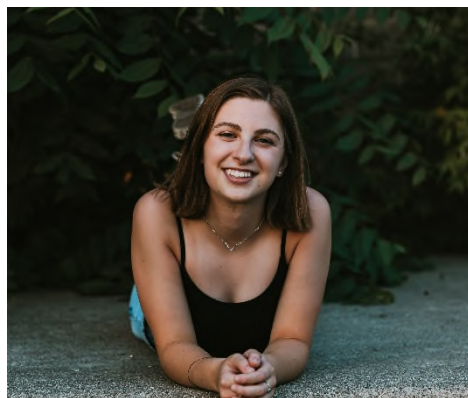
Very respectfully,
Victor Sussman

2022 Chemical Engineering College Scholarship Awarded to Karlee Szafranski

BY TED CALVERLEY, SCHOLARSHIPS CHAIR

Karlee Szafranski, a graduate of Bull-ock Creek High School has been awarded the 2022 Mid-Michigan AIChE Undergraduate Chemical Engineering Scholarship. The scholarship provides \$2000 over 4 years for a graduating senior from the Great Lakes Bay region and neighboring counties who plans to study chemical engineering at an accredited university or college. The scholarship rewards academic performance as well as school and community involvement. It is intended for a student who has a high probability of obtaining a chemical engineering degree and becoming a practicing engineer.

Karlee plans to attend the University of Michigan to study chemical engineering along with a minor in Sustainable Engineering. She had an impressive 4.2 GPA which included AP math and science courses along with honors English. Karlee has also learned Java programming, AutoCAD and SOLIDWORKS, and competed with her FIRST Robotics team 3770 in preparation for a future in engineering. Outside the classroom, Karlee competed in track and field and cross country running as well as competitive cheerleading, while also taking on leadership roles in Student Council and the National Honor Society.



She has also taken community service roles in organizations like “Creekers for a Cause”, Floyd Elementary School and the annual St. Stan’s Polish Festival. For the past year, she has also held down a job at The H Hotel in Midland.

2022 Engineering Exploration Scholarship Awarded to Mackenzie Trainor

BY TED CALVERLEY, SCHOLARSHIPS CHAIR

Mackenzie Trainor, a junior at Freeland High School has been awarded the 2022 Engineering Exploration Scholarship to attend the Summer Youth Program at Michigan Technological University (MTU). The MMAICChE Engineering Exploration Scholarship provides an opportunity for high school students to explore science and engineering careers through laboratory, classroom and field experiences at the MTU Engineering Exploration Summer Youth Program in Houghton, MI. The scholarship is open to students in grades 9 – 11 in the Great Lakes Bay region and neighboring counties.

Mackenzie has focused on STEM courses in her time at Freeland High, taking honors math, biology, physics and 2 Engineering courses, while maintaining a 4.0 GPA. She is on the Varsity Pom team and plays on travel and school softball teams and she notes that the intensity of competition, coupled with the camaraderie of a team setting, feeds her love of these sports. Mackenzie has taken leadership and service roles in multiple organizations including Students Leading Students, Freeland Scholars,



the Green Club and the National Honor Society. She also tutors k-8 students with various learning needs as an employee of RISE.

New 2022-23 MMAICChE Officer in Profile

BY SESHASAYEE MAHADEVAN, NEWSLETTER EDITOR

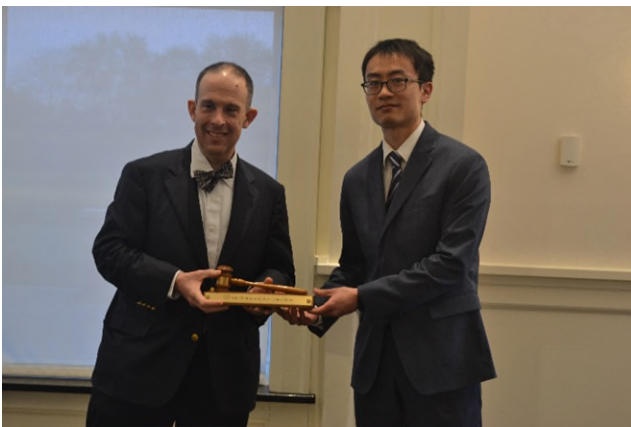
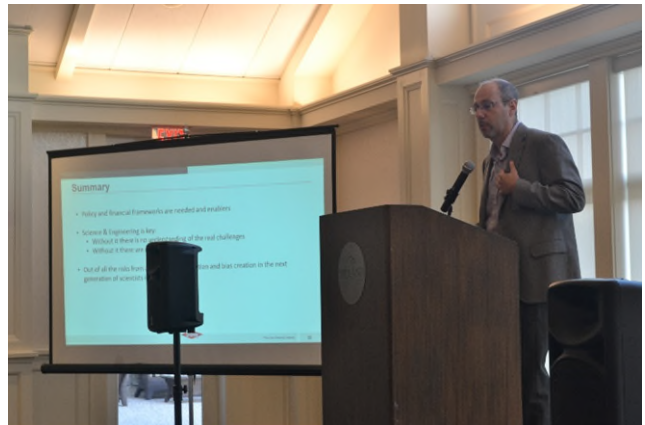
Sesha started his career in May 2022 at Dow as a senior research specialist as a part of the Research Assignment Program (RAP). He is actively working on projects in the membrane separations and silicones business in the process development group in Core R&D Engineering & Process Science team.

Sesha obtained his Ph.D. in Chemical Engineering from Pennsylvania State University. His thesis was on utilizing hydrothermal liquefaction for chemical recycling and

co-valorization of plastic and biomass mixtures. Prior, to graduate studies, Sesha pursued his undergraduate in chemical engineering in National Institute of Technology, Tiruchirappalli. His research interests lie broadly in the fields of sustainability, process engineering and data science. In his free time, Sesha likes hiking, watching late night talk shows and gaming.



Scenes from the 2022 MMAIChE Banquet



Scenes from the 2022 Trivia Night in the Park



Learn about the Beer Brewing Process

BY PATRICK HEIDER, YOUNG PROFESSIONALS CHAIR

The Mid-Michigan section of AIChE is currently planning for the fifth annual AIChE Beer Brewing competition occurring at the AIChE Annual Meeting this fall. We have competed every year and are looking to try out some new ideas based on what we saw at the previous competition.

Last year, our maple porter scored well, finishing just outside the top awarded beers.

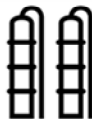
We are open to new members who would like to learn more about the beer brewing process, especially young professionals (< 35 years old). No prior brewing experience

is required and you do not need to attend the Annual Meeting.

If you are interested, please contact Patrick Heider (plheider@dow.com) and he will keep you in the loop for brewing events in the fall.



Call for Speakers



- What: Share career paths with undergraduate chemical engineering students
- Why: To showcase diverse career paths and options
- Where: Virtual seminar series (~ 1 hr each)

Interested? Email Kim Dinh at kdinh@dow.com

*Funded by AIChE Project Connect Grant

Donating to Support a Future Engineer through Mid-Michigan AIChE is Easy!



The Mid-Michigan Section of AIChE is involved in STEM educational outreach. We provide classroom demonstrations and support aspiring engineers through scholarships for summer camps and chemical engineering degrees. Your donation will be used to help Mid-Michigan AIChE sustain the scholarship fund that sends high school students to the Michigan Technological University Summer Youth Program or to an accredited university or college for a degree in chemical engineering.

You can choose to donate using a PayPal account or with a Debit or Credit card.

The PayPal link is:

https://www.paypal.com/donate/?cmd=_donations&business=eestangland%40char-ter.net&item_name=Scholarships+donations+to+Mid-Michigan+AIChE¤cy_code=USD

OR scan the QR Code on your smartphone – it takes seconds!

Donations are tax-deductible and our secretary can provide you with a receipt. We sincerely thank you for financially supporting aspiring chemical engineers.



The Mid-Michigan Section of AIChE gratefully acknowledges the support provided by the following sponsors.



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Stay tuned for the 2022–2023 event schedule!