
THE ACTION & REACTION

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

Volume 23 Issue 2 📅 September 2020

2020 MMAIChE Award Winners

BY STACIE SANTHANY, FORMER CHAIR & MICHAEL MOLNAR, AWARDS CHAIR

The Mid-Michigan Local Section of AIChE and its awards committee congratulate this year's award winners - Michael Molnar and Laura Basgall. These awards would be presented at the annual Section Awards banquet, but the event this Spring had to be postponed due to the global pandemic. The award winners will be recognized formally with a presentation of a plaque at a later date.

Chemical Engineer of the Year – Michael Molnar



Michael Molnar began his professional career at Hemlock Semiconductor Corporation (HSC) in 1995 after receiving a B.S. degree in chemical engineering from Carnegie Mellon. For nineteen years, Michael worked in multiple process R&D and manufacturing support roles at HSC. Most notably, Michael worked on the development of size reduction and classification technologies for high purity polysilicon products and development of fluidized bed deposition process to produce silicon granules. In 2014, Michael joined a newly formed Engineering Sciences Process R&D group within Dow Corning Corporation. In this role, he supported technology development of specialty silanes and led experimental work in the area of fluidization supporting Dow Corning's university research pro-

grams at University of Colorado and University College London. In 2017 in Dow, Michael demonstrated an improved route to vinyl-functional chlorosilanes at miniplant scale. Michael is a recipient of two Dow Corning Corporation Technical Achievement Awards, and he is a recognized inventor with nine granted patent families. In 2015, he was selected by the National Academy of Engineering to participate in the China-America Frontiers of Engineering Symposium.

As a practicing engineer and inventor, Michael has developed a portfolio of process technologies through evolutionary development from initial concept and laboratory investigation, driving and executing the design, construction, and operation of pilot scale process for scale-up and risk reduction, and commercial implementation of new technology. He is considered a leading subject matter expert in manufacture of high purity silicon and hydridochlorosilane materials.

His inventions revolutionized the production of high purity silicon for semiconductor and photovoltaics (PV) devices. His innovations impacted all aspects, from initial concept and laboratory investigation through pilot scale confirmation and ultimate commercial implementation of new technology that truly advanced silicon production. He specializes in chemical vapor deposition, fluidization, solids processing, reaction engineering, thermodynamics, and pilot plant scale process research. Michael has a strong understanding of chemical engineering fundamentals and makes clear recommendations based on both theory and data.

External to Dow, Michael has served as the treasurer and chairperson of the Mid-Michigan Local Section of the American Institute of Chemical Engineers (AIChE) and continues to be active in the section. In 2018, Michael was elected as an industrial liaison for AIChE's Particle Technology

Forum and he was also elected as a representative of the Executive Committee for the Board of Directors of Particulate Solid Research, Inc., an industrial consortium dedicated to research in gas-solids flow.

Michael Molnar shows excellence in engineering fundamentals every day. He thrives on using foundational engineering principles and understanding our technology at the fundamental level. In his career, he has demonstrated the application of engineering principles to commercially implemented projects with substantive value creation that demonstrated a positive financial impact. He is not only a great scientist/engineer, but he is also an incredible teacher and mentor to those around him, advancing the engineering skills of the next generation.

Michael was also the recipient of the Young Chemical Engineer of the Year award for MMAIChE in 2002.

Young Chemical Engineer of the Year – Laura Basgall



Laura Basgall joined Dow Corning Corporation in 2012, with a B.S. in Chemical Engineering from Kansas State University. Since joining the company, Laura has worked Silicone Elastomer and Polymers Process R&D team, serving both as an individual contributor and a program/project leader for thirteen (13) projects. She is recognized for her expertise in processing high

viscosity silicone materials developed through ring opening routes as well as enhancement of technologies involving separations of high viscosity materials. She had led numerous commercialization projects involving elastomer and foams as well serving as a Dow Corning Corporation Technology Center leader for high viscosity siloxane polymers and gums. She had prior experience as an intern in 2011 within Process R&D. She is currently a Senior Research Specialist in Performance Silicones Process R&D.

Laura has a strong track record in leading teams, with most recently a launch of liquid silicone foam with revenue exceeding \$10MM to date. In 2019, Laura as project leader within Dow Silicones Corporation was externally recognized as an IChemE Global Award Finalist in the categories of *Innovative Product* and *Team*, which speaks well for her ability to drive

productive change with commercialization of silicone elastomer materials.

Laura has extensive experience in continuous improvement. She is an internally certified 6-Sigma Black Belt and Lean practitioner as well as a trained member of Dow's Fundamental Problem Solving network. Laura also supports the business evaluation network with financial analysis for key projects and programs. She has thirty (30) internally published technical reports and received one Manufacturing Achievement Award. Laura also served on the leadership committee for Silicones Process R&D Natural Work Group for five years, most recently serving as co-chair. In addition, she has been involved with new hire onboarding within Dow Silicones Process R&D through official and unofficial mentoring, as well as having supervised a summer intern.

Outside of work and time spent with her family, Laura keeps herself very busy. Laura has served actively within her church in multiple roles, including financial recording and director of the handbell choir. She has coached 4-8th grade boys basketball program at St. John's Lutheran School (Midland, MI) as well as served as the co-leader of the middle school youth group. Laura has also taken up the sport of curling since she moved to Michigan. She has volunteered as a coach and instructor for the Midland Curling Club as well as serving as the captain of her curling team. She is also the Publicity Chair for Mid-Michigan Local Section, building upon her previous involvement as liaison within AIChE's National Executive Student Committee and leadership within the KSU AIChE Student Chapter during her undergraduate studies.

2020 Chemical Engineering College Scholarship Awarded to Rita (Misa) Halphen

BY SHEILA GOMBAR-FETNER, FORMER SCHOLARSHIPS CHAIR

Rita (Misa) Halphen, a graduating senior at Midland High School, has been awarded the 2020 Mid-Michigan AIChE Undergraduate Chemical Engineering Scholarship. The scholarship provides \$2000 over 4 years to a graduating high school 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.

Misa plans to attend the University of Michigan in the fall to study chemical engineering. During her high school years, Misa was involved in many different academic, athletic, and philanthropic pursuits. She was a Student Council representative, an officer in Key Club, and was elected Treasurer for both the Orchestra Executive board and National Honor Society. She was a captain on the swim team, a volunteer at the

hospital, and an intern at Michigan State University's STEM Research Center in Midland. Misa was a member of the third-place team for the 2019 A. H. Nickless Innovation Award, and won a 2019 Michigan Affiliate Award for the National Center for Women & Information Technology Aspirations. She also won several Business Professionals of America 2019 Regional Awards- 1st place Parliamentary Procedure, 3rd place Parliamentary Procedure Concepts, 4th place Financial Math Analysis, and 4th place Human Resource Management.

Misa received her award on July 12th during a small, socially-distanced outdoor ceremony at Founder's Park in Midland



2020 MTU Summer Scholarship Awarded to William Gaal

BY SHEILA GOMBAR-FETNER, FORMER SCHOLARSHIPS CHAIR

The Section awarded the 2020 Engineering Exploration Scholarship for the Michigan Tech Summer Youth Program to William Gaal of H. H. Dow High School. William is an ascending junior who decided to attend the Materials Science program, as the Chemical Engineering camp was already full! William is involved in a multitude of extracurricular activities. He is on both his high school varsity swim team and the Midland Dolphins swim team. He is deeply involved in Scouting as the Senior Patrol leader for his troop, is in the Order of the Arrow, and is working on his Eagle Scout project. He enjoys working with Autodesk Inventor to design and create items using his 3D printer, and recently completed an Open Water Scuba Diving certificate in Australia.

The MMAICChE Engineering Exploration Scholarship is open to students in grades 9-11. This scholarship provides an opportunity for a student from the Great Lakes Bay region and neighboring counties to explore science and engineering careers through hands-on laboratory, classroom, and field experiences at the Michigan Technological University Engineering Explorations Summer Youth Program at the MTU campus in Houghton, MI. The scholarship includes tuition, room, and board, along with a travel allotment for a one-week Exploration during the summer. In providing this scholarship, the Section seeks to help young people learn about engineering careers.



Due to the Coronavirus pandemic this year, the MTU SYP camps were canceled for the summer. So MMAICChE received a refund and will sponsor William at SYP camp *next* summer instead, in addition to our 2021 scholarship winner.

Words from the Former Chair

BY STACIE SANTHANY, FORMER CHAIR

As the 2019-2020 MMAICChE fiscal year comes to a close, let's reflect back and also prepare for a new year ahead of us. The year started out well with our typical cadence – fun/musical kickoff at Oscars, continuous learning seminar schedule, and K-12 community outreach. It ended in a not so typical format, with virtual seminars and cancelling of one of our most loved events – the Spring Banquet. The coronavirus has pushed us to be effective, even during this social distancing time. We have had to pivot and think a little differently, which has actually taught us some important things. We are pleased to report that we had record setting attendance at our April and May seminars (by Rich Helling, “Thinking about Sustainability” and Billy Bardin, “Application and Advancement of Digitalization the Process Industries”, which has taught us that virtual can give us some benefits (certainly not a full replacement for face-to-face). This season, we are going to open our forum to speakers who we may not be able to bring to Midland, so if you have ideas, please

pass them along. Even though we did not gather in person for the spring banquet, we did continue forward with other important aspects of our chapter, such as Elections, Awards, and Scholarships. Big congratulations to Laura Basgall (Young Chemical Engineer of the Year) and Michael Molnar (Chemical Engineer of the Year). We will find a way to celebrate with our newly named committee and the award winners in the fall, we may have to continue to be creative in how we meet and interact. We will figure out a plan on how to ‘make up’ for missing the spring banquet. Stay tuned for more details.

We have a very active Executive Committee, and it is an absolute joy to be a part of the leadership of this great local section. If you ever have interest in joining the executive committee, please reach out to a member. I have virtually passed the MMAICChE Chair gavel to Leena Chakraborty, and we look forward to her leadership in the coming year.



Thanks to all of our MMAICChE local members for another great year!

Sincerely,
Stacie Santhany

Words from the Chair

BY DEBOLEENA CHAKRABORTY, CHAIR

I don't know about you, but for me and my family 2020 has been a year like no other. This is a year of adapting to change and adjusting to the new norm. For the past several months of working virtually from home, and managing family has taught me the significance of having a supportive network to help us grow and develop even in most trying times. MMAICChE is such a family of network. The executive committee continued to meet virtually every month to plan the year ahead. Our seminar chairs Pranav Karanjkar and Victor Sussman continued organizing virtual seminar series on diverse topics to keep our members and community engaged. They have a great year planned. So please stay tuned and watch out for the seminar announcements on Facebook and other social media.

No annual spring banquet to hand off the awards to our award winners? No worries, our creative former scholarships chair Sheila Gombar-Fetner, organized an outdoor award ceremony to honor our award winner on a beautiful Michigan summer afternoon. We are very excited to share that we are planning a virtual kick off meeting by the end of September, so please stay tuned for the event announcement. I firmly believe that your active involvement in our local chapter will further advance our passion to make a meaningful difference in the society. If you are interested in getting more involved in MMAICChE please reach out to me or any other committee members. It surely is an honor to be actively involved in this organization. Thank you for being a part of it.



Sincerely,
Deboleena Chakraborty

New 2020-21 MMAICChE Officer in Profile

BY MARK SULLIVAN, SECRETARY

Mark Sullivan recently began his role as secretary of the Executive Committee of MMAICChE. Mark was born and raised in Massachusetts, and he began studying chemical engineering as an undergraduate at the University of Notre Dame. He then continued on to complete his graduate work at the University of Minnesota – Twin Cities and a postdoctoral stint at MIT.

His scientific work has been focused on chemical engineering and heterogeneous catalysis. Mark has worked on density functional theory of potential CO₂ capture systems, understanding complex catalysts for biomass and natural gas upgrading, and interfacing electrochemistry with traditional heterogeneous catalysis systems.

Mark moved to Michigan to join the Reaction Engineering group of Core R&D at Dow.

Mark enjoys the breadth of chemical engineering from the equations and electron pushing all the way up to the global production scales, and he is excited to contribute to the local community as MMAICChE secretary.

Outside of work, Mark enjoys staying active and exploring outdoors with his fiancée, and he looks forward to traveling in an appropriately socially distanced fashion. Mark has fun cheering on his Boston teams, and he is moderately successful at avoiding being an obnoxious sports fan.



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%40charter.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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P.O. Box 2496, Midland MI 48641-2496, U.S.A.

www.aiche.org/community/sites/local-sections/mid-michigan

Published triannually in October/November, February/March, and June/July



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2020-2021 Mid-Michigan **Virtual** AIChE[®] **Kickoff**

September 30, 2020 via WebEx

6.00 pm – 8.00 pm

Program details to be announced

Stay Tuned for the 2020–2021 Seminar Schedule!

Don't worry! We will be hosting our monthly seminars virtually. Look forward to topics including Internet of Things, recycling of plastic waste, Chemical safety and security, and many more. Keep an eye out for event announcement through our local chapter website <https://www.aiche.org/community/sites/local-sections/mid-michigan>, email, or Facebook page <https://www.facebook.com/Mid.Michigan.AIChE/> !