

THE MIDLAND CHEMIST

A publication of the Midland Section of the American Chemical Society

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Contents

Chair Column.....	1
2023 Turner J. Alfrey Visiting Professor Lecture Series, June 6	7
Women in STEM: An Innovation Event, June 8	9
52nd North American Si Symposium, June 1 – June 4	10
“Sound Science” Summer Camp, June 19-23.....	11
2023 ACS Central Regional Meeting.....	12
CERM 2023 WCC Luncheon: Skills Beyond the Bench, June 21.....	13
3rd Annual Trivia Night in the Park Event, June 23	14
National Graduate Research Polymer Conference 2023, June 29 – July 1	14
Water Quality Weekend Adventure at Beaver Island, August 4-6	15
19th Annual MSU ChEMS Department Research Forum, August 25	16
2023 Joint Midwest–Great Lakes Regional Meeting.....	18
Midland Section ACS Scholarship Fund Update and Encouragement to Give in 2023.....	19
In Memoriam – Charles F. Raley, Jr.	20
Upcoming Dates, Events, and Other Updates.....	21

Chair Column

Hunter Woodward, Chair, Midland Section ACS



“What Can I Do?”

I unfortunately missed the last deadline for my Chair Column as I was prioritizing an ACS nomination package for a highly appreciated member and colleague. During this weeks-long endeavor collecting letters of recommendation and detailed descriptions of her two decades of volunteer work, I found myself constantly wondering what I could ever do to have as meaningful an impact on students and professionals in the Midland Local Section area, at the National ACS, and in the promotion of the chemical sciences as a whole. I thus decided to write this Chair Column to act as a draft of a living document arguing the opposite – that creating a little impact is easy and drop by drop the impact becomes vast.

It is intimidating to think about a volunteer opportunity at first. There is a horribly large activation energy to nearly any event (Figure 1). It will take an enormous amount of time to plan everything from scratch! You will

need to secure the time of fellow volunteers, the supplies needed, and the venue. And afterwards, how do you measure whether you were successful? The mere thought is intimidating.

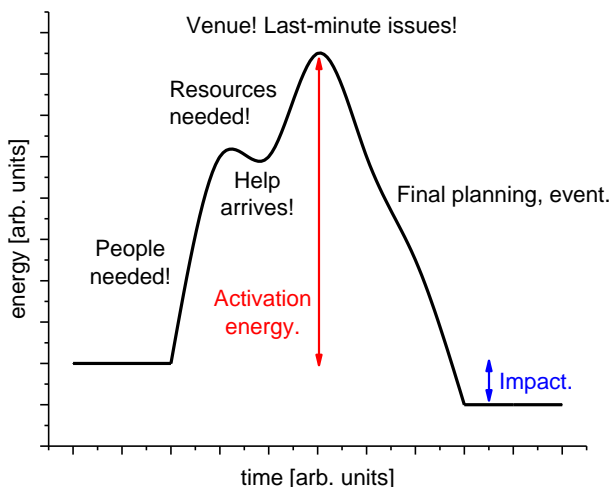


Figure 1. Tongue-in-cheek illustration of the activation energy required to run a successful volunteer event.

But I will now argue the opposite. With plenty of historical guidance, a successful event is easily achievable. The American Chemical Society is a volunteer-dependent non-profit 501(c)(3) dedicated to advancing the broader chemistry enterprise and its practitioners for the benefit of the Earth and its people (acs.org/about). There are nearly limitless resources available to help volunteers easily organize impactful events. Additionally, the Midland Local Section has several successful annual events that are always looking for more volunteers (see the [SignUpGenius](#) link).

For my main thesis, I will walk through two lists of three sections each: The first will list the reasons *why* you should volunteer, the second will list *how* you can volunteer. My hope is that anyone reading this document will feel empowered. Yes, you *can* make a difference! You *can* organize a volunteer event, and it is way easier than you may have thought!

“Why should I volunteer?”

1. It’s a good thing to do.

Of course, everyone reading this knows that philanthropy is good, and I don’t mean to imply that volunteering for the Midland Section ACS is better than any other charity. I will simply give a few examples of ways that volunteering with the Local Section of the American Chemical Society might be worth your valuable time. The American Chemical Society is not dedicated to executing fun science events for local students, teachers, and professionals in order to encourage interest in STEaM. Rather, at the heart of every ACS event lies an intent to influence sustainability and greener chemistry practices, develop better scientists, build trust in the global scientific community, and increase inclusivity among ourselves. Current ACS President Judy Giordan, Ph.D., sees these topics as critical to our mission (jgiordan.com/acsandthefuture). In addition, change drivers outside of our immediate community are affecting the way we operate as scientists and educators (acs.org/content/dam/acsorg/about/strategicplan/change-drivers-2020.pdf). Most aspects of our volunteer events touch upon these pivotal topics. Much more could be said here but suffice it to say that the impact of ACS volunteers in the local community can influence the promotion of chemical sciences on a global scale.

2. It's good for you and your career.

Quickly mentioning the personal health benefits of philanthropy ([doi/10.1177/002214650704800408](https://doi.org/10.1177/002214650704800408)) and the fact that local retired scientists are extremely valuable volunteers, giving back to the community is good for one's career. At the most basic level, many schools and universities require community service. Going slightly farther, many awards,¹ scholarships, and career opportunities reward those with a history of volunteering to positively impact students, teachers, and professionals in their field. Here is a line item from the scholarships available through the Midland Community Foundation (midlandfoundation.org/scholarships/):

“Description (1,500 characters or less) of any long-term volunteer or community service activities you have been involved in (especially those that demonstrate commitment to your career choice) and what doing these activities has meant to you.”

Similar requirements exist for promotions within your career, be it in academia, government, or industry. Such activities are exhaustively beneficial. My employer, Dow, occasionally gives me paid time off to volunteer locally, subsequently advertises their commitment to the community (corporate.dow.com/en-us/locations/michigan), and then uses my dedication to my community and my science to consider my next promotion. In addition to local schools and universities, many volunteer opportunities exist within the professional community (mmtg.midlandacs.org/), and you can even influence from multiple directions (e.g., STEaM and inclusion by volunteering with the Local Section ACS Diversity & Inclusion Committee (diversity@midlandacs.org)). As someone working in industry, my career progression is in part determined by my impact on the development of younger scientists. In most scientific careers there is a ceiling that cannot be breached unless one gives back to their field. The ACS acts as a tool that *you* can use to elevate your career potential, expand your networks, inspire future generations, and build global communities that provide scientific solutions.

3. Impact is autocatalytic.

In addition to how volunteering might personally benefit you, the initial impact from organizing a local event is much larger than the few dozen students, teachers, or colleagues you may have influenced that day (Figure 2). Each of those people then has the opportunity to influence their friends, colleagues, relatives, etc. They may feel inclined to volunteer themselves, or to pursue a career creating a more sustainable chemical industry, or simply may have a greater appreciation for the value of chemistry in our daily lives.

How can we make a difference? Very slowly. Every single event brings a little bit more influence to your personal portfolio. Who knows, in two decades, your manager or the Chair of your Local Section ACS might be reading through your paperwork,² collecting letters of recommendation for you, and thinking “how could I ever hope to make as much of an impact?”



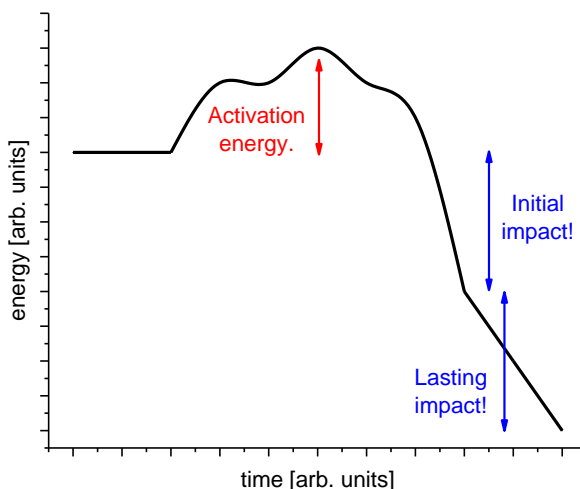


Figure 2. Illustration of the true impact of an event, including the impact to your career, your community, and to every student or colleague that you then inspire to pursue impactful opportunities of their own.

“I’m interested! How can I get started?”

4. Never travel alone. Use the buddy system.

Every volunteer opportunity becomes exponentially easier with each additional volunteer. Having friends and colleagues to help with even small tasks can be huge for your morale. Tackling a volunteer opportunity alone can be problematic. First, you often feel stranded in a tortured and aggressive sea of to-dos. You want something from other people and are vulnerable when things don’t go well.³ Second, there are constant pressures from your career and family that understandably force you to place philanthropy on the backburner. Having even a single co-volunteer is immensely helpful during the planning and execution of an event. In summary, find at least one colleague before you get started.

5. Tools are available, both locally and nationally.

Okay, I have a buddy, but where do I start? This is the easy part! The ACS has loads of resources dedicated to helping volunteers plan and execute events.

On the national level, there are detailed descriptions of science demos for grade school students and teachers (institute.acs.org/outreach-training-program and acs.org/kids), including sources for where to buy supplies and personal protection equipment (PPE). There is also safety training (institute.acs.org/acs-center/lab-safety/education-training), which is extremely valuable for younger students and burgeoning scientists.

From a professional development standpoint, there is the new ACS Speaker Directory ([ACS-Speaker-Directory](#)) where you can be connected to hundreds of available speakers for in-person or virtual events. You can even submit yourself as a possible speaker for other Local Sections.

You can also borrow ideas from other Local Sections via the ChemLuminary Awards website (acs.org/funding/awards/chemluminary) or the Science Café website (acs.org/officer-toolkit/engage-your-members/science-cafes). The latter offers \$500 mini-grants to host events – no stress required (Figure 3).

Topic Ideas	Choose a Venue and Speakers	Plan, Budget, and Promote	Evaluate	Tips for Speakers	Additional Resources
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Topic Ideas

Below is a partial list of topic ideas, sorted alphabetically. Any topic that would be of interest to the general public would make a great Science Café topic.

- Alternative Energy Sources
- Biofuels & Bioenergy
- Careers in Transition
- Chemistry & Science Careers
- Chemistry of Food (Chocolate, Beer, Wine, etc.)

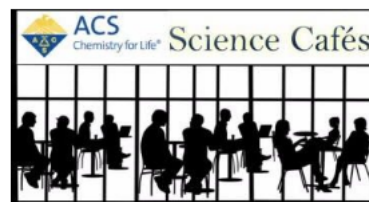


Figure 3. Screenshot of the Science Café website, highlighting the details available to help plan an event.

From the Midland Local Section, there are detailed descriptions of Committee tasks and event planning available via the Midland Section Handbook (midlandacs.org/midland-acshandbook-appendices, Figure 4). Additionally, existing local event leaders are constantly looking for volunteers – we use [SignUpGenius](#).

10. Senior Chemists Committee (Silver Circle)

a. Function

The ACS Silver Circle is intended for members, especially retirees, whose life experiences have given them common interests and valuable knowledge that can be shared with others. The purpose of the committee is to focus on activities this group can sponsor or enjoy that take advantage of the members' unique perspective.

b. Duties and Responsibilities

The leadership of this committee shall:

- Contact local resources to arrange for activities of interest to members by survey or other member input
- Assemble subcommittees to accomplish individual projects
- Work with other ACS Section committees (YCC, Student clubs, Kids and Chemistry, History, etc.) to investigate opportunities for cooperative events or Outreach opportunities

c. Suggested timeline

Month or time-frame	Task
Jan	-Submit a budget for consideration -Develop a draft plan for possible activities during the year
Feb-Apr	-Assist Awards Committee in identifying and submitting nominees for local and National Awards, including Fellows

Figure 4. Screenshot of the Midland Section Handbook, demonstrating the detail in Committee responsibilities.

As for materials, supplies, and money, the non-profit ACS has a budget dedicated to such events. Additionally, there are many awards and grants available to Local Sections for the purposes of improving engagement (acs.org/funding/local-sections). In short, there is funding available to purchase supplies, pay speakers, and reserve venues.

Speaking of venues, many local organizations are happy to collaborate with the non-profit ACS. Our Midland Local Section monthly board meetings (open to all members) are held at MSU St. Andrews, in Midland (standrews.msu.edu), and we regularly rent out space from Creative 360 (becreative360.org), among many other options across our five counties.

You now have your partners, your event, and your resources. Finally, remember that life gets in the way. Pick a reasonable timeline, and then add twenty percent. Organizing one event per year or per quarter is achievable and impactful in all the ways outlined above.

6. Specific events. We need you!

And thus, we arrive at the call to action. Please consider picking a volunteer opportunity or event, finding some friends and colleagues, and accepting the responsibility. For all subsequent steps you will have all the support you need to create a catalyzed, impactful, 100% volunteer-led event (Figure 5).

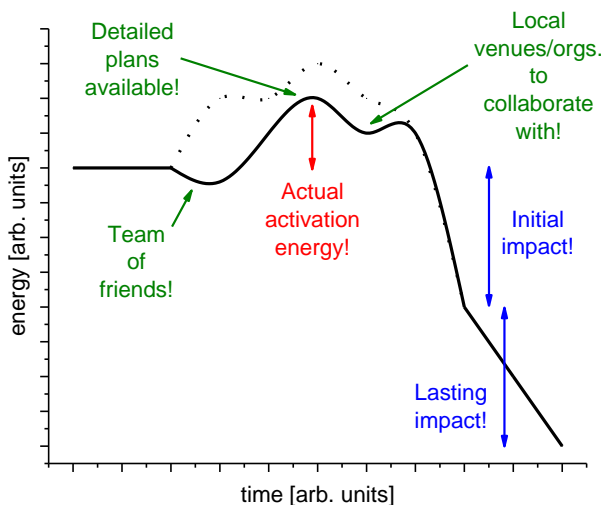


Figure 5. Accurate illustration of the reaction coordinate diagram required to run a successful volunteer event.

And if you are still here, dear reader, and would like to consider the specific needs of the Midland Local Section, here is a list of the Committees that would greatly benefit from your help. Reach out to me if you are interested (chair@midlandacs.org).

- Awards & Recognition
- Membership, Growth, & Retention
- Safety
- Outreach
- Long-Range Planning
- Corporate Agent
- Technology
- Younger Chemists
- Environmental Affairs & Sustainability
- History
- Senior Chemists (a.k.a. Silver Circle)

Thank you for your attention, and your time, and for those of you who already volunteer for the Midland Section ACS or otherwise, thank you for your dedication toward making our special region of Michigan a better place.

W. H. Hunter Woodward, Ph.D., Enthusiastic Chemist

For reference:

¹Opportunities for local section ACS awards include nationally presented ChemLuminary Awards (acs.org/funding/awards/chemluminary) and the Midland Local Section Awards (awards@midlandacs.org). There are also National ACS Awards (acs.org/funding/awards/national). For most of these awards, you need to nominate yourself to be considered, which is perfectly acceptable.

²In twenty years, hopefully not literal paperwork. And hopefully, they'll be sitting in a zero-carbon flying car on their way to a space hockey match.

³Footnote on aspects of volunteer activities “not going well.” This is a fallacy. We are a non-profit volunteer-run organization, and all endeavors are impactful and valued. Most importantly, no volunteer will ever be criticized in any way for their efforts. Any criticisms should immediately be brought to the attention of the Chair (me for the next few months, Erin Vogel, Ph.D., next year, chair@midlandacs.org). If there are issues, then it is entirely my fault, and I will work tirelessly to amend them. The buck stops here.

2023 Turner J. Alfrey Visiting Professor Lecture Series, June 6

Troy Terwillegar, MSU St. Andrews

We are pleased to announce that Prof. Karen L. Wooley from [Texas A&M University](https://www.tamu.edu) will be the guest lecturer for the [2023 Turner J. Alfrey Visiting Professor Lecture Series](#).

Date: Tuesday, June 6, 2023 **Time:** 9:00 AM to 5:00 PM
Location: MSU St. Andrews, 1910 West St. Andrews Road, Midland
Guest Lecturer: Prof. Karen L. Wooley



Professor Karen L. Wooley

Join us at MSU St. Andrews for a full day of lectures with Dr. Karen Wooley of Texas A&M University. Dr. Wooley and her associate, [Ashlee Jahnke](#), will discuss topics related to work being done in the [Wooley Research Group](#).

Karen L. Wooley holds the W.T. Doherty-Welch Chair in Chemistry and is a University Distinguished Professor at [Texas A&M University](https://www.tamu.edu). She studied at Oregon State University (B.S., 1988) and Cornell University (Ph.D., 1993). The first sixteen years of her independent academic career were spent at Washington University, in St. Louis, Missouri, and she then relocated to Texas A&M University in July 2009. In addition to her academic positions, she is the co-founder and President of [Sugar Plastics, LLC](#), and Chief Technology Officer of [Teysha Technologies, LTD](#).

Her research interests include the synthesis and characterization of degradable polymers derived from natural products, unique macromolecular architectures, complex polymer assemblies, and well-defined nanostructured materials. She has designed synthetic strategies to harness the rich compositional, regiochemical, and stereochemical complexity of natural products for the construction of hydrolytically-degradable polymers, which have impact toward sustainability, reduction of reliance on petrochemicals, and production of biologically-beneficial and environmentally-benign natural products upon degradation. These materials are expected to impact the global issue of plastic pollution and address challenges resulting from climate change.

Recent awards include election as a Fellow of the American Academy of Arts and Sciences (2015), National Academy of Inventors (2019), American Association for the Advancement of Science (2020), American Institute for Medical and Biological Engineering (2020), and National Academy of Sciences (2020). She was also named as the 2021 Southeastern Conference (SEC) Professor of the Year.

- Lectures will take place in person at MSU St. Andrews, in Midland.
- Networking luncheon included from 12:30 – 1:30 PM in the MSU St. Andrews Rotunda sponsored by the [Midland Section of the American Chemical Society](#).
- Dr. Wooley and her associate, [Ashlee Jahnke](#), will deliver five, 45-minute talks throughout the day, discussing topics related to the [Wooley Research Group](#).
- Time will be allowed for Q&A and discussion.

Agenda and Lecture Summaries:

9:15 AM – Lecture #1 – Karen L. Wooley

An Overview and Thirty-year History of Wooley's research program – A dimensional evolution from constructing well-defined polymer architectures to assembly of nanostructured polymer materials.

10:15 AM – Lecture #2 – Karen L. Wooley

Synthetic Strategies by Which to Afford Natural Product-derived Functional Polymer Materials that Address Health-Food-Energy-Water Challenges – An emphasis on nanomaterials for environmental and biomedical applications.

11:15 AM – Morning Break

11:30 AM – Lecture #3 – Ashlee A. Jahnke

Solving the Global Plastic Crisis Through Translation of Polymer Research to Real World Solutions – Sugar Plastics, LLC and Teysha Technologies, LTD.

12:30 PM – Lunch Break

2:00 PM – Lecture #4 – Karen L. Wooley

Design of Polypeptide Materials at the Intersections of Recyclable Batteries, Electronic Materials, and Biomedical Devices.

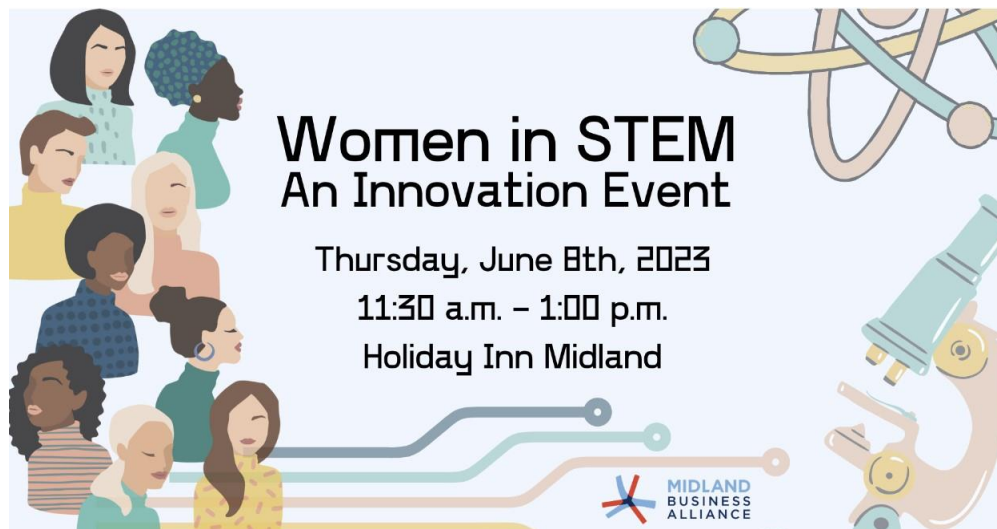
3:00 PM – Lecture #5 – Karen L. Wooley

The Future of Polymer Materials as the World Progresses Along the Energy Transition – Dynamically-reconfigurable Systems to Unconventional Sourcing of Feedstocks – A story of pivots to overcome adversities while pursuing ambitions.

This is a free event, but pre-registration is required to help plan for the networking luncheon. Please share information about this event with others that may be interested in attending. For more information, please contact Troy Terwilligar at terwil24@msu.edu.

Women in STEM: An Innovation Event, June 8

Emily Lyons, Director, Innovation & Small Business, Midland Business Alliance



Event Description:

Women in STEM: An Innovation Event will highlight a few of the local female leaders working in STEM in our community. Women make up 24% of the STEM workforce, but there is room to grow. Join us at the Holiday Inn of Midland to learn more from local female STEM workers on why a career in STEM is a growing opportunity.

Panelists:

Jessica Snyder – Michigan Operations Site Leader, DuPont
Linda Gruber – Site Leader, Hemlock Semiconductor
Sarah Eckersley – VP of R&D for II&I, Dow
Christal Taylor-Lawson – Information Technology Service Manager, Dow
Aundrea Trzaskos – Information Technology Analyst, Dow

Facilitator:

Sarah Gallo – Digital Capability Manager, Dow

Date: Thursday, June 8, 2023
Time: 11:30 AM to 1:00 PM
Location: Holiday Inn of Midland, 810 Cinema Drive, Midland
Admission Fee: \$15 per person (Lunch will be provided)

Contact Information:

Emily Lyons, Director, Innovation & Small Business, Midland Business Alliance, 300 Rodd Street, Suite 101, Midland, MI 48640. Please direct any questions to Emily at elyons@mbami.org or 989-839-9901.

52nd North American Si Symposium, June 1 – June 4
Michelle Cummings, Midland Section ACS



Si June 1 - June 4, 2023

**52nd North American
Si Symposium**

DOW

INVITED SPEAKERS

Take a look at our speakers scheduled for this event



Thibault Cantat
CEA, Université Paris -
Saclay



Matthias Driess
Technische Universität
Berlin



Annaliese Franz
University of California,
Davis



Michel Gagne
University of North
Carolina, Chapel Hill



Lutz Greb
Universität Heidelberg



Kenrick Lewis
Momentive Performance
Materials, Inc.



Tom McCarthy
University of
Massachusetts, Amherst



Yumiko Nakajima
National Institute of
Advanced Industrial
Science and Technology



Herbert Roesky
University of Goettingen



Lisa Rosenberg
University of Victoria



Michael Sailor
University of California,
San Diego



Cheuk-Wai So
Nanyang Technological
University



Christine Thomas
The Ohio State University



T. Don Tilley
University of California,
Berkeley



Ryan Trovitch
Arizona State University

Hosted by Dow in Midland, Michigan

<https://web.cvent.com/event/dcf0afdf-fa6f-433e-beba-c065f0d12735/summary>

“Sound Science” Summer Camp, June 19-23

Gina Malczewski, Outreach Committee, Midland Section ACS

This year’s ACS-MSU summer camp (the sixth in the “STEAM Stew” series) has a musical theme and will take place in-person at MSU St. Andrews (1910 West Saint Andrews Road, in Midland) on June 19-23. The camp targets students going into grades 6 to 8 in the fall and will be FREE. Monday through Thursday, June 19-22, activities will run from 9:00 AM to Noon, and the Friday, June 23 session will run from 9:00 AM to 4:00 PM.

We have many featured speakers, including Dr. Candice Colby-Scott on the topic of human hearing and speech; Angelo Cassar covering math and music; and Brenna Chapman, a practicing Music Therapist from Gladwin. Domingo Vasquez (Musico Lessons) will teach students to play color-coded keyboards, and micro-bit coding will be covered by Dr. Tracy Zhang (MSU) who will help participants to play and compose music on these devices. Josh Allen of INDe Drums (Kalamazoo) will show how materials and shapes affect drum sounds, and Elly Maxwell (Dow Gardens) will be speaking about insect communication (sound production and ears). Believe it or not, molecules can be represented by music and Dr. Bo Majhour (University of Michigan) will discuss how that is done, and how altering structures affect their sounds. Dr. Gina Malczewski will cover multiple topics, including art from sound, sound physics, music and food, and Beethoven and Kandinsky!

On the last day of the summer camp (Friday, June 23), we plan to have a concert with all those involved and display the artwork produced at a reception for parents, students, facilitators, and guests.



If you would like to help on any of these days, a quick background check and brief orientation are required. Please contact Gina Malczewski at reginamalczewski@gmail.com. Registration is open through June 7, or until a maximum of 25 students is reached. The registration link is at <https://standrews.msu.edu/2023/02/12/acs-steam-stew-vi-middle-school-summer-camp-for-rising-6th-through-8th-graders/>.

2023 ACS Central Regional Meeting
Steve Keinath, Co-Editor, The Midland Chemist

Editor's note: The material included within this article was provided in an email message, dated Friday, May 12, 2023, to members of the Central Region of the American Chemical Society.



The **2023 Central Regional Meeting (CERM)** will be hosted by the Detroit Local Section of the American Chemical Society and will focus on the chemistry being pursued within the region. The meeting theme is *Sustainability, the Great Lakes, and Chemistry for the Future*. In addition to symposia and poster sessions concerning organic chemistry, inorganic chemistry, analytical chemistry, physical chemistry, biochemistry, and chemical education, we hope to have sessions relating to advances in battery chemistry and electric automobiles, cannabis chemistry, hydrogen fuel cells, chemical safety, and a circular economy. A career fair and several social events will also be part of the programming.

Meet the CERM 2023 Plenary Speakers



BASF's sustainability journey – the challenges that they are turning into opportunities with their customers and how they are engaging employees to tell their stories

Jason McAlpine



Development of Advanced Olefin Polymerization Catalysts for the Production of Polyolefins with a Lower Energy Footprint

Jerzy Klosin



f-block Elements and the Environment: A Blessing and a Curse

Timothy Dittrich

Registration for CERM 2023 is available by clicking on [Register Now](#).

CERM 2023 WCC Luncheon: Skills Beyond the Bench, June 21
Carmen Folk, 2023 CERM Communications Committee, Detroit Section ACS

2023 SKILLS BEYOND THE BENCH

OWNING YOUR SEAT AT THE BENCH: A CONVERSATION ABOUT IMPOSTOR SYNDROME

CERM 2023 | June 21 @ 12-1:30 at the Henry Hotel



ACS
Chemistry for Life®

AMERICAN CHEMICAL SOCIETY



NOBCCChE®

WITH INVITED SPEAKERS:



Alecia M. Gabriel, Ph.D.

Co-Founder, Director of
Curriculum Development at
The Lab Drawer®
Co-Executive Director at
Motor City STEAM Foundation



Dr. Patricia Coleman Burns

Assistant Professor Emerita at
the University of Michigan

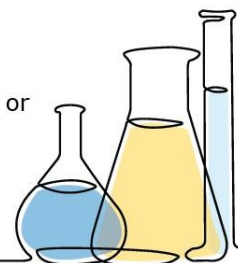
Registration for this luncheon is
\$20 for students and \$45 for professionals
and includes lunch, presentations,
a panel, and networking.



Register for CERM and this workshop using the QR code or
tinyurl.com/cerm23.

SPONSORS:

Detroit ACS | Midland ACS | Huron Valley ACS
Midland NOBCCHE | Regional NOBCCHE



3rd Annual Trivia Night in the Park Event, June 23
Kim Dinh, Diversity & Inclusion Committee, Midland Section ACS

ACS
Chemistry for Life®

AIChE
American Institute of Chemical Engineers

Midland ACS and MMAIChE
Diversity and Inclusion
outdoor event

Food will be provided by
Proper Taco!!

Proper TACO

Registration required (for food only)
<https://forms.gle/t6wdckLxpDDYA6r4A>

RSVP here

3rd Annual Trivia Night in the Park

Friday June 23rd
Networking/BBQ starts @ 5 pm
Teams Trivia starts @ 6 pm

Location: Emerson Park, Shelter D

Please join us for an evening of networking, food, drinks, and trivia! Bring a team (5-6 people) or make one on the spot. BBQ and networking begin at 5:00 PM. Trivia begins at 6:00 PM. Location: Emerson Park, Shelter D, Midland.

Admission is free, but please RSVP so that we will know how much food to prepare. You can respond to this event at <https://forms.gle/t6wdckLxpDDYA6r4A>. For more information or any questions, please contact Kim Dinh at diversity@midlandacs.org.

National Graduate Research Polymer Conference 2023, June 29 – July 1
UofM Macromolecular Science and Engineering Program

The National Graduate Research Polymer Conference (NGRPC) is one of the largest student-run polymer research conferences in the country. This conference series was established in 1994 by the American Chemical Society's Division of Polymer Chemistry (ACS-POLY) to provide polymer science & engineering graduate students the opportunity to present their work, network, and interact with polymer scientists in industry, academia, and government.

National Graduate Research Polymer Conference 2023
June 29 through July 1, 2023
Michigan Union, University of Michigan, Ann Arbor

NGRPC 2023 will be hosted by the [Macromolecular Science and Engineering Program](#) at the University of Michigan. Click [here](#) to meet our organizing committee members.

Water Quality Weekend Adventure at Beaver Island, August 4-6
Dale LeCaptain, Councilor, Midland Section ACS



**Water Quality
Weekend Adventure
Beaver Island, Michigan**



The ACS Midland Local Section H2O Q Outreach Committee invites YOU to explore freshwater chemistry testing and H2O Q volunteer training! Aug. 4-6, 2023

→ Network with ACS colleagues

→ Train to be a H2O Q classroom volunteer

→ Learn about freshwater testing se.cmich.edu/H2OQ

Friday, Aug 4

- Travel to Charlevoix^{\$\$} Michigan for departure via car ferry^{\$\$} or flight^{\$\$}
- Dinner, evening meet & greet at CMUBS lodge

Saturday, Aug 5

- Morning South Beaver Island Excursion – 3 lakes, 1 marsh, 2 bays, a creek, AND the light house!
- Afternoon North Island Visit to St. James – Harbor, Stores, Whiskey Point Brewing, and an early dinner^{\$\$} in town
- Evening adventure - the stories, wildlife, and adventures of Barney's Lake, Protar's House, & a sunset view from Mount Pisgah

Sunday, Aug 6

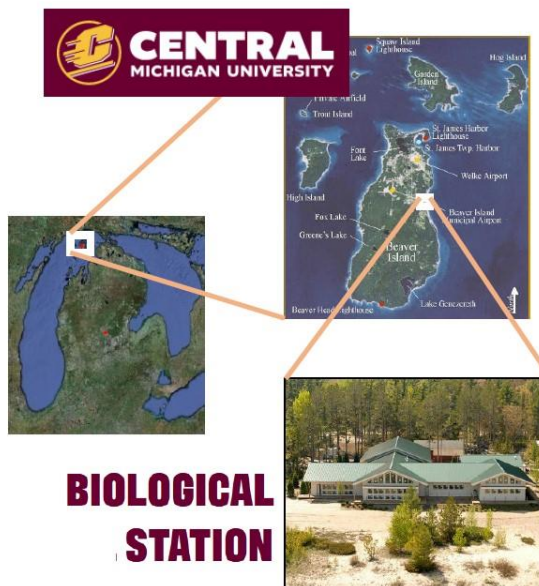
- H2O Q the program, the experiments, and volunteering in the outdoor classroom
- Head back home OR stay for a round of golf^{\$\$}

➤ Lodging & Meals - \$100/person campground cabin OR \$150/person lakefront cottage

\$50/child ages 2-12 are welcome but may be limited for some activities

- Transportation to Charlevoix and onto Beaver Island – at own expense, check out www.bibco.com; www.freshairaviation.net; or islandairways.com
- Ground transportation on Beaver Island - included as scheduled

^{\$\$} indicates at "own expense"



Early registration ends May 22 and will continue until July 15 as space permits.

e-mail Dale.lecaptain@cmich.edu to sign-up and for details

This excursion is brought to you by the H2O Q team of volunteers, the ACS-Midland Local Section, and CMUBS which is a working research/classroom facility allowing this mission aligned volunteering in water quality chemistry outreach. This is not our day job and all scheduled events are subject to weather, time, ambition, and resources. Thank you in advance for understanding and considering to volunteer!

19th Annual MSU ChEMS Department Research Forum, August 25 **MSU ChEMS Department, East Lansing**

The Department of Chemical Engineering and Materials Science (ChEMS) at Michigan State University invites you to join us at the 19th annual ChEMS Department Research Forum on Friday, August 25, 2023. The forum is a full-day event, running from 8:30 AM to 5:30 PM, and will be held at the Spartan Stadium Tower, 325 West Shaw Lane, East Lansing, on the campus of MSU.

The 19th annual ChEMS Research Forum will showcase department research advances in the areas of:

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

The one-day program will feature invited plenary speakers, oral presentations from faculty and students, and an extended poster session describing the latest department research results. While the oral presentations of the program can be joined remotely via Zoom, all poster presentations are in-person only.

If you or your company shares an interest in chemical engineering and materials science, then this event offers a uniquely personal and informal view into the general research directions of the ChEMS department, its current research projects, and, most importantly, an opportunity to get to know the many talented graduate students that are at the heart of it all. Parking next to the Spartan Stadium is free and we hope to welcome you to MSU on August 25!

Keynote Speakers:



- **David Hickey** – Chemical Engineering & Materials Science, Michigan State University
- **Monica Olvera de la Cruz** – Materials Science & Engineering, Northwestern University
- **Daniel Woldring** – Chemical Engineering & Materials Science, Michigan State University

Keynote Topics:

- **There's still room at the bottom: Molecular engineering in battery design and lignin valorization**

Despite more than 60 years since Richard Feynman's 1959 lecture, titled "There's Plenty of Room at the Bottom," and numerous advances in the fields of nanotechnology and molecular engineering,

there remain substantial opportunities to utilize a wholistic understanding of chemical systems for designing chemicals and materials on the molecular scale to influence a macroscale property. One such opportunity is related to the dramatic increase in applications and developments of electrochemical approaches to address global challenges, ranging from grid-scale energy storage and desalination to commercial production of commodity chemicals and environmentally friendly pharmaceutical synthesis. The success of many such promising technologies depends on an ability to control electron flow near the interface between a liquid solution and electrode surface. This is accomplished by utilizing small electrochemically active molecules that can act as either “electron shuttles” for electrocatalysis, or as “energy reservoirs” for energy storage applications depending on their reactivity in the electrochemically activated state. Despite their ubiquity in emerging green energy technologies, critical relationships between structure and properties of electrochemically active small molecules remain poorly understood. Consequently, discovery/implementation of new redox molecules has been slowed by a reliance on the top-down (or “guess and check”) approach.

The Hickey Group utilizes molecular engineering principles to identify, synthesize, and tune electroactive small molecules and polymer materials for a variety of applications related to energy storage, catalysis, and biosensing. I will describe our recent efforts to design redox active molecules for two disparate areas of research: grid-scale energy storage and electrochemically recyclable biomimetic coenzymes. By studying electrochemical mechanisms and understanding molecular interactions at electrode interfaces, we aim to elucidate universal molecular design principles that can be applied across a wide range of cross-cutting research topics.

- **Structure and function of nanocontainers**

Various heterogeneous molecules co-assemble into nanocontainers that mimic bacterial microcompartments, which sequester toxins in bacteria to be able to survive in harsh environments. We describe their assembly by modifying interactions among the different components to design and assemble specific mesoscale organizations that imitate biological nanostructures and functions. Regarding functions that mimic bacterial microcompartments, we describe chemotaxis in microcompartments of different sizes and compositions including hydrodynamic interactions.

- **Antibody engineering against carbohydrate antigens using virus-like particle conjugate immunization and high throughput selection**

This talk will discuss a new method of evolving monoclonal antibody (mAb) binding affinity to solve the notorious challenge of developing therapeutic mAbs against tumor-associated carbohydrate antigens (TACAs). We apply our directed evolution method to develop lead candidate mAbs against TACAs selective to multiple cancers (e.g., pancreatic, ovarian, breast) with strong interactive forces (dissociation constant, $K_D < 10$ nM), making these engineered mAbs ideal for biomarker discovery and molecular imaging.

Pre-registration for the forum is requested. Please register for the event at [2023 ChEMS Research Forum](https://www.chemsforum.org/). For more information, call the MSU ChEMS Department at 517-355-5135, or send an inquiry by email to chems@egr.msu.edu.

2023 Joint Midwest–Great Lakes Regional Meeting
Steve Keinath, Co-Editor, The Midland Chemist

Editor’s note: The material included within this article was provided, in part, in an email message, dated Wednesday, May 24, 2023, to members of the American Chemical Society.



Abstracts are now being accepted for the **2023 Joint Midwest–Great Lakes Regional Meeting of the American Chemical Society (MWGLRM)**. The MWGLRM will be held from Wednesday to Saturday, October 18-21, 2023, in St. Louis, Missouri. Co-hosts for this meeting are the St. Louis and East Central Illinois Sections of the ACS. The venue will be the St. Charles Convention Center in St. Louis.

The theme for the meeting is “**Scale Up Your STEM,**” and will feature plenary speakers, exciting technical sessions and special symposia, poster sessions, regional awards, social events, and a large vendor expo. In addition, there will be special undergraduate programming, chemistry education workshops for high school teachers, and events sponsored by the local Younger Chemists Committees and the Minority Affairs Committees. It is a great opportunity for undergraduate and graduate students to present their research and get to know the Midwest and Great Lakes chemistry communities.

Please visit the [MWGLRM website](#) to find a list of the programming divisions and planned symposia open for abstract submissions. **The deadline to submit an abstract is Monday, July 17, 2023.**



Midland Section ACS Scholarship Fund Update and Encouragement to Give in 2023

Gina Malczewski, Director and Scholarship Committee, Midland Section ACS

In May of 2021, Dr. Wendell and Marcia Dilling issued a challenge relative to growing the Midland Section ACS Scholarship Fund. At that time, they committed \$18,000 of matching money to grow the fund to \$100,000 by matching dollar for dollar all contributions made to the fund until it reached the target goal.

To date, there have been six contributions amounting to \$1,980.76, and recently Wendell and Marcia honored their matching donation commitment by submitting a check in the amount of \$2,000 to the Midland Area Community Foundation, the entity that holds and manages the Midland Section ACS Scholarship Fund.



Dr. Wendell and Marcia Dilling

Wendell and Marcia have recommitted to their original pledge and will continue to provide matching money until their contribution reaches \$18,000, or perhaps a little more upon future reflection. The long-rang goal remains the same, to increase the Midland Section ACS Scholarship Fund principal balance to \$100,000 to enable offering additional and perhaps larger year-by-year scholarships to well-deserving students across the greater Midland Section ACS region.

Although the current balance in the scholarship fund is a little less than where it stood when Wendell and Marcia issued their matching gift challenge (\$60,458.49 as of mid-September 2022), the investment strategies practiced by the Midland Area Community Foundation remain sound. Since May of 2021, the fund balance has decreased a mere 6.9%, pretty remarkable when considering what many of us have been seeing with the value of our own personal retirement accounts.

Continuing to invest now, when the stock market is in a bear market, means that proportionally lower cost shares of stock can be purchased now that will ultimately produce greater yields when the stock market turns around once again.

The Midland Section ACS has been proud to offer scholarships to deserving undergraduate students majoring in a chemical science since 2002. Annually, two to four scholarships are awarded to candidates who have graduated from a high school in one of the Section's five counties (Bay, Midland, Saginaw, Isabella, and Gratiot), are studying at a Michigan university, and are ideally intending to pursue a career in some aspect of chemistry or chemical engineering. Selections are made by a committee and are based on academics, service and extracurricular contributions, and an essay on the student's sources of motivation as well as future plans. Past scholarship recipients are often highlighted in issues of the *Midland Chemist*.

Awards usually range from \$1,000-2,000, depending on the financial performance of the Midland ACS Scholarship Fund (#399) administered through the Midland Area Community Foundation. A long-standing goal of the Midland Section ACS has been to raise the base amount to \$100,000 to serve more students.

Wendell and Marcia Dilling, both chemists and long-time supporters of the Midland Section ACS, are prepared to continue to help us reach that goal by donating up to \$18,000 as part of a challenge grant to the scholarship

fund. **They will match 1:1 any new contributions to the fund at the Midland Area Community Foundation over the next couple years.**

Please consider contributing to this worthwhile cause. **Your donations will help shape the future of chemistry!** If you have any questions about contributing to the Midland Section ACS Scholarship Fund, please call the Midland Area Community Foundation at 989-839-9661. Thank you.

An online donation form can be found through the following link:

[Midland Section American Chemical Society Endowed Scholarship Fund #399](#)

In Memoriam – Charles F. Raley, Jr.
Steve Keinath, Co-Editor, *The Midland Chemist*

Editor's note: The obituary notice for Charles Raley as it appears here is reprinted, in part, from obituary information obtained from the Ware-Smith-Woolever Funeral Home (Midland, MI) website (accessed on Monday, May 8, 2023), and from information printed in the May 1, 2023, issue of *C&EN* (Vol. 101, No. 14, p. 29). Charles was a long-time member of the American Chemical Society. Notably, he was in his 80th year of membership with the ACS at the time of his passing.



Charles Francis Raley, Jr., of Midland, MI, entered eternal life on October 24, 2022, at age 99. He was born May 8, 1923, in Baltimore, MD, to Charles Francis Raley and Cecelia Agnes Scheck Raley, and raised in Wilmington, DE. He was a WWII veteran, serving in the US Navy as an electronics technician in the Philippines and the U.S.

He received bachelor's (1943) and master's (1947) degrees in chemistry from the University of Notre Dame, and a PhD from the University of Delaware in organic chemistry (1950). On June 7, 1947, he married Jane Ann Davis, at St. Peter's Cathedral in Wilmington.

Charles was employed by DuPont; Southwest Research Institute, San Antonio; and in 1957 he joined the Dow Chemical Company, retiring from Dow in 1982 as an associate scientist. He was the author or co-author of 22 US patents and was the inventor of flame-retardant foamed polyethylene. As a member of the American Chemical Society since 1943, he was honored on his 70th anniversary by the ACS in 2013 and was in his 80th year of membership at the time of his passing. He played on a Dow golf team, the Landscrapers, and also enjoyed sailing, car and ice rallying, home building projects, reading, following current events, and cats and dogs.

Charles was preceded in death by his wife of 68 years, Jane, on March 7, 2016, and by his brother, Robert L. Raley. He is survived by three children, Charles Christopher, Lelia Ellen, and Amy Jane Raley; five grandchildren, Charles (Julie), Gregory, and Peter Raley, and Emma and Henry Bedard; and three great-grandchildren, Zoe and Mia Raley, and Madelyn Hill-Raley.

A memorial service will be held in the future. Commemorative contributions may be made to the Toni & Trish House (Auburn, MI) or to a charity of one's choice. Messages for the family may be sent to the care of Chris Raley, PO Box 2481, Gaithersburg, MD 20886.

Upcoming Dates, Events, and Other Updates

- May 1 (7:00 – 8:00 PM) – Hybrid Midland Section ACS Board meeting, MSU St. Andrews, Midland (in person), and via a WebEx conference call connection at [Webex Board Meeting - May 2022](#), Meeting number: 126 651 0648, or by phone at Phone number: 415-655-0001, Access code: 126 651 0648.
- May 3 (5:30 – 9:00 PM) – Midland Section ACS Spring Awards Banquet, Great Hall Banquet & Convention Center, 5121 Bay City Road, Midland. For more information or any questions, please contact Diana Deese, Midland Section ACS Awards Committee Chair, at dkdeese@dow.com or 989-636-9915.
- May 10 (7:00 – 8:30 PM) – MSU St. Andrews Family Astronomy Night, free virtual event. Presentation topic: *Jupiter: King of the Planets (Continued)*. Please see <https://standrews.msu.edu/family-astronomy-night/> for more information about these ongoing monthly programs and to access prior archived presentations.
- June 1-4, 2023 – 52nd North American Si Symposium, to be held at The H Hotel, in Midland. For symposium details and to register, see: [PROGRAM - 52nd North American Silicon Symposium \(cvent.com\)](#). For general questions, please email 52siliconsympos@dow.com.
- June 5 (7:00 – 8:00 PM) – Hybrid Midland Section ACS Board meeting, MSU St. Andrews, Midland (in person), and via a WebEx conference call connection at [Webex Board Meeting - June 2022](#), Meeting number: 126 651 0648, or by phone at Phone number: 415-655-0001, Access code: 126 651 0648.
- June 6 (9:00 AM to 5:00 PM) – 2023 Turner J. Alfrey Visiting Professor Lecture Series program, featuring Prof. Karen Wooley from Texas A&M University, MSU St. Andrews, 1910 West St. Andrews Road, Midland. For more information, please see the accompanying article on pages 7 and 8. This event is free, but pre-registration is required to help plan for the networking luncheon. To pre-register, please click on [2023 Turner J. Alfrey Visiting Professor Lecture Series](#). For additional information or any questions, please contact Troy Terwilligar at terwil24@msu.edu.
- June 8 (11:30 AM – 1:00 PM) – Women in STEM: An Innovation Event, Holiday Inn of Midland, \$15 per person (lunch will be provided). Contact Emily Lyons, Director, Innovation & Small Business, Midland Business Alliance, for any questions at elyons@mbami.org or 989-839-9901.
- June 19-23 (9:00 AM – Noon, Monday to Thursday, and 9:00 AM to 4:00 PM, Friday) – “Sound Science” Summer Camp for students going into grades 6 to 8 in the fall, MSU St. Andrews, in Midland. Free event, but registration is required by clicking on <https://standrews.msu.edu/2023/02/12/acs-steam-stew-vi-middle-school-summer-camp-for-rising-6th-through-8th-graders/>. For more information or any questions, please contact Gina Malczewski at reginamalczewski@gmail.com.
- June 20-23, 2023 – ACS 2023 Central Regional Meeting, Dearborn, MI, hosted by the Detroit Section ACS. Meeting theme: *Sustainability, the Great Lakes, and Chemistry for the Future*. For more information, please see [Home | CERM 2023 \(acscerm2023.org\)](#).
- June 21 (12:00 – 1:30 PM) – CERM 2023 WCC Luncheon event, Skills Beyond the Bench program, *Owning Your Seat at the Bench: A Conversation About Imposter Syndrome*, Henry Hotel, Dearborn, \$20 for students and \$45 for professionals, sponsored by Detroit ACS, Midland ACS, Huron Valley ACS, Midland NOBCCHE, and Regional NOBCCHE.

- June 23 (5:00 PM to ??) – 3rd Annual Trivia Night in the Park event, Emerson Park, Shelter D, in Midland. 5:00 PM – BBQ and networking begins, 6:00 PM – Teams Trivia event starts. Admission to this event is free, but an RSVP is required to help plan for how much food to prepare. Please click on <https://forms.gle/t6wdckLxpDDYA6r4A>. For more information or any questions, please contact Kim Dinh at diversity@midlandacs.org.
- June 29 – July 1, 2023 – National Graduate Research Polymer Conference 2023, hosted by the [Macromolecular Science and Engineering Program](#) at the University of Michigan. For more information, please see the accompanying article on page 14.
- July 17 – **Deadline to submit an abstract for the 2023 Joint Midwest–Great Lakes Regional Meeting**, October 18-21, in St. Louis, Missouri. Meeting theme: *Scale Up Your STEM*. Visit the [MWGLRM website](#) for more information.
- August 4-6, 2023 – Water Quality Weekend Adventure at Beaver Island. Early registration ends on May 22, but will continue until July 15 as space permits. For more information and the tentative day-to-day program schedule, please see the accompanying article on page 15. Send an email message Dale LeCaptain at dale.lecaptain@cmich.edu for more details and to sign up.
- August 7 (7:00 – 8:00 PM) – Hybrid Midland Section ACS Board meeting, MSU St. Andrews, Midland (in person), and via a WebEx conference call connection at [Webex Board Meeting - August 2022](#), Meeting number: 126 651 0648, or by phone at Phone number: 415-655-0001, Access code: 126 651 0648.
- August 13-17, 2023 – ACS Fall 2023 National Meeting & Exposition, San Francisco, CA. This meeting is being planned as an in-person and virtual hybrid meeting. Meeting theme: *Harnessing the Power of Data*. For more information, please see [ACS Meetings & Expositions - American Chemical Society](#).
- August 25 (8:30 AM – 5:30 PM) – 19th Annual MSU ChEMS Department Research Forum, Spartan Stadium Tower, 325 West Shaw Lane, East Lansing. Pre-registration for the forum is requested. Please register for the event at [2023 ChEMS Research Forum](#). For more information, call the MSU ChEMS Department at 517-355-5135, or send an inquiry by email to chems@egr.msu.edu.
- September 11 (7:00 – 8:00 PM) – Hybrid Midland Section ACS Board meeting, MSU St. Andrews, Midland (in person), and via a WebEx conference call connection at [Webex Board Meeting - September 2022](#), Meeting number: 126 651 0648, or by phone at Phone number: 415-655-0001, Access code: 126 651 0648. **Please note: This Board meeting is being held on the second Monday of September, not the usual first Monday of most months due to the Labor Day holiday.**
- September 30 (10:00 AM – 3:00 PM) – *ACS Sustainability Event: How Can You Make a Difference?* Panel discussion at Delta College Midland Campus, 10:00 to 11:30 AM; pizza lunch, 11:30 AM to 12:30 PM; and volunteering opportunity at Midland Recycling Center, 1:00 to 3:00 PM. For more information, please contact Erin Vogel at EVogel@dow.com.
- October 2 (7:00 – 8:00 PM) – Hybrid Midland Section ACS Board meeting, MSU St. Andrews, Midland (in person), and via a WebEx conference call connection at [Webex Board Meeting - October 2022](#), Meeting number: 126 651 0648, or by phone at Phone number: 415-655-0001, Access code: 126 651 0648.
- October 18-21 (Save the Date) – 2023 Joint Midwest–Great Lakes Regional Meeting, St. Louis, Missouri. Meeting theme: *Scale Up Your STEM*. Visit the [MWGLRM website](#) for more information. **The deadline to submit an abstract is July 17, 2023.**

- November 3 or 10 (Tentative – Save the Date) – 2023 Midland Section ACS Fall Scientific Meeting, all day, at Central Michigan University. For more information, please contact Dale LeCaptain, General Chair, at dale.lecaptain@cmich.edu.
- November 6 (7:00 – 8:00 PM) – Hybrid Midland Section ACS Board meeting, MSU St. Andrews, Midland (in person), and via a WebEx conference call connection at [Webex Board Meeting - November 2022](#), Meeting number: 126 651 0648, or by phone at Phone number: 415-655-0001, Access code: 126 651 0648.
- December 4 (7:00 – 8:00 PM) – Hybrid Midland Section ACS Board meeting, MSU St. Andrews, Midland (in person), and via a WebEx conference call connection at [Webex Board Meeting - December 2022](#), Meeting number: 126 651 0648, or by phone at Phone number: 415-655-0001, Access code: 126 651 0648.

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