
THE ACTION & REACTION

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

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Apply Now! 2020 Undergraduate Chemical Engineering Scholarship

BY SHEILA GOMBAR-FETNER, SCHOLARSHIPS CHAIR

Mid-Michigan AIChE strives to promote the vision of the American Institute of Chemical Engineers (AIChE) by offering financial support to high school seniors who wish to study and ultimately become professionals in the field of chemical engineering. The scholarship will reward past academic performance as well as school and community involvement. It is not strictly based on financial need. It is intended for a student who has demonstrated a high proficiency in core academic courses and who has a high probability of success at obtaining a chemical engineering degree. More information about the program is located [here](#).

Who: High school seniors residing in the Great Lakes Bay region who plan to major in chemical engineering.

What: Renewable scholarship awarding \$2000 over the course of four years (\$500 per year) for the study of chemical engineering.

Where: A college or university of your choice with an undergraduate chemical engineering program accredited by the Engineering Accreditation Commission of ABET.

Eligible programs are listed [here](#).

Application Period: Applications are currently being accepted until **Friday, March 27th**.

Submit applications online at: [2020 Undergraduate Scholarship Application](#)

Questions? Contact Sheila Gombar-Fetner at SAGombar-Fetner@dow.com

2020 MMAIChE Elections

BY MICHAEL DELISLE, SECRETARY

Each year, the Mid-Michigan AIChE Section holds officer elections according to our approved bylaws which lay out a process including a nomination period, dissemination of ballots, and announcement of election results at the Section's spring banquet which this year is on Tuesday, May 12 at the Midland Country Club. In addition to this newsletter article, we will be communicating election-related notices, news, and ballots by email via our current Section account, mmaiche@mmaiche.org, as well as on the Section web site at <https://www.aiche.org/community/sites/local-sections/mid-michigan>.

Our currently-serving 2019-2020 Section officers are:

Stacie Santhany, Chair

Deboleena Chakraborty, Chair Elect/Vice Chair

Jay Rose, Past Chair
Michael DeLisle, Secretary
Eric Stangland, Treasurer
Laura Dietsche, Director
Shawn Feist, Director
Paul Kehl, Director

As current Chair Elect/Vice Chair, Deboleena Chakraborty will automatically succeed to Section Chair for 2020-2021, and current Chair Stacie Santhany will automatically succeed to the position of Past Chair for 2020-2021. All other officer positions will be up for election, and nominations will be solicited from all local MMAIChE members although suggestions from non-members will certainly be considered—self-nominations are also welcome! However, please be aware that any

nominated candidates must be members of both AIChE and MMAIChE in order to be placed on the election ballot.

The calendar for MMAIChE election events is as follows:

Call for Nominations: April 6
Nominations Close: 5:00 PM, April 27
Distribute Election Ballots: April 28
Election Ballots Due: 5:00 PM May 11
Announce Election Results: May 12 Spring Banquet

All newly-elected and succeeding officers will begin serving at the close of the spring banquet, and terms will expire at the close of the 2021 spring banquet. Please seriously consider nominating someone qualified for an officer position or consider serving yourself!

Call for Nominations – MMAIChE Section Awards for 2019-2020 Program Year

BY MICHAEL MOLNAR, AWARDS COMMITTEE CHAIR

Each year the Mid-Michigan AIChE Section recognizes distinguished members by presenting awards at the Annual Spring Banquet. We would like to recognize deserving members and affiliates so we request our membership to consider nominations for our four award categories. The award categories are:

Chemical Engineer of the Year - This award generally is given to a distinguished chemical engineer in the Mid-Michigan Section with about 20-30 years of professional experience following graduation. Publications, patents, company recognition of achievement, and other accomplishments in the field of chemical engineering are key criteria for consideration. The individual must be an active participant in AIChE at either the local or national level to be considered. This is normally an annual award.

Young Chemical Engineer of the Year - This award recognizes technical and professional expertise, and leadership that is superior for an early-career engineer. Service to AIChE is also a consideration for the award, but not an explicit requirement. It is generally given to a person with approximately 4-12 years of service following

graduation. This is normally an annual award.

Service to Society Award - This award recognizes long-time service to the profession through role modeling for other engineers and leadership of community activities that benefit area students and residents. Recipients usually have about 25-30 years of service following graduation.

Noland Poffenberger Award - This award is given to a high-level manager who has shown great support of the Mid-Michigan Section by encouraging employees within the recipient's organization to participate in professional organizations such as AIChE. Anyone interested in nominating someone can do so by sending an e-mail letter to Michael Molnar, Awards Committee Chair, at michael.molnar@dow.com. Please copy Mike DeLisle, Section Secretary, at mdelisle@sidockgroup.com. The following information should be included:

- Identify the specific award category that you feel is most appropriate for the individual you are nominating.
- Include several paragraphs explaining why this individual is deserving of special recognition.

- Include background information in support of the nomination, such as a listing of professional accomplishments and service to AIChE.
- Also include a phone number where you as the person making the submission can be contacted for more information.

The deadline for submitting nominations is **Friday, April 24, 2020**. The awardees will be announced at the Annual Spring Banquet on May 12, 2020.

We certainly expect that there are many individuals in the area deserving of special recognition, so please consider nominating someone you know. The Awards Committee may decide not to give an award in a particular category if too few nominations are received.

More information about the Mid-Michigan Section of AIChE is available at <http://www.mmaiche.org> and <http://www.aiche.org/community/sites/local-sections/mid-michigan>.

Sincerely,

Michael Molnar (Chair), Laura Dietsche, Paul Kehl, and Shawn Feist
Awards Committee Members

Words from the Chair

BY STACIE SANTHANY

People are what makes this world go around. Do you ever think about all the networks of people you have in your life to allow you to keep learning/growing, leaning on each other, and having fun? I consider MMAICHe one of those great networks. This year we have been able to come together for several seminars to continue to fill our toolkits with knowledge. The seminar chairs, Pranav and Victor, have done a great job of diversifying the topics and speakers and it is our hope that you took something meaningful away from those events. Looking forward, we are very excited to share that Mary Draves, Chief Sustainability Officer and Vice President of Environment, Health, and Safety at

Dow, will be our keynote speaker at the annual spring banquet. We hope you will mark your calendars (May 12, 2020) for that special night of fellowship together.

It is the time of year for Executive Committee elections. If you are interested in getting more involved in MMAICHe, please reach out to me or any other committee member.

I'm grateful for this organization to bring us together! Thanks for being a part of it!

Sincerely,
Stacie Santhany



Annual Spring Banquet 2020

Date: May 12th, 2020 (Tuesday)

Time: 5.30 – 8.30 pm

Venue: Midland Country Club

1120 W St. Andrews Rd., Midland MI 48640

Program: Dinner, Awards Program, Key Note

Key Note: Making the Most of Every Molecule: Chemistry and Sustainable Consumption

Mary Draves, Chief Sustainability Officer & Vice President of Environment, Health and Safety, Dow

More details to follow

MMAIChE Wins Most Efficient Brew at 2019 Annual Meeting

PATRICK HEIDER, YOUNG PROFESSIONALS CHAIR

For the third year in a row, the MMAIChE brewing team took home an award at the 3rd annual AIChE Beer Brewing Competition. The event was held at the Fall AIChE Annual meeting in Orlando, FL, on Sunday, November 10th. The competition requires teams to submit up three different brews to be evaluated by judges certified by the Beer Judge Certification Program. In addition to the judges' evaluation, teams present a poster that include relevant chemical engineering data including the recipe, final alcohol percentage, and a mass balance. Several awards are provided including best combined poster and taste score, highest judge evaluation, logo design, highest starting gravity, and most efficient brew.

This year, Team MMAIChE consisted of Pranav Karanjkar, Mrunmayi Kumbhalkar, Patrick Heider, Balamurali Sreedhar, and Scott Tipler. The team entered three beers: a hoppy porter called "Over Pressure Porter"; a fruity hefeweizen called "Weizentropic Process"; and an M-43 inspired IPA called "Mid-Mitten's Own IPA". Thanks to accurate measurements and quality chemical engineering practices, the Weizentropic Process took the award for most efficient beer achieving a brewhouse



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efficiency of 95 %. This is a measure of what percentage of the sugars present in the raw materials were converted to alcohol in the final product.

This achievement is even more impressive as the team lost access to their all grain brewing equipment when one of their members relocated only two months before the competition. Fortunately, Scott Tipler took over the master brewer responsibilities. This allowed Scott and the team to implement several new processes including bottling from kegs and commissioning several new pieces of equipment.

Another local team also won an award at the event. The graduate student team at

MSU won the first runner up prize for the overall poster and taste score with their MSU ChemE's Sour Beer. Their poster was especially impressive containing extensive analytical evaluation of their process using the full array of analytical equipment at MSU.

If you are interested in learning how to brew and want to join the team next year or if you want to enter a team yourself, please contact Patrick Heider (plheider@dow.com). Keep an eye out for more information on a beer evaluation event where you can learn how the certified judges evaluate beer and see if you can match their scoring for one of the MMAIChE beers.



Middle School STEM Module Receives National Recognition at AIChE Annual Meeting

PATRICK HEIDER, YOUNG PROFESSIONALS CHAIR & THU VI, K-12 STEM EDUCATION OUTREACH CHAIR

Mid-Michigan AIChE won the first prize for its surface tension STEM classroom module at the Annual Meeting this year in Orlando. This was at the first annual AIChE STEM Outreach Competition sponsored by the national AIChE organization. This event sought the best STEM activities used by student and professional chapters and highlighted them during an outreach event at the conference. Thu Vi, MMAIChE STEM outreach coordinator, entered the surface tension module which was selected along with 15 other modules to present to judges and students and went on to claim top prize among the professional chapters.

Modules were judged in ten categories: feasibility, meaningfulness of objectives, explanation of theory, connection to real world application, audience specialization, audience interactivity, innovativeness, safety, benefit to volunteers, and handouts. After presenting to judges, a group of over 100 local elementary through high school

students came through to experience abbreviated versions of each module. Deboleena Chakraborty, Patrick Heider, Michael Molnar, and Balamurali Sreedhar were at the conference to present the module. They were able to hand out copies of their module instructions and worksheets to the other teams and see a number of other interesting STEM modules in use by other chapters. Other conference attendees were also allowed to peruse the exhibits and were interested in how MMAIChE used the module in their outreach efforts.

The surface tension module was originally developed by David Couling, Maureen Ferries, Ben Freireich, Patrick Heider, Alan Stottlemeyer, Mika Yamamoto, and De-Wei Yin back in 2015. It has been presented and refined at both Midland middle schools reaching 1,800 students and resulting in a focused demonstration of the scientific method appropriate for seventh grade students. While ostensibly about surface tension, the module actually

teaches students how to apply the scientific method and how to interpret large data sets using graphs. Students go through the whole scientific process twice so they can have the opportunity to form new conclusions to update a hypothesis about how surface tension behaves. The module integrates well with content covered by teachers in the spring of seventh grade and is requested by the teachers each year. The whole module will eventually be included in a STEM outreach module database hosted by the national AIChE organization to be leveraged by any organization.

If you are interested in helping teach the surface tension module at Midland schools this spring, please contact Thu Vi (tvi@dow.com). She will be coordinating sessions at both middle schools and more help is always needed. No experience is necessary; you will be grouped with experienced instructors to assist with the class.



Scenes from the 2020 Seminar Series



Ted Calverley, *This Stuff Really Works!*



Ken First, *An Overview of the Center for Chemical Process Safety*



The Mid-Michigan Section of AIChE thanks the following companies:



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2019–2020 Seminar Schedule

Event	Date, Time, and Venue	Speaker and Topic
October	October 08, 2019, 11.30 am–1.00 pm Grand Traverse Pie Co., Midland	Jeffrey Koperski Professor, Saginaw Valley State University <i>“Engineering Ethics: A Clash of Fundamental Principles”</i>
November	November 14, 2019, 11.30 am–1.00 pm Grand Traverse Pie Co., Midland	Bruce Royce & Patrick Frazee City of Midland <i>“Overview of Operations at Midland WWTP”</i>
January	January 14, 2020, 6.00 – 7.30 pm Michigan State University at St. Andrews	Ted Calverley Fellow, Dow and Recipient of the MMAIChE 2019 Chemical Engineer of the Year Award <i>“This Stuff Really Works! Unraveling Apparently Complex Systems using Chemical Engineering Tools”</i>
February	February 11, 2020, 6.00 – 7:30 pm Grand Traverse Pie Co., Midland	Ken First Consultant, Center for Chemical Process Safety (CCPS) <i>“An Overview of the Center for Chemical Process Safety”</i>
March	-	Seminar canceled
April	April 22, 2020, 6.00 – 7.30 pm Michigan State University at St. Andrews	Rich Helling Global EH&S Expertise Principal, Dow <i>“Thinking about Sustainability”</i>
May	May 12, 2020, 5.30 – 8.30pm Midland Country Club	Annual Spring Banquet Keynote Speaker: Mary Draves Chief Sustainability Officer and Vice President of Environment, Health and Safety, Dow Keynote: <i>“Making the Most of Every Molecule: Chemistry and Sustainable Consumption”</i>