
THE ACTION & REACTION

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

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Team MMAIChE Claims Homebrewing Title

BY DAVID COULING

This year's Fall AIChE meeting in Minneapolis featured the Young Professionals' first Annual Beer Brewing Competition. Teams from across the country were encouraged to submit entries in the "Bright and Hoppy," "Dark and Malty," and "Seasonal" categories. In true chemical engineering fashion, teams were also required to present a poster detailing their process, including recipe, final alcohol concentration, and, naturally, a mass balance. The beer tasting and judging was performed according to the Beer Judge Certification Program (BJCP) standards and procedures. All told, there were over thirty entries to the

competition.

Team MMAIChE, consisting of Bill Liechty, Scott Tipler, and David Couling, submitted entries in both the "Bright and Hoppy" and "Dark and Malty" Categories. The MMAIChE "Black Lagoon Porter" claimed 3rd place in the "Dark and Malty" category, and "Billy's Breakfast Bitter," a traditional British bitter claimed both 1st prize in the "Bright and Hoppy" category and grand prize overall.

Please congratulate Bill, Scott, and David on a job well done!



From left: Bill Liechty, David Couling, and Scott Tipler holding awards and award-winning beverages

Great Lakes Bay STEM Festival

BY DEBOLEENA CHAKRABORTY, K-12 OUTREACH CHAIR

The 2017 Dow Great Lakes Bay STEM Festival took place on Friday and Saturday, 6th and 7th October at Delta College. Over 30 different organizations came together to host over 150 hands-on activities and demonstrations for the students.

This year Mid-Michigan AIChE brought back a number of hands-on activities that demonstrated friction in packed granular systems, density flotation separation of solids and introduced the important chemical engineering concept of scaling up and troubleshooting a unit operation using the making of lemonade (Thanks to Mr. Tim Geiger of Mattoon & Lee Equipment of Farmington MI). For the scale-up demonstration, we start with how to stir and dissolve sugar in a short beverage glass to make lemonade, then progress to a taller glass followed by a pitcher while comparing the time and effort required and discussing the efficiencies and economic profits gained. The students can try to stir the undissolved sugar (simulated using fine white sand and small red colored beads) and actually feel the difference in fluid resistance on the spoon. After experimenting with the beverage

glass and pitcher-scale processes, we move up to illustrate a failed attempt to stir and suspend undissolved sugar in a larger unbaffled tank using a motorized agitator. We guide the students in observing the defect in the flow, as evidenced by the formation of a deep vortex and accumulation of sugar at the vessel bottom, and demonstrate how to correct the problem by adding baffles.

With the generous help of Mike Molnar of Dow Performance Silicones, MMAIChE also introduced a new exhibit station that demonstrated the concept of fluidized bed drying operations. The set up was a retrofitted hand-held vacuum with adjustable suction. The team demonstrated the impact of particle size and density on the degree of fluidization using sand and cotton balls as examples. While the lighter cotton balls were easily fluidized, it required a lot of suction to fluidize the sand bed. With interactive demonstrations the volunteers made possible an engaging, hands-on, relaxed environment for area youth and their families to experience the "WOW" of STEM. The demonstrations and discussions gave many young minds



an insight into career opportunities in Chemical Engineering.

Mid-Michigan AIChE recognizes the following individuals for volunteering at the Festival to make this event a huge success: De-Wei Yin, Megan Donaldson, Patrick Heider, Madhusudan Kodam, Jing Luo, Haseeb Moten, Alan Stottlemeyer, Yi Fan, Cheryl Wizda, Jay Rose, Mrunmayi Kumbhalkar, Michael Molnar, Balamurali Sreedhar, Abraham Schuitman and Deboleena Chakraborty. If you are interested in helping with MMAIChE K-12 outreach activities in the future, please contact Deboleena Chakraborty (for contact information please see the newsletter masthead).

Words from the Chair: Fall 2017-18

Kickoff Meeting

BY TED CALVERLEY

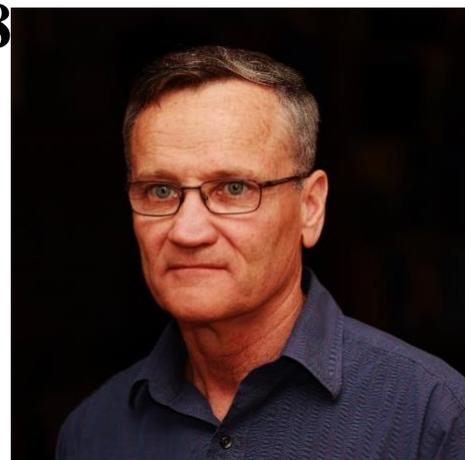
The kick-off meeting for this year's MMAICHe program was held on September 19th, 2017 at Oscar's in Midland. The meeting started off with social time, supported by beverages and appetizers supplied by MMAICHe. This was accompanied by live music by an all-engineer saxophone quartet comprising John Anderson, David Couling, Patrick Heider and Jon Van Regenmorter, who entertained the group with an impressively eclectic mix of music genres from Ragtime to Celtic. John and his musical associates have supported our kickoff events many times, always enhancing the sense of fun and excitement as we start a new season of MMAICHe events.

The formal program included the introduction of the Section Executive Committee for this year and the 2017-18 speakers program which includes monthly meetings through May of 2018 (and can be

found at <https://www.aiche.org/community/sites/local-sections/mid-michigan/events/mmaicche-lecture-series-2017-18-1>).

The "Icebreaker" has become a tradition at the kick-off meetings and this year's quiz tested the ability of the audience to identify famous people who were trained as chemical engineers, based on a series of clues. While the Ch.E. background of Linus Pauling and Edward Teller were not great surprises, many of us did not realize that astronaut Mae Jemison, movie director Frank Capra and actor Dolph Lundgren were also trained in our profession.

We had more than 30 attendees at this year's kickoff meeting, including some new, young faces. We hope that many of you will continue to support the local AICHe section by coming to our seminars



and ultimately getting involved. Remaining relevant is a challenge for professional groups like ours and we need input from all of you help us achieve that relevance. I look forward to seeing many of you at this year's events!

Sincerely,
Ted Calverley

Fall 2017 Seminar Series

BY RON LENG, K-12 PROGRAMMING CHAIR

In addition to the Oscar's Kick-off meeting in September, Fall 2017 saw a series of seminars from speakers on a wide arrange of topics. We kicked off the MMAICHe seminar series on October 17. Matt Basset, Chairman and Chief Executive Officer at Hemlock Semiconductor gave a fascinating overview of the role Hemlock Semiconductor Group plays in delivering value and materials to the world in the semiconductor and photovoltaic (PV) market spaces. He addressed trends and challenges in both market segments. The October seminar was followed up on November 15th by Chris Rentsch, Head of

Engineering at Origin Materials. Chris presented a great talk on how a start up with 52 employees employs aspires to deliver a renewable monomer to market within two years. He provided a perspective on how work at a large company contrasts with work at a company so small that everyone still knows everybody's name.

Our final seminar for the calendar year was on December 13 featuring Ken First, a recently retired 46 year veteran of Dow AgroSciences. Ken spoke on Chemical Process Safety an important discipline that

focuses on the prevention and mitigation of catastrophic releases of hazardous materials or energy that may lead to fires, explosions, or toxic impacts.

The remainder of the seminar series, leading up to our annual meeting on May 22, can be found on the schedule at the end of this newsletter. We hope you will come out and enjoy these interesting and educational seminars as well as to connect with local, fellow chemical engineers.

Speed-Networking at U. of M.

BY ALAN STOTTLEMYER AND STACIE SANTHANY, YOUNG PROFESSIONALS OUTREACH

This is the second year that the Project Connect grant funded an opportunity for MMAIChE to connect with chemical engineering students from the University of Michigan for an event that provided both industrial plant tours and speed networking with industry professionals. The students experienced the process to bring new materials from research labs to miniplant process development facilities and ultimately to full-scale manufacturing plants.

The professional development offered via the lab and plant tours was supplemented with a speed networking event. The students were given the opportunity to network with industry professionals. The career paths of the mentors included classical chemical engineering, cost-estimation, corporate communication,

product stewardship, research and development, and commercial functions.

This program was well received by both mentors and students alike and was designed specifically to the needs of the students. MMAIChE recognizes that one powerful aspect of a degree in chemical engineering is the myriad career paths that open for the graduate; however, choosing among these options can be intimidating and difficult for a student. With this in mind this program was designed to (1) demonstrate with tours and first-hand experience (albeit very limited) what a classical chemical engineering career entails at both the graduate and undergraduate level and (2) experience via networking the other career paths open to chemical engineers. The benefit to the students was in the form of information



and experience to help them to plan the next phase of professional development – after graduation. A survey conducted post event indicated that 86% of 22 student respondents intend to follow up with a mentor. A second event will be scheduled with Michigan State University in the Spring.

Contact ALStottlemyer@dow.com if you are interested in participating.

Scenes from the 2017 MMAIChE Kick-Off



Time out for some saxophone serenading.



MMAIChE Chair Ted Calverley offering ChemE trivia.

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Chair

Ted Calverley emcalverley@dow.com

Chair-Elect

Jay Rose j.rose@dowcoming.com

Past-Chair

Stacie Santhany slsanthany@dow.com

Treasurer

Eric Stangland eestangland@dow.com

Secretary

Bruce Holden bsh0@hotmail.com

Directors

Laura Dietsche ljdietsche@dow.com

Shawn Feist sfeist@dow.com

Paul Kehl pjkeh12000@yahoo.com

Adviser

Tim Frank tcfank@dow.com

Archivist & Continuing Education

Rich Helling rhelling@dow.com

Awards Committee

Michael Molnar michael.molnar@hscpoly.com

K-12 STEM Education Outreach

Deboleena dchakraborty2@dow.com

Chakraborty

Membership

Greg Theunick greg.theunick@hscpoly.com

Newsletter Editor

David Couling dcouling@dow.com

Programming

Ron Leng rbleng@dow.com

Publicity

Yi Fan yfan5@dow.com

Scholarships

Sheila Gombar-Fetner sagombar-fetner@dow.com

Webmaster

Kathleen Wu kwu1@dow.com

Young Professionals

Alan Stottlemeyer alstottlemeyer@dow.com

2017–2018 Seminar Schedule

Event	Date, Time, and Venue	Speaker and Topic
October	October 17, 2017, 6–8 pm Grand Traverse Pie Co., Midland	Mark Bassett Chairman and Chief Executive Officer, Hemlock Semiconductor <i>"Polycrystalline Silicon Technology and Markets"</i>
November	November 15, 2017, 6–8 pm Grand Traverse Pie Co., Midland	Chris Rentsch Head of Engineering, Origin Materials <i>"Adventures at a Start-up Company vs. the Corporate Gig"</i>
December	December 13, 2017, 6–8 pm Grand Traverse pie Co., Midland	Ken First Retired Process Safety Leader, Dow AgroSciences <i>"Hazard Analysis and Risk Analysis Tool Kit"</i>
January	January 24, 2018, 6–8 pm Grand Traverse Pie Co., Midland	Claudia Walecka-Hutchison EH&S Remediation Manager, The Dow Chemical Company TBD
February	February 21, 2018 Grand Traverse Pie Co., Midland	Leo Chiang Associate Tech Director, Chemometrics and Data Analytics Analytical Tech Center <i>"Big Data Analytics"</i>
March	March 21, 2018 Grand Traverse Pie Co., Midland	Paul Vosejpka Formulation Sciences R&D Director, The Dow Chemical Company <i>"The Future of Transportation"</i>
April	April 25, 2018, 6–8 pm Grand Traverse Pie Co., Midland	TBD
May Spring Banquet	May 22, 2017, 5:30–9 pm Great Hall Banquet & Convention Center, Midland	Mark Weick Global Sustainability Director, The Dow Chemical Company <i>"Sustainability: The Chemical Engineer's Role in the Future"</i>