

THE MIDLAND CHEMIST

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Contents

Dow Rising Stars Networking, Bourbon Tasting, and Paired Hors d'oeuvres Event, May 9	1
Upcoming Lectures Sponsored by the Mid-Michigan Section of AIChE	2
Jeremiah A. Johnson to be the 2018 Turner J. Alfrey Visiting Professor, May 23 and 24	3
Glass City Chemistry Conference (CERM 2018), June 14-16	4
100 Years of the Midland Section ACS: Calling All Chairs!	4
Tom Lane Named 2018 Recipient of the Henry F. Whalen, Jr. Award	6
Call for Abstracts for 2018 Fall Scientific Meeting	7
15th Annual ChEMS Research Forum, May 10.....	8
Errata: Preferential Election Procedure Needs Revision	10
Upcoming Dates, Events, and Other Updates.....	11

Dow Rising Stars Networking, Bourbon Tasting, and Paired Hors d'oeuvres Event, May 9

Tina Leaym, Women Chemists Committee, Midland Section ACS

- ★ Please join the Midland Section ACS Women Chemists Committee (WCC) for a quality, evening networking event on Wednesday, May 9, 5:30 – 8:00 PM.
- ★ Hear presentations from Dow's five Rising Star Award winners, and partake in bourbon and hors d'oeuvres pairings at the Midland Country Club.
- ★ Enjoy four courses such as Roasted Pheasant with Hazel Nuts, paired with Elijah Craig.
- ★ Sign up on the Midland Section ACS website by clicking on the SignUpGenius link at <http://www.midlandacs.org/>.
- ★ See the flyer on page 2 for additional details, and open/copy the event to your calendar.



The Midland Section of the American Chemical Society
Women Chemists Committee Presents:

Dow Rising Stars



Networking ★ *Bourbon Tasting* ★ *Paired Hors d'oeuvres*

- ★ Hear from Dow's FIVE Rising Star Award Winners!
- ★ 4 Matched Hors D'oeuvres
- ★ Bourbons: Angel's Envy, Knob Creek, others

Wednesday, May 9th, 2018
5:30 pm

The Midland Country Club
1120 W. St. Andrews, Midland MI

RSVP by May 1st

Tickets are \$50/members \$60/nonmembers
Reserve your ticket on the Midland ACS website:
www.midlandacs.org

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Dr. Beth Lorsbach



Dr. Jaime Curtis-Fisk



Dr. Mindy Keefe

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Dr. Beata Kilos-Réaume

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Dr. Ida Chen

Upcoming Lectures Sponsored by the Mid-Michigan Section of AIChE *Ron Leng, Program Chair, Mid-Michigan AIChE*

All Midland Section ACS members are cordially invited to attend any of several invited-speaker events hosted by the Mid-Michigan Section of the American Institute of Chemical Engineers (AIChE). The evening meetings will be held at the Grand Traverse Pie Company, 2600 North Saginaw Road, Midland. Admission is free and complimentary sandwiches will be available, first come, first served at 6:00 PM with the presentations starting around 6:30 PM. Meeting times and locations are subject to change, so please check the [Mid-Michigan AIChE Events](#) website for updates to the schedule. For more information or questions, contact Ron Leng at 989-636-6158 or rbleng@dow.com, or Ted Calverley at 989-636-2881 or emcalverly@dow.com.

- **Mark Weick**, Dow Global Sustainability Director – Keynote Speaker, Annual Spring Banquet
Sustainability: The Chemical Engineer's Role in the Future
Tuesday, May 22, 2018, 5:30-9:00 PM, Great Hall Banquet & Convention Center, 5121 Bay City Road, Midland

Glass City Chemistry Conference (CERM 2018), June 14-16

Christina Bodurow, ACS District II Director

I'm just providing a quick update here on the June 2018 "CERM" meeting. As had been communicated previously, the "official" CERM meeting was cancelled due to lack of adequate preparation, but the brave Toledo Section leaders have stepped in and made lemonade out of some lemons that they were handed. They will be hosting a "Glass City Chemistry Conference" in its place. The details are outlined below.

The Glass City Chemistry Conference (CERM 2018) is scheduled for June 14-16, 2018, on the University of Toledo campus. The conference starts on Thursday evening, June 14, with a social and dinner, 5:30 – 10:00 PM. A keynote is also planned.

Friday, June 15, will offer a full day of oral presentations and workshops, including programming for undergraduate and graduate students, as well as a student social in the evening. Posters will be available all day on Friday, with authors present from 5:30 – 7:00 PM. Some of the divisions that will be hosting sessions include Inorganic Chemistry, Organic Chemistry, Biochemistry, Nanochemistry, and Chemical Education.

Saturday, June 16, is Teacher's Day, from 8:30 AM – 2:30 PM, and will include oral presentations and workshops.

The abstract submission portal and the early bird registration portal are now both available online at <https://www.acs.org/content/acs/en/meetings/regional/2018-gcc.html>

Nearby hotels include: (1) Radisson on the University of Toledo Medical Campus, (2) Holiday Inn Express and Suites Toledo West at I-475 and Secor Road, Toledo, (3) Hampton Inn and Suites Toledo/Westgate at I-475 and Secor Road, Toledo, and (4) Red Roof Inn Toledo-University at I-475 and Secor Road, Toledo.

I would like to heap loads of praise on Brenda Snyder, Edith Kippenhan, Robin Preston, and Starleeta Gaddis-Parker for helping to navigate the twists and turns to support this meeting. I will be attending, and if anyone is in the Toledo area in mid-June, please do join us!

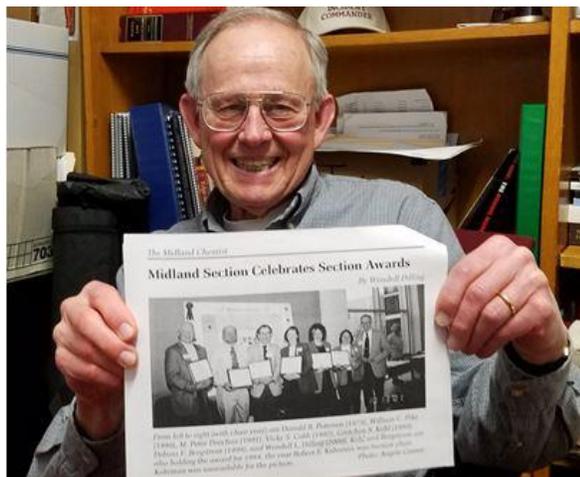
100 Years of the Midland Section ACS: Calling All Chairs!

Gina Malczewski, 100th Anniversary Committee, Midland Section ACS

The 100th anniversary exhibit planning effort is making progress, although we are still in a period of waiting for additional funds to come along. We have received an additional \$10,000 from the Local Section for our effort (for a total of \$20,000), and a \$1,000 mini-grant from ACS Corporate Associates. We have applied for grants with several other area foundations and should hear the results by or during the summer.

Plans are being made to utilize two Central Michigan University Museum Studies Program students this summer to focus on and finalize the content of the exhibit and to move forward on the design and construction, and on creating an Internet presence. Please be on the lookout for notifications about upcoming fund-raising events, and here's another reminder that matching grants are still available for those who wish to contribute directly to the Midland ACS Historical Project Fund at the Midland Area Community Foundation.

Meanwhile, we are still looking for artifacts. As shown below, we are delighted to discover photos and learn of other items that highlight our history. **Wendell Dilling** (photo below left, courtesy of Jay Martin, Director of the CMU Museum Studies Program) is holding a photograph showing a number of Midland Section Chairs with their respective years of Outstanding Section Awards from the National ACS, all received for our longstanding and ongoing excellent programs.



The names of the Midland Section ACS Chairs in the blown-up upper right photo are (left to right with their year of Section Chairmanship): Donald R. Petersen (1973), William C. Pike (1990), M. Peter Dreyfuss (1991), Vicky S. Cobb (1992), Gretchen S. Kohl (1993), Debora F. Bergstrom (1999), and Wendell L. Dilling (2000). Kohl and Bergstrom are also holding the award for 1994, the year that Robert E. Kohrman was the Midland Section Chair.

Added note from Wendell: All of these awards were bestowed on the Midland Section for being recognized as an outstanding local section. What's special is that these seven Section Chairs are holding the Outstanding Section Award for the year that they were the Section Chair (1973, 1990, 1991, 1992, 1993, 1994, 1999, and 2000). These are the first eight such awards that the Midland local section won. Bob Kohrman was missing from the photo, but the award for his year is in the photo. The person at the far right of the photo (Pat Dreyfuss) was not part of our group. We have now won a total of 19 Outstanding Section Awards (and counting). Unfortunately, we will never be able to obtain another comparable photo because at least one of the past Section Chairs for an Outstanding Section year is deceased.

Back to Gina, again: Speaking of chairs, if you are a past Midland Section Chair or remain in touch with one who lives outside of our area, please e-mail us or have them contact us. We would like to include as many Past Chairs as we can for events at or before the exhibit opening next year. Maybe we can even come close to creating an updated version of the picture above!

If, as a Past Chair, you have items to contribute to our archives, or to our local section, or artifacts for the exhibit, please let us know (reginamalczewski@gmail.com). Thank you!

For those who may be interested, the more recent Midland Section ACS Chairs include the following individuals, from 1959 to 2017:

1959	Etcyl H. Blair	1986, 1996	Thomas H. Lane
1960	John W. Gilkey	1987, 2001	George W. Eastland
1961	Rodney D. Moss	1988	Billy M. Williams
1962	Ethan C. Galloway	1989, 1993	Gretchen S. Kohl
1963	Ogden R. Pierce	1990	William C. Pike
1964	Carleton W. Roberts	1991	M. Peter Dreyfuss
1965	Robert M. Wheaton	1992	Vicky S. Cobb
1966	Malcolm Chamberlain	1994	Robert E. Kohrman
1967	Donald R. Weyenberg	1995	Fran K. Voci
1968	Douglas A. Rausch	1997	Joan M. Sabourin
1969	Kenneth L. Burgess	1998	Arthur G. Smith
1970	Gordon E. Hartzell	1999	Debora F. Bergstrom
1971	C. Elmer Wymore	2000	Wendell L. Dilling
1972	Jack F. Mills	2002, 2011	J. Pat Cannady
1973	Donald R. Petersen	2003	Michael J. Owen
1974	Gary E. LeGrow	2004	Joe Ceraso
1975	Alvin E. Bey	2005	Patrick B. Smith
1976	John A. Schneider	2006	Buford Lemon
1977	Bruce P. Thill	2007	Dee A. Strand
1978	Christian T. Goralski	2008	Dorie Yontz
1979	Theodore E. Tabor	2009	Angelo Cassar
1980	H. Franklin Stewart	2010	John D. Blizzard
1981	Jack P. Arrington	2012, 2015	Regina Malczewski
1982	William E. Dennis	2013	Wayde V. Konze
1983	William D. Watson (10-83)	2014	Michelle Cummings
1983-1984	Bob A. Howell	2016	Jaime Curtis-Fisk
1985	James K. Pierce	2017	Anne M. Kelly-Rowley

Tom Lane Named 2018 Recipient of the Henry F. Whalen, Jr. Award

Steve Keinath, Co-Editor, The Midland Chemist



The ACS Division of Business Development and Management is pleased to announce the 2018 recipient of the Henry F. Whalen, Jr. Award for Excellence in Business Development and Management in the Chemical Enterprise. This year's recipient is **Dr. Thomas (Tom) H. Lane**, a longstanding and active member of the Midland Section of the American Chemical Society.

During Tom Lane's thirty-five years with Dow Corning Corporation, he made significant contributions as a scientist, director, and technical leader. He explored both silicon and computational chemistry and led the corporation on a journey into Silicon Biotechnology. He is widely recognized for his leadership skills across businesses, functions, and disciplines. He was a vital contributor to the strategic management team during the breast implant controversy. Tom has inspired numerous other colleagues to engage in educational outreach, and to make a difference.

Tom has also held academic positions on both sides of the Atlantic and is a staunch advocate of K-12 educators, chemistry, and the students of our discipline.

Tom was the 2009 National ACS President, where he was the “public face” of chemistry. His ongoing commitment to inclusion helped to re-establish the Society’s relationship with our “sister” Societies, including NOBCChE (National Organization of Black Chemists and Chemical Engineers), AISES (American Indian Science and Engineering Society), and SACNAS (Society for the Advancement of Chicanos/Hispanics and Native Americans in Science).

This prestigious award will be presented to Tom Lane at a reception during the Fall ACS National Meeting in Boston, August 19-23, 2018. Please watch for further details to be announced.

Call for Abstracts for 2018 Fall Scientific Meeting
Luqing Xi, 2018 Fall Scientific Meeting Committee, Midland Section ACS

Chemistry is Out of This World!

American Chemical Society Midland Section
FALL SCIENTIFIC MEETING
Saturday, October 13, 2018
Curtiss Hall, Saginaw Valley State University

CALL FOR ABSTRACTS
Oral & Poster Presentations

Registration: Follow the Sign Up Genius Link at <http://www.midlandacs.org/>
Deadline: September 21st, 2018
Please submit title & 300 word abstracts to (ACSmidland2018@gmail.com)
Deadline: September 16th, 2018

Sponsored by ACS Midland Chapter and SVSU Chemistry Club

15th Annual ChEMS Research Forum, May 10

Philip Eisenlohr, MSU ChEMS Department

The Department of Chemical Engineering and Materials Science (ChEMS) at Michigan State University would like to invite you to join us at the 15th annual ChEMS Research Forum on Thursday, May 10, 2018. The forum is a full-day event, running from 9:00 AM to 4:30 PM, and will be held at the Huntington Club at Spartan Stadium, 325 West Shaw Lane, East Lansing, on the campus of MSU.

The 15th annual ChEMS Research Forum will showcase departmental research advances in the areas of:

- Energy and Sustainability
- Nanotechnology and Materials
- Biotechnology and Biomedical Engineering

The one-day program will feature three invited plenary speakers, oral presentations from faculty and students, and an extended poster session describing the latest department research results.

Keynote Speakers:



- **Brad L. Boyce** – Materials, Physical, and Chemical Sciences Center, Sandia National Laboratories
- **V. Bobby Bringi** – AFEX Project Director, Chemical Engineering and Materials Science, Michigan State University
- **Shiwang Cheng** – Chemical Engineering and Materials Science, Michigan State University
- **Balsu Lakshmanan** – General Motors
- **Adam Pilchak** – Air Force Research Laboratory

Keynote Topics:

- **Stochastic performance of additively manufactured alloys**
Agile qualification of additively manufactured (AM) structural components requires rapid, high-throughput post-process measurements of material properties. To this end, we have developed a tensile testing methodology that permits >200 tensile tests per day with no compromise in data quality. This method has been used to explore stochastic mechanical property distributions of alloys produced by laser powder bed fusion (selective laser melting). Substantial differences were revealed between vendors, and between builds for a single vendor. Detailed microstructural and fractographic analysis of weak statistical outliers reveals rare processing defects that limit reliability. For example, in one study on 945 tensile bars from 8 builds on one machine, a small subset suffered from exceedingly low ductility associated with large internal, interconnected pore networks oxidized during heat treatment. The high-throughput testing

provides a pathway to rapidly qualify process improvements that eliminate such rare defects. For example, Hot Isostatic Pressing (HIP) is a well-known manufacturing process to mitigate internal porosity. Using the same testing methodology, we demonstrate a ~100% improvement in ductility with a simultaneous ~15% increase in strength and a 7% increase in modulus associated with the elimination of internal porosity. In spite of these improvements, there remain latent defects in the additive manufactured material that prevent the material from achieving a mechanical performance envelope equivalent to the conventional wrought product.

- **Challenges in Commercializing Early-Stage Technologies: The AFEX Story**

AFEX technology, developed at MSU, is an ammoniation process that makes the sugars comprising hemicellulose and cellulose more accessible to enzymatic hydrolysis. Using AFEX treatment, agricultural residues such as rice straw and corn stover can be upgraded into a nutritious cattle feed ingredient or into a fermentation feedstock for production of bio-based fuels and chemicals. MSU is leading a global consortium to evaluate the potential of AFEX technology in developing nations and to promote technology scale-up and adoption. This lecture will cover some of the technical and regulatory challenges that are being addressed in this project and will reflect on the challenges inherent in transitioning promising technologies toward market and greater societal impact.

- **Big effects of small sticky nanoparticles on the macroscopic properties of polymer nanocomposites**

Polymer nanocomposites (PNCs) with small nanoparticles, such as fullerene, polyhedral oligomeric silsesquioxane, and their derivatives, typically end up in a reduction in the glass transition and viscosity at low nanoparticle loadings and a gelation at high loadings of nanoparticles. Consequently, the usage of small nanoparticles is largely eliminated, and the role of small nanoparticles is not well understood. In this presentation, we demonstrate that well-dispersed, small (diameter ~1.8 nm) nanoparticles with attractive interactions can lead to unexpectedly large and qualitatively new changes in PNC structural dynamics in comparison to conventional composites based on particles of diameter ~10–50 nm. At the same time, the zero-shear viscosity at high temperatures remains comparable to that of the neat polymer, thereby retaining good processibility and resolving a major challenge in PNC applications. Our results suggest that the nanoparticle mobility and relatively short lifetimes of nanoparticle–polymer associations open qualitatively new horizons in tunability of macroscopic properties in nanocomposites with high potential for the development of new functional materials.

- **Balancing performance and risk in fracture-critical aerospace components**

Registration, lunch, and refreshments are complimentary, but pre-registration for the forum is requested. Please register for the event at [2018 ChEMS Research Forum](#).

For more information, call the MSU ChEMS Department at 517-355-5135, or send an inquiry by e-mail to chems@egr.msu.edu.

Errata: Preferential Election Procedure Needs Revision
Wendell L. Dilling, Historian and Director, Midland Section ACS

Appended below is a corrected version of the last four paragraphs and the last table of an article of the same topic that appeared in the March 2018 issue of *The Midland Chemist*, pp 10-13. The two numbers shown in bold face type in the table and the two numbers shown in bold face type in the second to last paragraph have been changed.

The original numbers were not what I had intended to show, and I regret these errors. If anyone had tried to follow the analysis in the original article they would have found my error. These were not actual vote counts, only hypothetical ones for illustrative purposes. However, the conclusion drawn from this analysis remains unchanged.

– (Start of corrected portion) –

If the candidates that were “eliminated from further consideration” above were only “eliminated in this stage of the vote counting” the results could have been different. Because these possible vote distributions were not reported a hypothetical set of votes was used as an example as follows:

	Round 1	Round 2	Round 3	Round 4	Round 5
Wayne E. Jones, Jr.	146	159	187		
Barbara A. Sawrey	101	120	159	148	169
Bonnie (Helen A.) Lawlor	68	81		139	170
Kenneth P. Fivizzani	50			60	
Total	365	360	346	347	339

Rounds 1-3 were the same as reported in *C&EN*. These vote counts were only used to determine the first winner (Jones). At this point Lawlor and Fivizzani had not been eliminated for determining the second winner. They were only “eliminated in this (the first) stage of the vote counting” to determine the first winner.

To determine the second winner the vote counters reverted to the vote counts in Round 1 and added the second-preference votes on the ballots where Jones was the first-preference. These hypothetical second-preference votes were distributed as follow: 47 votes to Sawrey, **71** votes to Lawlor, and 10 votes to Fivizzani (**18** voters who voted for Jones as a first-preference did not vote for a second-preference). The addition of these second-preference votes to the original first-preference votes in the Round 1 column gave the results in the Round 4 column. No candidate had a majority in Round 4 so Fivizzani was eliminated. The 60 next-preference votes were distributed 21 votes to Sawrey and 31 votes to Lawlor (8 voters did not vote for a next-preference) which gave the results in the Round 5 column where Lawlor had a majority of the votes and was the second Director-at-Large elected.

Thus, counting all the pertinent next-preference votes could have resulted in a different winner than the one actually reported.

– (End of corrected portion) –

Upcoming Dates, Events, and Other Updates

- May 7 (7:00 – 8:00 PM) – ACS Board meeting, MCFTA Board Room (in person), or via a WebEx conference call connection at [Midland Section WebEx Board Meeting May 2018](#), meeting number/access code: 717 852 528, phone number: 989-633-1166.
- May 9 (5:30 – 8:00 PM) – Dow Rising Stars Networking, Bourbon Tasting, and Paired Hors d’oeuvres Event, Midland Country Club, 1120 West St. Andrews Road, Midland. RSVPs are requested by May 1. Tickets are \$50 for ACS members and \$60 for non-ACS members. Sign up on the Midland Section ACS website by clicking on the SignUpGenius link at <http://www.midlandacs.org/>. For more information or any questions, please contact Tina Leaym at tina.leaym@dowcorning.com.
- May 10 (9:00 AM – 4:30 PM) – 15th Annual ChEMS Forum, Huntington Club at Spartan Stadium, 325 West Shaw Lane, East Lansing, on the campus of Michigan State University. Registration, lunch, and refreshments are complimentary, but pre-registration for the forum is requested. Please register for the event at [2018 ChEMS Research Forum](#). For more information, call the MSU ChEMS Department at 517-355-5135, or send an inquiry by e-mail to chems@egr.msu.edu.
- May 11 – **Deadline for preregistration for the Turner J. Alfrey visiting professorship lecture series, *Precision in Macromolecular Synthesis: When, Where, and How Much Do the Details Matter?***, presented by Professor Jeremiah A. Johnson, Department of Chemistry, MIT. Dates and time: May 23–24, 9:00 AM – 4:00 PM (both days). Location: MSU St. Andrews, Midland. To preregister, please go to <https://johnson-lecture.eventbrite.com>. For additional information, see the flyer on page 3 of this newsletter.
- May 22 (5:30 – 9:00 PM) – MMAICHe Annual Spring Banquet, Keynote Lecture – *Sustainability: The Chemical Engineer’s Role in the Future*, presented by Mark Weick, Dow Global Sustainability Director. Location: Great Hall Banquet & Convention Center, 5121 Bay City Road, Midland. Meeting times and locations are subject to change, so please check the [Mid-Michigan AIChE Events](#) website for updates to the schedule. For more information or questions, contact Ron Leng at 989-636-6158 or rbleng@dow.com, or Ted Calverley at 989-636-2881 or emcalverly@dow.com.
- May 23–24 (9:00 AM – 4:00 PM) – Turner J. Alfrey visiting professorship lecture series, *Precision in Macromolecular Synthesis: When, Where, and How Much Do the Details Matter?*, presented by Professor Jeremiah A. Johnson, Department of Chemistry, MIT. Location: MSU St. Andrews, Midland. This event is complimentary, but preregistration is requested by May 11 at <https://johnson-lecture.eventbrite.com>. For additional information, see the flyer on page 3 of this newsletter.
- June 4 (7:00 – 8:00 PM) – ACS Board meeting, MCFTA Board Room (in person), or via a WebEx conference call connection at [Midland Section WebEx Board Meeting June 2018](#), meeting number/access code: 719 144 397, phone number: 989-633-1166.
- June 14-16 – Glass City Chemistry Conference (CERM 2018), University of Toledo, OH. For more information, see <https://www.acs.org/content/acs/en/meetings/regional/2018-gcc.html>. The abstract submission portal and the early bird registration portal are available online at the same website.
- August 6 (7:00 – 8:00 PM) – ACS Board meeting, MCFTA Board Room (in person), or via a WebEx conference call connection (TBD), phone number: 989-633-1166.
- August 19 – 23 – 256th ACS National Meeting & Exposition, Boston, MA. For more information, see <https://global.acs.org/events/256th-acn-national-meeting-exposition/>.
- September 10 (7:00 – 8:00 PM) – ACS Board meeting, MCFTA Board Room (in person), or via a WebEx conference call connection (TBD), phone number: 989-633-1166.
- September 16 – **Deadline for submission of abstracts for the Midland Section ACS 2018 Fall Scientific Meeting.** Please submit a title and 300-word abstract to ACSmidland2018@gmail.com. For any questions, please contact Luqing Xi at lqi3@dow.com.

- September 21 – **Deadline for 2018 Fall Scientific Meeting attendance preregistration.** Please follow the SignUpGenius link at <http://www.midlandacs.org>. For any questions, please contact Luqing Xi at lqi3@dow.com.
- October 1 (7:00 – 8:00 PM) – ACS Board meeting, MCFTA Board Room (in person), or via a WebEx conference call connection (TBD), phone number: 989-633-1166.
- October 13 (Save the Date) – Midland Section ACS 2018 Fall Scientific Meeting, Curtiss Hall, Saginaw Valley State University. Meeting theme: *Chemistry Is Out of this World*. The deadline for submission of abstracts is September 16; please submit a title and 300-word abstract to ACSmidland2018@gmail.com. The deadline for 2018 Fall Scientific Meeting attendance preregistration is September 21; please follow the SignUpGenius link at <http://www.midlandacs.org>. For any questions, please contact Luqing Xi at lqi3@dow.com.
- November 5 (7:00 – 8:00 PM) – ACS Board meeting, MCFTA Board Room (in person), or via a WebEx conference call connection (TBD), phone number: 989-633-1166.
- December 3 (7:00 – 8:00 PM) – ACS Board meeting, MCFTA Board Room (in person), or via a WebEx conference call connection (TBD), phone number: 989-633-1166.

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