
THE ACTION & REACTION

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

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Mid-Michigan AIChE Now Accepting Scholarship Applications

BY NANCY TSENG, SCHOLARSHIPS

Undergraduate Chemical Engineering Scholarship

Who High school seniors who plan to major in chemical engineering.

What Renewable scholarship of \$500 per year over four years, for a total of \$2,000, to study chemical engineering.

Where A college or university with an undergraduate chemical engineering program which must be accredited by ABET

(main.abet.org/aps/Accredited-programsearch.aspx).

Deadline April 15, 2016

Engineering Exploration Scholarship

Who Students in grades 9–11.

What Full scholarship covering tuition, room, and board plus a \$100 travel allowance to explore science and engineering through hands-on laboratory, classroom, and field experiences.

Where Summer Youth Program (www.syp.mtu.edu) at Michigan Technological University in Houghton, MI.

When One-week session in the summer of 2016.

Deadline April 8, 2016

Submit applications online at www.iche.org/community/sites/local-sections/mid-michigan/scholarships. Questions? Contact Nancy Tseng at ntseng@dow.com.



Rich Helling asking the audience “Which of the following snack has a bigger footprint: a doughnut, yogurt, or a kiwi?” See article on page 3.

Flint Water Crisis: How to Help

BY MIKA YAMAMOTO, BEN FREIREICH, AND STACIE SANTHANY, CHAIR-ELECT

The Flint water crisis is a problem of great concern to members of Mid-Michigan AIChE. Not only is the subject of technical and ethical interest to us, but the situation severely affects the daily lives of our close neighbors.

To summarize what happened, Flint’s financial distress led to authorities switching the source of Flint’s water supply from Detroit to the Flint River in order to cut cost.

This switch and the subsequent improper water treatment altered the chemistry of the water, resulting in lead leaching from the pipes. Lead is a neurotoxin that does not cause acute symptoms but may affect mental and physical development and is therefore considered a dangerous toxin to children.

In the next issue we will include a feature article providing a more extensive review on this topic.

At this time members of Mid-Michigan AIChE are organizing a fundraising drive to help purchase pallets of bottled water (1,872 half-liter bottles per pallet for \$490) to be delivered to those in need in Flint. To make a donation, please contact Stacie Santhany at slsanthany@dow.com. For other ways to help, please see:

- www.flintvolunteer.com
- www.helpforflint.com
- www.unitedwaygenesees.org/flintwaterfund
- www.michigan.gov/documents/flintwater/Guidelines_for_Water_Donations_Drives_511685_7.pdf

Words from the Chair

BY TOM GREGORY, CHAIR

“Engineers create the world that never was.” — Theodore von Kármán

The impact of the chemical industry on society has been a recurring theme of our 2015–2016 seminar program, including talks on toxicology and chemophobia, energy, chemical plant safety, food production and distribution, and uses of silicones. A summary of these and upcoming seminars which also include this theme are given in the report on page 3.

These seminar topics illustrate the vital role that chemical engineers play in our modern world, impacting just about everything we do and the things we rely on in our daily lives. For example, smart phones, which are considered to be a triumph of electrical engineering, could not function without chemical engineers' contribution to the production of semiconductors, circuit board components, display materials, and the batteries that power them.

Likewise, our transportation infrastructure and vehicles — typically associated with civil, mechanical, and aerospace engineers — could not function without the contributions of chemical engineers to fuel and lubricant development; development and production of lightweight metals, polymers, and composites; and paving materials.

The on-going water crisis in Flint (p. 1) is a stark reminder that proper water purification and corrosion control are crucial to the functioning of our utilities infrastructure. Wastewater treatment is another vital service

that is based on chemical and biological technologies developed by chemical engineers. Together with our colleagues in other engineering and science disciplines we have a profound and growing impact on society.

Mid-Michigan AIChE also strives to impact the future of our profession and our society through our scholarship and educational outreach efforts. We award a four-year scholarship each year to a high school senior in our area planning to major in chemical engineering in college, as well as a scholarship for an underclassman to a summer youth program at Michigan Technological University; more details on those scholarships are included on page 1.

Contributions of chemical engineers to society and our profession increasingly extend beyond our corporate and academic careers as well. Our wealth of practical experience and depth of knowledge is often sought after by governmental organizations such as the National Science Foundation and the Department of Energy; non-governmental organizations such as Engineers Without Borders; and early stage companies with potentially transformative ideas but with little experience in turning such ideas into reality.

The “encore act” in a chemical engineering career will be highlighted at our spring banquet on Tuesday, May 24 in Midland (p. 4). Our keynote speaker will be Victor Atiemo-Obeng, a past Chair



of Mid-Michigan AIChE, and Fellow of AIChE. Victor will speak on the topic of “Retirement Living: Opportunities to live out passions and address pressing needs.” Join us for a very interesting and informative evening.

Mid-Michigan AIChE is seeking nominations for the four 2015–2016 Section Awards (p. 5) and also candidates for the Chair-Elect position for 2016–2017. The Chair-Elect will take office at our spring banquet and assist 2016–2017 Chair Stacie Santhany in leading the section, to succeed as Chair in 2017–2018. If you are interested in running for this position or would like to nominate someone, please contact current Chair Tom Gregory at tdgregory@sbcglobal.net or Secretary Bruce Holden at bsholden@dow.com. We are also seeking volunteers for our committees. Please see the list of committees and contacts at the end of this newsletter.

Finally, with this issue of the newsletter we are experimenting with a new layout. What is your *Reaction?* We are also welcoming a new editor for our newsletter, Mika Yamamoto. We thank Tim Frank for his years of service as our newsletter editor. Welcome to the MMAIChE team, Mika!

Report on 2015–2016 Seminars

BY DEFNE KAYRAK-TALAY, PROGRAMMING

The Mid-Michigan AIChE Section has so far hosted five informative monthly seminars in 2015–2016:

- **James S. Bus** of Exponent Engineering and Scientific Consulting gave an excellent overview of toxicology in October. His seminar attracted a diverse audience and was co-hosted by the Midland Section of the American Chemical Society.
- **Mark Barteau**, professor at U. of Michigan, spoke about Michigan energy initiatives in November.
- **Kevin Shaughnessy**, Director of the Process Safety Technology Center at Dow Chemical, showed us the importance of an inherent safety design mindset in chemical engineering practice in December.
- **Rich Helling**, Director of Sustainable Chemistry at Dow Chemical and the 2015 Mid-Michigan AIChE Chemical Engineer of the Year, gave a fascinating perspective on life cycle analysis of foods, making environmentally conscious decisions on grocery shopping, and minimizing food waste in January.
- **Adam Peterson** of Dow Corning took us on an amazing journey through silicone chemistry and its applications in February.

Don't miss out on two seminars coming our way:

- **John Bissell**, co-founder and CEO at Micromidas Inc. and one of Forbes "30 Under 30" in 2014, has raised more than \$30 million in financing for his company. On Tuesday, March 15 he will talk about the challenges and joys of founding a start-up. *This seminar will be held at the Michigan Molecular Institute at 1910 W. St. Andrews Rd. in Midland.*
- **Jeff Zawisza**, Fellow at Dow Chemical, will focus on current technologies, applications, and exciting developments in additive manufacturing. This seminar will be held on April 27; please check www.aiche.org/community/sites/local-sections/mid-michigan/events for the seminar location.

Seminars meetings are held 6–8 pm on the dates listed above. Talks begin at 7 pm. Light snacks are provided for the 6–7 pm social hour prior to the talk.

Continuing education hours (CEHs) certificates are issued to professional engineers who require them for license renewal per Michigan LARA regulations.



Mid-Michigan AIChE and Midland ACS joint seminar in October with James S. Bus (left), introduced by Patrick Smith.



Adam Peterson engages the audience with parts and products produced using silicone.



Mid-Michigan AIChE members networking and catching up with colleagues and friends prior to the evening seminar.

Announcement: Annual Mid-Michigan AIChE Spring Banquet

Retirement Living: Opportunities to Live Out Passions and Address Pressing Needs

KEYNOTE SPEAKER: VICTOR ATIEMO-OBENG, DIRECTOR, SAFE WATER TEAM

Tuesday, May 24, 2016, 5:30–9 pm, Great Hall Banquet and Convention Center, Midland, MI

“Life in retirement has become an adventure of sustainable living and social entrepreneurship. In this presentation, I will share several opportunities that are allowing me to live out my passions while addressing basic pressing needs.

“I will highlight the adventurous work with the Safe Water Team promoting and enabling the distribution of Hydrad[®] Biosand filters to bring clean, safe water to many in need of it in Kenya, Ghana and the Dominican Republic. I will describe several challenges we face in this adventure as well as several effective tools and approaches that are contributing to success.”

—
Victor Atiemo-Obeng is engaged in an adventure of sustainable living and social entrepreneurship in retirement from The Dow Chemical Company after an illustrious career of engineering science research and practice.

He continues to judge for the US EPA P3: “People, Prosperity and the Planet Student Design Competition for Sustainability”, having done so every year since 2009. As a National Board member-at large of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE), he perseveres in his work to nurture interest in STEM

for junior and high school students of under-represented groups.

Since 2010, he has worked with the Ghana Baptist Vocational Training Center exploring opportunities for sustaining the very necessary work of rescuing young women from exploitation and empowering them for fulfilled living in society.

Victor is a Director of the Safe Water Team which promotes and enables the distribution of Hydrad[®] Biosand filters to bring clean, safe water to millions in need of it.

Victor Atiemo-Obeng honed his passion and aptitude for effective engineering science research at The Dow Chemical Company first as a summer intern in 1970. He returned after obtaining his BChE from The Catholic University of America in 1971 and a PhD from the University of Wisconsin-Madison in 1975. He worked at Dow for nearly 34 years and attained the rank of Dow Fellow.

Victor was invited out of retirement to be a Director and Interim Country Manager of Dow Chemical West Africa LLC in 2012 to establish a new office in Accra, Ghana for commercial operations.

Victor served for eight years on the Executive Council of the North American Mixing Forum (NAMF) a division of AIChE, and was co-



editor and contributing author of the world-acclaimed *Handbook of Industrial Mixing: Science and Practice* published in 2004 by John Wiley & Sons, Inc. A sequel, *Advances in Industrial Mixing* was issued in November, 2015.

Invited by the Board on Chemical Sciences and Technology, National Academies, Victor contributed to the workshop and publication of “Sustainability in the Chemical Industry: Grand Challenges and Research Needs — A Workshop Report” in 2005.

Victor is a Fellow of AIChE, served as member of the National Nominating Committee and International Activities Committee; he was also a Director and Chair of the Mid-Michigan local section. He remains an active member of AIChE, NAMF, NOBCChE, the American Chemical Society, and the American Society for Engineering Education.

2015–2016 Section Awards: Call for Nominations

BY MICHAEL MOLNAR, AWARDS COMMITTEE CHAIR, AND NORM LAKE, PAUL KEHL, AND SHAWN FEIST, AWARDS COMMITTEE

Each year the Mid-Michigan AIChE Section recognizes distinguished members at the Annual Spring Banquet. We hereby call for nominations in the following four award categories:

Chemical Engineer of the Year

Awarded to a distinguished chemical engineer with 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.

Young Chemical Engineer of the Year

In recognition of service to AIChE, technical and professional expertise, and leadership that is superior for an early-career engineer, this award is given to a person with 4–12 years of service

following graduation.

Service to Society Award

Awarded to an engineer with 25–30 years of service who demonstrates long-time commitment to the profession through mentoring engineers and leading community programs that benefit area students and residents.

Noland Poffenberger Award

Presented 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.

Deadline Monday, April 18, 2016.

Please submit nominations letters by email to Michael Molnar, Awards Committee Chair (michael.molnar@hscpoly.com), and copy to Bruce Holden, Secretary (bsholden@dow.com). Include the following information:

- Identify the specific award category for the individual nominee.
- Several paragraphs explaining why this individual is deserving of special recognition.
- Background information, such as a listing of professional accomplishments and service to AIChE, in support of the nomination.
- Contact information (email address and phone number) of the person(s) submitting the nomination.

The award recipients will be announced at the Annual Spring Banquet on May 24, 2016.

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

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