

THE MIDLAND CHEMIST

A publication of the Midland Section of the American Chemical Society

April 2017, Vol. 54, No. 4

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2017 Midland Section ACS Leadership - Updated

Anne Kelly-Rowley, Chair, Midland Section ACS

Board of Directors: The Board of Directors consists of the officers of the Section (Chair, Chair-Elect, Secretary, and Treasurer), the immediate Past Chair, the Councilors, the Alternate Councilors, the Chair of the Nominations and Elections Committee, and nine Directors, all of whom are voting members. The Councilors, Alternate Councilors, and Directors are elected to three-year terms. All others are elected to one-year terms. The number in parentheses in the list below indicates the final year in office. The asterisks indicate members of the Executive Committee.

Committee Chairs: There are four standing committees: nominations and elections, membership, program, and publicity. All other committees are established by the Board of Directors with Committee Chairs appointed by the Chair of the Midland local section. Below is also a list of the current committee chairs.

Elected (Voting) Board Members		
Chair*	Anne Kelly-Rowley	chair@midlandacs.org
Chair-Elect*	Wenyi Huang	whuang1@dow.com

Secretary*	Kshitish Patankar	secretary@midlandacs.org
Treasurer*	Michelle Rivard	treasurer@midlandacs.org
Past Chair*	Jaime Curtis-Fisk	JLCurtisFisk@dow.com
Councilor (17)	Dale LeCaptain	dale.lecaptain@cmich.edu
Councilor (19)	Tina Leaym	tina.leaym@dowcorning.com
Alternate Councilor (17)	Tami Sivy	tsivy@svsu.edu
Alternate Councilor (19)	Steve Keinath	skeinath54@charter.net
Chair, Nominations & Elections	Wendy Flory	elections@midlandacs.org
Director (17)	Bob Howell	bob.a.howell@cmich.edu
Director (17)	Beata Kilos	BAKilos@dow.com
Director (17)	Dave Stickles	dstick44@chartermi.net
Director (18)*	Michelle Cummings	michelle.cummings@dowcorning.com
Director (18)*	Pat Smith	smithp62@msu.edu
Director (18)*	Kevin Wier	kevin.wier@dowcorning.com
Director (19)	Aswini Dash	a.dash@dowcorning.com
Director (19)	Wendell Dilling	dilli1wl@cmich.edu
Director (19)	Gina Malczewski	reginamalczewski@gmail.com
Committee Chairs (Non-Voting Board Members)		
2019 Central Regional Meeting	Dimi Katsoulis	dimi.katsoulis@dowcorning.com
Awards	Diana Deese	awards@midlandacs.org
Chemistry Olympiad	Michael Tulchinsky	tulchimi@dow.com
Ex Officio Director	Tom Lane	maingee1@gmail.com
† Fall Scientific Meeting	Peter Bai	PJBai@dow.com
Finance	Janet Smith	finance@midlandacs.org
Historian	Wendell Dilling	history@midlandacs.org
† Long Range Planning Committee	Gina Malczewski	reginamalczewski@gmail.com
Membership	Tamlin Matthews	membership@midlandacs.org
Midland Chemist Newsletter	Vickie Langer	newseditor@midlandacs.org
	Steve Keinath	newseditor@midlandacs.org
MMTG	Jeanette Young	jeanette.young@dowcorning.com
Multicultural & Diversity Committee	Open	
Outreach/Kids and Chemistry	Gina Malczewski	outreach@midlandacs.org
Program	Wenyi Huang	whuang1@dow.com
Project SEED	Bernadette Harkness	bernadetteharkness@delta.edu
Public Affairs	Open	
Publicity	Open	
Safety	Kevin Wier	safety@midlandacs.org
Sci-Fest/NCW	Dave Stickles	dstick44@chartermi.net
	Michelle Rivard	michelle.rivard@dowcorning.com
Silver Circle/Senior Chemists	Joan Sabourin	jmsabour2@gmail.com
	Gretchen Kohl	gretchen.kohl@att.net
Teacher Support	Gina Malczewski	reginamalczewski@gmail.com
Webmaster	Greg Cushing	web@midlandacs.org
Women Chemists Committee	Beata Kilos	BAKilos@dow.com
† Younger Chemists Committee	Abrin Schmucker	ALSchmucker@dow.com

†Updated

Early Spring Silver Circle Event – April 11
Gretchen Kohl, Midland Section ACS



Early Spring Silver Circle Event

Grape Beginnings Winery
244 E. Main Street, Midland, MI
April 11, 2017
4:00 PM to 6:00 PM

- + Come reconnect with your Midland Section ACS friends and enjoy tasting some really interesting locally-made wines!
- + Enjoy three half glasses of wines that you've selected, with appetizers!
- + Be able to 'peek behind the scenes' to see how winemakers Brent and Chris Whitted ply their craft!
- + Hear about the current plans for a museum display celebrating the 100th year anniversary of the Midland Section ACS, upcoming in 2019!
- + Cost \$10/person (must be at least 21 years old)!
- + RSVP, yeses only, to gretchen.kohl@att.net
- + Please respond by April 8, 2017
- + Questions? Email Gretchen or call 989-708-9066

Workshop on Reactive Chemicals Hazard Evaluation – April 13

Melanie Kauffman, Communications Manager, Michigan State University



Please join us at our new facility in Midland, the MSU-Midland STEM Center, 1910 West St. Andrews Road, for a workshop on *Reactive Chemicals Hazard Evaluation in Chemical Laboratories, Pilot Plants, and Production Facilities*.

This workshop will be presented by **David Frurip**, retired Dow Chemical Company Technical Leader/Lead EH&S Research Scientist and a noted expert in the field. The workshop will be held on Thursday, April 13, 9:00 AM – 4:00 PM. Cost: \$85 (lunch not included).

Attention: Registered Professional Engineers – Attendance at this course qualifies for 6 professional development hours. PDH certificates will be provided to interested parties by Mid-Michigan AIChE.

Overview:

Maintaining control of chemical processes at every scale from laboratory to full production scale is imperative to prevent accidents resulting in serious injury or worse. By ensuring the process stays within the safe operating zone at all scales, a chemical process can be maintained with minimal down time, and more importantly, the well-being of the production workers is ensured with no effect on the surrounding community or damage to the company's reputation.

This course will introduce students to the general concepts and topics of a so-called Reactive Chemicals Hazard Evaluation. These include:

- Thermodynamic and kinetic aspects of chemical processes
- Reaction heat calculation and estimation
- Calorimetric testing methods
- Experimental design based on risk and scale
- Energetic materials and functional group identification
- Introduction to the CHETAH and CCPS Chemical Reactivity Worksheet software for hazard evaluation
- Flammability and dust explosions
- Determining worst case scenarios and lines of defense
- Temperature of no return (TNR) and time to maximum rate (TMR)

Some special topics are also covered including chemical compatibility and charts. The formal process of implementing a robust Reactive Chemicals program is also discussed (as implemented in the chemical industry at R&D scale up to full production).

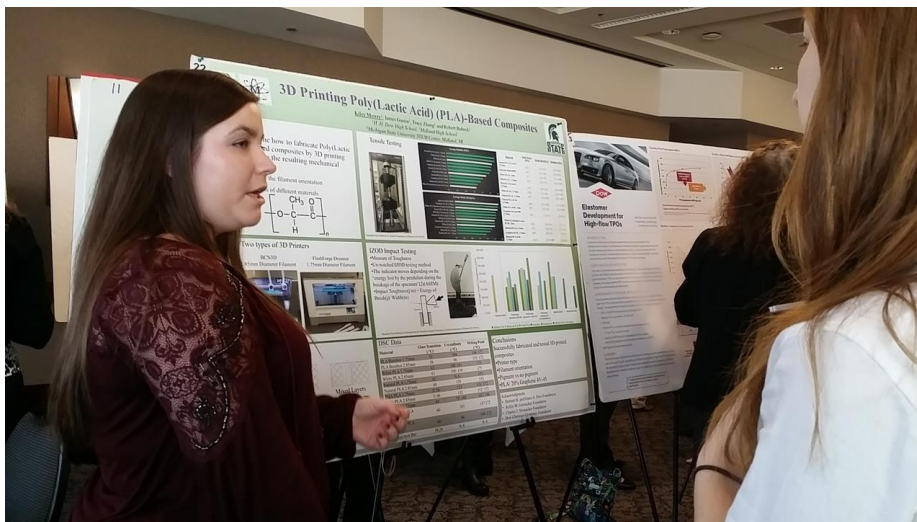
This course will consist of six lectures of one hour each and will include a mixture of formal presentations and interactive discussion. Although the concepts discussed apply to all scales, the emphasis of the course will be small to moderate scale (lab to pilot plant).

More information, including registration details, can be found at <https://vprgs.msu.edu/event/handling-hazardous-chemicals>.

Summer Internship Opportunity at MSU STEM Center in Midland – Application Deadline, April 15
Melanie Kauffman, Communications Manager, MSU Research and Graduate Studies

MSU St. Andrews Rd. eNews

Michigan State University • Midland, Mich.



MSU's Midland STEM Center Summer 2017 Internships

High school seniors (current juniors who will be seniors in fall '17) from the Midland County area are invited to apply.

- Each internship will be a paid position at \$10 per hour.
- The program will run eight weeks, 40 hours per week (Monday through Friday, days), from June 26 to August 18.

[More about the program...](#)

Selected applicants will have the opportunity to be mentored by MSU scientists on cutting-edge research projects in chemistry, astronomy, environmental science and materials science. Ultimately, these projects should provide the basis for the students to compete in national science fairs in the 2017-18 academic year.

[Learn how to apply...](#)

Please share this opportunity with potential applicants! You can download this flyer to share or post: [STEM Scholars Flyer](#).
Applications must be received by April 15, 2017.

Office of the Vice President for Research and Graduate Studies
Please inform us if you need any special accommodation for accessibility. (517) 432-4499

ACS Spring Awards Recognition Dinner – RSVP Deadline, April 15
Diana Deese, Awards Committee Chair, Midland Section ACS

ACS Recognition Dinner

Wednesday, May 3, 2017, 5:30 p.m. to 9:00 p.m.

Great Hall Banquet & Convention Center at Valley Plaza Resort
5121 Bay City Road, Midland, Michigan

Program:

5:30 p.m. Poster Session, Cash Bar, and Social Time

6:00 p.m. Dinner

7:00 p.m. Awards Presentations

Educators, students, ACS and industry colleagues, and 50- and 60-year ACS members/retirees will be recognized for their outstanding achievements at this 26th annual event. Our special guest speaker is **LaTrease Garrison**, Executive Vice President of the Education Division of the ACS, who will give a talk titled, *Show Up to Leave a Lasting Impression*. Mark your calendar and join us in support of our award recipients, to connect with colleagues, or just to mingle with a diverse group of people passionate about science!



The cost of the dinner is \$15.00 per person and includes a plated chicken dinner, dessert, and beverage. We will have a poster session prior to dinner highlighting area STEM initiatives, local section activities, and programs available through the ACS. A pre-dinner cash bar will also be available. Your dinner reservation request must be received by April 15, 2017. Using the format below, you may register by e-mail to Diana Deese (dkdeese@dow.com).

Payment options will be via PayPal [look for the ACS Events dropdown menu on the local section website (<http://www.midlandacs.org>) and select Spring Awards Banquet], at the door, or by mail using the address indicated. Dress is business casual. This event is sponsored by the Midland Section of the American Chemical Society. For further information, contact Diana Deese at (989) 636-9915.

To reserve a place at the 2017 ACS Recognition Dinner, return this form with payment (\$15.00/person) by **April 15, 2017**, to Diana Deese, The Dow Chemical Company, 1897 Building, E-bay East: E65, Midland, MI 48667, or via e-mail to dkdeese@dow.com. If paying at the door, you must still RSVP to Diana by April 15.

Name(s): _____

Affiliation: _____

Address: _____

Phone/E-mail: _____

ACS member? Yes / No (indicate by circling your member status)

Dietary Considerations: _____

Enclose payment of \$15.00 per person. Checks should be made payable to "Midland Section ACS".

ACS Dinner Meeting with Professor Angela Wilson – RSVP Deadline, April 21
Patrick Smith, Director, Midland Section ACS

Dinner Meeting with Professor Angela K. Wilson

Tuesday, May 9, 2017, 5:30 p.m. to 8:00 p.m.
Great Hall Banquet & Convention Center at Valley Plaza Resort
5121 Bay City Road, Midland, Michigan

5:30 p.m. Poster Session, Cash Bar and Social Time

6:30 p.m. Dinner

7:00 p.m. Presentation

The cost of the dinner is \$24.00 per person, \$5.00 for students, and includes a plated chicken dinner, dessert, and beverage (vegetarian or gluten-free dinners are available upon request). We will hold a poster session prior to dinner highlighting local section activities and programs available through the ACS including the Younger Chemists Committee, Women Chemists Committee, the up-coming 100th year anniversary celebration of the Midland Section, the 2019 Central Regional Meeting hosted by the Midland Section and an orientation with Professor Wilson on the Chemistry Division of the National Science Foundation. A cash bar will also be available during the social time.

Your dinner reservation request must be received by April 21, 2017. Using the form below, you may register by e-mail to Patrick Smith (smithp62@msu.edu). Payment options will be via PayPal [look for the ACS Events dropdown menu on the local section website (<http://www.midlandacs.org>) and select Angela Wilson Dinner Meeting], at the door, or by mail using the address indicated. Dress is business casual.

This event is sponsored by the Midland Section of the American Chemical Society. For further information, contact Patrick Smith (989) 374-9913.

To make a reservation for the dinner, return this form with payment (\$24.00/person, \$5.00 for students) by April 21, 2017 to Patrick Smith, Michigan State University, St. Andrews, 1910 West St. Andrews Road, Midland, MI 48640, (smithp62@msu.edu).

Name(s): _____

Affiliation: _____

Address: _____

Phone/E-mail: _____

ACS member? Yes / No (indicate by circling your member status)

Dietary Considerations: _____

Enclose payment of \$24.00 per person, \$5.00 for students. Checks should be made payable to "Midland Section ACS".

Energetic and Spectroscopic Property Predictions Across the Periodic Table

Tuesday, May 9, 2017

5:30 Poster Session, Cash Bar and Social Time

6:30 Dinner

7:00 Presentation

Great Hall Banquet and Convention Center, Valley Plaza Resort
5121 Bay City Road, Midland, Michigan



Professor Angela K. Wilson

John A. Hannah Distinguished Professor of Chemistry at Michigan State University and Director of the
National Science Foundation's Division of Chemistry
and
Department of Chemistry and Center for Advanced Scientific Computing and Modeling
University of North Texas

Abstract

In the rational analysis and design of molecular species, energetic data is often the most critical information needed. One of the longstanding challenges in computational chemistry, however, is in achieving accurate energetics (i.e., enthalpies of formation, ionization energies) for molecular species across the periodic table, and for molecules of increasing size. Challenges that can be encountered include limited experimental gauges for calculations, computational (i.e., computer memory, disk space, and CPU time) limitations, and, often, increasing atomic and molecular complexity beyond the first rows of the periodic table. Strategies for addressing these challenges and predicting quantitatively accurate energies will be discussed. The importance of the choice of thermochemical pathway, effective gauges and insight into density functional theory, particularly for transition metal species, and effective *ab initio* composite schemes are routes that are considered.

The poster session will include posters by the Midland Section ACS highlighting local section activities and programs available through the ACS including the Younger Chemists Committee, Women Chemists Committee, the up-coming 100th year anniversary celebration of the Midland Section, the 2019 Central Regional Meeting hosted by the Midland Section and an orientation with Professor Wilson on the Chemistry Division of the National Science Foundation.

THREE VENUE Earth Day on April 22!

Gina Malczewski and Michelle Rivard, Midland Section ACS

Join us and our partners for a special Earth Day, involving activities at three locations — Chippewa Nature Center (CNC; 400 S Badour Rd), Midland Volunteers for Recycling (4305 E Ashman St), and Creative 360 (1517 Bayliss St.). 2017 is the 30th anniversary of the Recycling Center, so there will be refreshments, sorting of recyclables, a special art activity, and a tour of the landfill at 11 am. You are encouraged to bring materials to recycle as well. At CNC, there will be invasive plant pulls, nest building, and planting with native seeds.

The ACS theme "Chemistry Helps Feed the World" will be especially visible at Creative 360. Both inside and outside there will be interactive and informative activities from various exhibitors, including those that deal with food, its chemistry, and its distribution. Try some foods made from cricket flour (high protein content, gluten-free, and sustainable), or take a garden/greenhouse tour. Start your own worm garden, plant some seeds, or check in with a Master Gardener. There will also be free drawings for a garden plot, and other items. Brittny Bauer from Dow will speak at 2 pm on her experiences in Malawi, Africa, using Food Science to help a sunflower oil manufacturer.

We are doing food drives at all locations — PLEASE bring non-perishable food donations and these will be distributed to our neighbors who need assistance.

EARTH DAY ACTIVITY Schedule – April 22, 2017

We will celebrate at **three venues**—Chippewa Nature Center, Midland Recyclers/Landfill, and Creative 360.

Potential exhibitors: We especially appreciate activities around planting, gardens, and the chemistry of food.

There also will be **drawings for giveaways** like a free garden plot!

Please bring one or more **non-perishable food items** to Earth Day with you--any location. What's collected will be distributed to those who are hungry in our area.

Please bring **recyclables** to the Midland Recyclers location on Ashman by the landfill.


TIME	Chippewa Nature Center	Creative 360: Lawn and Inside gallery	Midland Recyclers/Landfill <i>We've had a HAND in recycling for 30 years!</i>
9:00 am		exhibit set-up	Learn about what to recycle, what happens to recyclables, how we differ from curbside, and help sort! <i>Refreshments!</i>
10:00	Invasive Plant Pull, Tree & Shrub Planting, Native Seed Sowing Nest Box Building	Exhibits/booth activities	Learn about what to recycle, what happens to recyclables, how we differ from curbside, and help sort! <i>Refreshments!</i>
10:30	Native Seed Sowing Nest Box Building	Exhibits/booth activities Garden orientation	Learn about what to recycle, what happens to recyclables, how we differ from curbside, and help sort! <i>Refreshments!</i>

TIME	Chippewa Nature Center	Creative 360: Lawn and Inside gallery	Midland Recyclers/Landfill <i>We've had a HAND in recycling for 30 years!</i>
11:00	Native Seed Sowing Nest Box Building	Exhibits/booth activities	Landfill tour ONE TIME ONLY (11-12) with Scott O'Laughlin Learn about what to recycle, what happens to recyclables, how we differ from curbside, and help sort! Refreshments!
11:30	Native Seed Sowing Nest Box Building	Exhibits/booth activities	Learn about what to recycle, what happens to recyclables, how we differ from curbside, and help sort! Refreshments!
12:00	Native Seed Sowing Nest Box Building	Exhibits/booth activities	Learn about what to recycle, what happens to recyclables, how we differ from curbside, and help sort! Refreshments!
12:30	Native Seed Sowing Nest Box Building	Exhibits/booth activities	Learn about what to recycle, what happens to recyclables, how we differ from curbside, and help sort! Refreshments!
1:00	Native Seed Sowing Nest Box Building	Exhibits/booth activities	Learn about what to recycle, what happens to recyclables, how we differ from curbside, and help sort! Refreshments!
1:30	Native Seed Sowing Nest Box Building	Exhibits/booth activities Garden Orientation <u>Clean-up for indoor exhibits</u>	Learn about what to recycle, what happens to recyclables, how we differ from curbside, and help sort! Refreshments!
2:00	Native Seed Sowing Nest Box Building	<u>SPEAKER</u> Brittny Bauer , Food Scientist, "Feeding the World: How Food Chemistry is Making a Difference in Developing Nations"	Learn about what to recycle, what happens to recyclables, how we differ from curbside, and help sort! Refreshments!
2:30	Native Seed Sowing Nest Box Building	Speaker Q&A	Learn about what to recycle, what happens to recyclables, how we differ from curbside, and help sort! Refreshments!
3:00	Litter Pick-up, Native Seed Sowing, Nest Box Building	*	*
3:30	Native Seed Sowing Nest Box Building		
4:00	CLOSE		

*March for Science begins at 3:00 PM with speakers at Carpenter School, 1407 West Carpenter St., Midland

Midland Section ACS Presents “Feeding the World: How Food Chemistry is Making a Difference in Developing Nations” – Brittny Bauer, Food Scientist
Gina Malczewski and Michelle Rivard, Midland Section ACS

The Midland Section of the American Chemical Society presents:




FEEDING the WORLD: How Food Chemistry is Making a Difference in Developing Nations

Saturday 4/22/17 2-3 pm
Creative 360, 1517 Bayliss St., Midland
Part of EARTH DAY ACTIVITIES

FEATURING Brittny Bauer
of the Methylcellulose Food Lab at Dow Chemical

Free and open
to the public

- How does a food scientist impact sunflower oil in Malawi, Africa?
- What does a world without food chemistry look like?



Earth Day Participant Registration Form
Gina Malczewski and Michelle Rivard, Midland Section ACS

Earth Day Participant Registration Form

April 22, 2017

10am – 2pm

Set-up begins at 9am

1517 Bayliss St Midland, MI 48640 (Creative 360)

This year's theme is officially: "Chemistry Helps Feed the World"
We welcome any Earth Friendly Organizations to Participate!

If you wish to **EXHIBIT** at the **Creative 360** location, **PLEASE COMPLETE THIS FORM** and send to one of the addresses indicated below by **April 10, 2017**. This is **FREE**, but this opportunity is not intended for sales or commercial purposes.

Name of Organization _____

Organization Contact _____

Phone # _____ # people at booth _____

Email Address _____

Inside? (limited space; must be cleared by 2:00 pm) _____

Outside? (inside a large tent), clean-up begins at 2 pm) _____

Booth Topic _____

Display Title _____

Please Check Your Needs Below:

☐ 6 or 8 foot banquet table (# (1 or 2) _____)

☐ chairs (# _____)

other needs? (limited space indoors) _____

☐ electricity access (booths
closest to building or inside; limited)

Will your organization be providing give-aways at your booth? Yes No

If yes, please describe _____

Will your booth have a hands-on activity? Yes No

If yes, please describe _____

Questions? Please e-mail Gina Malczewski: reginamalczewski@gmail.com

Please return this form by email: michelle.rivard@dowcorning.com

or fax: 989-496-6121



ACS Announces Its Support for the March for Science

American Chemical Society External Affairs & Communications

WASHINGTON, March 15, 2017 — The American Chemical Society (ACS) announces its support of the March for Science to be held on Earth Day, April 22. The March, which coincides with the annual ACS event called Chemists Celebrate Earth Day (CCED), aligns with the Society's key goal of fostering understanding and appreciation of science by the public, the media, and policymakers.

Each year since 2003, ACS has conducted CCED as a nationwide celebration of the positive impact that chemistry has had on society and the environment. This year's CCED theme is "Chemistry Helps Feed the World." ACS members across the U.S., through the Society's 185 local sections, will be involved with outreach and engagement activities with their communities.

The March for Science occurs on the same day and provides another means of expressing support for science in the U.S., and its contributions toward improving people's lives, protecting our nation, creating jobs, driving innovation and facilitating economic growth.

With these thoughts in mind, ACS offers its support for the March for Science, predicated upon two essential conditions:

- That the March adhere strictly to its established and publicly posted mission and principles, which closely mirror ACS' own vision, mission and goals
- That the March continues to be a nonpartisan celebration of science focused on its many positive contributions toward improving the human condition and addressing the world's most pressing challenges

The March for Science will take place in Washington, D.C., with satellite marches taking place in cities across the country. ACS is exploring opportunities to conduct CCED activities in Washington, D.C., in ways that are supportive of the March, and it is encouraging ACS local sections to do the same in their local communities.

ACS looks forward to a positive and peaceful march that everyone, scientists and non-scientists alike, can be proud of and fully support.

The American Chemical Society is a nonprofit organization chartered by the U.S. Congress. ACS is the world's largest scientific society and a global leader in providing access to chemistry-related research through its multiple databases, peer-reviewed journals and scientific conferences. ACS does not conduct research, but publishes and publicizes peer-reviewed scientific studies. Its main offices are in Washington, D.C., and Columbus, Ohio.

ACS Midland Section March for Science Activities

Gretchen Kohl, Midland Section ACS

Locally, as part of our Midland Section Earth Day Celebration, we will be supporting the March for Science at Creative 360. The March for Science Midland organizers will have a booth at our celebration from 10:00 AM to 2:00 PM, on April 22, 2017. In the meantime, visit the website at facebook.com/MarchForScienceMidland for the most up-to-date details before, and for updates after the event. The ACS Midland Section local march will take place from 3:00 PM to 5:00 PM, beginning at Carpenter School, 1407 West Carpenter St., Midland.

14th Annual ChEMS Research Forum, May 11

MSU ChEMS Department

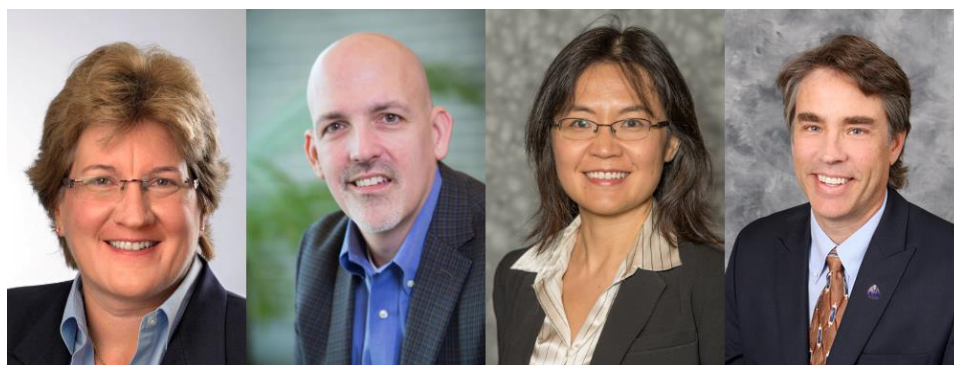
The Department of Chemical Engineering and Materials Science (ChEMS) at Michigan State University would like to invite you to join us at the 14th annual ChEMS Research Forum on Thursday, May 11, 2017. The forum is a full-day event, running from 8:30 AM to 5:00 PM, and will be held at the Huntington Club at Spartan Stadium, 325 W. Shaw Lane, East Lansing, on the campus of MSU.

The 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 two invited plenary speakers, oral presentations from faculty and students, and an extended poster session describing the latest department research results.

Keynote Speakers:



- **Rose A. Ryntz** IAC Vice President Advanced Development & Material Engineering
- **Paul E. Krajewski** General Motors Global R&D Director Vehicle Systems Research Lab
- **Yue Qi** Associate Professor, Chemical Engineering and Materials Science, Michigan State University
- **John R. Dorgan** Professor, Chemical and Biological Engineering, Colorado School of Mines

Topics:

- **Challenges and Innovations Facing Automotive Interior Manufacturers**

Interior Automotive requirements continue to evolve as the USA CAFÉ standards drive weight reduction and enhanced powertrains in efforts to achieve 54.4 mpg by 2025. With ride sharing increasing and with an eye on the autonomous vehicle, material selection, connectivity, and interior craftsmanship become important criteria for manufacturers. This talk will discuss the changing landscape in automotive interiors and address the advances being made in light weighting, durable and non-petroleum based materials, and processes utilized to make new constructions.

- **Materials Insertion Challenges in the Automobile Industry**

Automobiles are created using almost every material across the periodic table, literally from Aluminum to Zinc. Many of the future automotive breakthroughs are dependent on new materials which provide improved functionality or performance. The insertion of new materials into automobiles, however, is very challenging due to a number of reasons including global availability, stable pricing, consistent material performance, mathematical models to predict performance, etc. The present talk will explore a few case studies of materials insertion and highlights their challenges and successes. Examples will include high-strength steels, aluminum, magnesium, and shape memory alloys. The talk will conclude by exploring some future materials challenges facing the automobile industry.

- **Modeling of the thin passivation layer on aluminum and lithium metals**

Spontaneously formed passivation layers, such as oxides on an aluminum surface, can enable many important applications by blocking the diffusion of either oxygen or metal. Lithium, as the most active metal, will be covered by a passivation layer in battery applications due to electrolyte reduction reactions. This passivation layer must have “selective” transport properties: blocking electrons from attacking the electrolytes while allowing Li⁺ ions to pass through so the electrochemical reactions can continue. Therefore, it is often called “solid electrolyte interphase (SEI)”. Despite this importance, their structure–property relationship is largely unknown due to the nanometer thickness. Using computational approaches that start from electronic and atomic structures, the transport and mechanical properties can be predicted and the chemical and structural evolution of the passivation layer can be simulated.

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

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

Update to the April 10th ACS Board Meeting at Central Michigan University

Dale LeCaptain, Councilor, Midland Section ACS

4:00 PM Seminar, Dow Science Building room 175: "Global Climate Disruption: How Do We Know? What Can We Do?" presented by Dr. Andy Jorgensen, University of Toledo

5:00 – 7:00 PM Student sponsored Meet n' Greet pizza dinner, Dow Science Building room 108

6:15 PM Guided tour of the new CMU Biosciences building (opened in November 2016)

7:00 – 8:00 PM ACS Board meeting, Dow Science Building room 108

8:15 PM Post-Board meeting social at Crankers, 1207 E Pickard Rd, Mount Pleasant

ALL CMU parking, including meters, is FREE after 4:00 PM

Upcoming Midland Section ACS 100th Anniversary Celebration Planning Team Meetings

Steve Keinath, Midland Section ACS

The Midland Section ACS 100th anniversary celebration planning team meetings are changing format from once a month on the second Monday, to every other Wednesday beginning on April 12. Meetings will be held at the MSU Midland STEM Center building, 1910 West St. Andrews Road, from 5:00 to 6:30 PM.

In Past Issues of *The Midland Chemist*

Wendell L. Dilling, Director and Historian, Midland Section ACS

50 Years Ago, *The Midland Chemist* **1967**, 4, No. 1 (Apr.), 10.

In *Community Science Seminar Sponsored by Section*: "A science program for the science-oriented young high school students of the Midland Area is being sponsored by the Midland Section of the ACS. The program, called the Community Science Seminar, consists of a series of seminars concerning a number of aspects of science and technology. The objectives of the Science Seminar are to encourage and stimulate the science-prone, gifted young people of our area. These students have been selected as a result of their knowledge and interest in science. ...

The Seminar Coordinator is Mr. Sam A. Brady of the Dow Corning Corporation."

40 Years Ago, *The Midland Chemist* **1977**, 14, No. 4, 14.

In *Editorial Comment, Is Congress Serious?* by James W. Espy: "Just last month the Food and Drug Administration announced a ban on the sale of saccharin and yellow dye number 5. Both compounds have been shown to be carcinogens in flimsy experiments on rats. FDA even admits that some of its data is questionable, but the agency hides behind the infamous Delaney clause as it clings steadfast to its ban. The Environmental Protection Agency has closed the doors to many businesses because of some environmental conditions that *might* prove hazardous to some forms of life. In most cases such rulings have been made irrespective of their economic impact. Congress is behind each one of these agencies and it is Congress that has decided that this nation needs such protection."

30 Years Ago, *The Midland Chemist* 1987, 24, No. 3, 4.

In *Blair Receives Award for Public Affairs Work*: "For the first time since the Chicago Section Public Affairs Award was established in 1982, the awardee chosen is not a member of that Section, nor a resident of the Chicago metropolitan area. This is due to the regional nature of the award, as it was established in order to honor those scientists in Region V of the Environmental Protection Agency who have shown exceptional dedication and diligence in dealing with issues involving science and public policy.

The 5th Annual Awardee is an exceptionally able chemist, Dr. Etcyl H. Blair. Dr. Blair is presently a consultant in industry-government regulations, having recently retired from the Dow Chemical Co. after a very distinguished career in research and management. He joined Dow in 1951, after completing his doctorate in organic chemistry at Kansas State University. He moved steadily up the ladder at Dow being named Vice-President for Health and Environmental Research in 1978."

20 Years Ago, *The Midland Chemist* 1997, 34, No. 3, 3.

In *From the Chair...* by Joan Sabourin, Chair ACS Midland Section: "One of the Strategic Thrusts for 1997 from the national ACS office states that 'ACS will provide programs and activities to improve the scientific literacy and interest of students.' Are you aware of all the activities that this section is involved in to meet this goal?

Our **Project Science Literacy** committee spearheaded by **John Blizzard** (DCC), **Karol Childs** (Hall of Ideas), **Claudia Douglass** (CMU), **Joan Holtzschlag** (DCC), **Gretchen Kohl** (DCC), and **Marvin Tegen** (DOW) has been doing just this since 1995. This project emphasizes the 'hands-on' and student-teacher collaborative aspects of discovering science. Through this program strong alliances have developed between industry, local educational institutions, community organizations, Michigan senators and legislators, and the Department of Education. To date, over 300 teachers have taken part in the workshops."

10 Years Ago, *The Midland Chemist* 2007, 44, No. 2, 4.

In *Prof. Pollack to Speak on Climate Change* by Dee Strand: "**Alden B. Dow Museum of Science and Art, Saturday, April 21, 2007, 4:00 p.m.**

Midland Section-ACS and the Chippewa Nature Center are co-sponsoring a presentation on climate change. Professor Henry Pollack has been a professor of geophysics at the University of Michigan for over forty years. He has earned a reputation as one of the world's leading experts on the temperature of the earth, both today and in the geological past. An award-winning teacher with a gift for explaining science to nonscientists, Professor Pollack has taken a special interest in helping leaders in government and business, as well as the general public, to better understand and evaluate the scientific developments associated with global climate change."

Upcoming Dates, Events, and Other Updates

- April 2-6 – 253rd ACS National Meeting & Exposition, San Francisco, CA. For more information, see <https://www.acs.org/content/acs/en/meetings/spring-2017.html>
- April 10 (4:00 – 5:00 PM) – Pre-Board meeting seminar, "Global Climate Disruption: How Do We Know? What Can We Do?" presented by Dr. Andy Jorgensen, University of Toledo. Dow Science Building room 175, Central Michigan University (GPS coordinates: 203 Ottawa Court, Mount Pleasant).
- April 10 (5:00 – 7:00 PM) – Pre-Board meeting meet-and-greet pizza dinner sponsored by the CMU ACS student affiliate group, Dow Science Building, Room 108, Central Michigan University. Guided tour of the new Biosciences building at 6:15 PM.

- April 10 (7:00 – 8:00 PM) – ACS Board meeting, Dow Science Building, Room 108, Central Michigan University (in person), or via a WebEx conference call connection at [Midland Section WebEx Board Meeting](#), meeting number/access code: 715 679 159, phone number: 989-633-1166. **Please note the change of venue from MCFTA to CMU.**
- April 10 (8:15 PM) – Post-Board meeting social at Crankers, 1207 E Pickard Rd, Mount Pleasant.
- April 11 (4:00 – 6:00 PM) – Early Spring Silver Circle Event at Grape Beginnings Winery, 244 E. Main Street, Midland. Cost \$10 per person (must be at least 21 years old). You may RSVP by e-mail by April 8 to Gretchen Kohl at gretchen.kohl@att.net.
- April 12 (5:00 – 6:30 PM) – Midland Section ACS 100th Anniversary Celebration planning team meeting, MSU STEM Center (1910 West St. Andrews Road, Midland). For more information, or to volunteer, please contact Wendell Dilling at dilli1wl@cmich.edu or Gina Malczewski at reginamalczewski@gmail.com.
- April 13 (9:00 AM – 4:00 PM) – Workshop on *Reactive Chemicals Hazard Evaluation in Chemical Laboratories, Pilot Plants, and Production Facilities*, presented by David Frurip, retired Dow Chemical Company research scientist and an expert in the field, MSU-Midland STEM Center, 1910 West St. Andrews Road, Midland. Cost: \$85 (lunch not included). More information, including registration details, can be found at <https://vpgrs.msu.edu/event/handling-hazardous-chemicals>.
- April 15 – **Application deadline for Michigan State University Midland STEM Center Summer 2017 High School Internship Program.** Full-time, paid internships for fall 2017 high school seniors. See flyer on page 5 for details and to apply.
- April 15 – **Deadline to RSVP for the Midland Section ACS Spring Awards Recognition Dinner**, to be held on Wednesday, May 3, at the Great Hall Banquet & Convention Center, Midland. The cost of the dinner is \$15.00 per person and includes a plated chicken dinner, dessert, and beverage. You may RSVP by e-mail to Diana Deese at dkdeese@dow.com and pay at the door the evening of the event. See page 6 for additional details and RSVP options. For more information, or for any questions, contact Diana Deese, Midland Section ACS Awards Committee Chair, at dkdeese@dow.com or 989-636-9915.
- April 21 – **Deadline to RSVP for the dinner meeting and presentation with Professor Angela K. Wilson**, to be held on Tuesday, May 9, at the Great Hall Banquet & Convention Center, Midland. See details and RSVP information on page 7 and flyer on page 8. For more information, or for any questions, contact Pat Smith at smithp62@msu.edu.
- April 22 (9:00 AM – 4:00 PM) – Special Earth Day program involving many activities and three different venues: the Chippewa Nature Center (400 South Badour Road), the Recycling Center/Landfill (4305 East Ashman Street), and Creative 360 (1517 Bayliss Street), all in Midland. See the full day's activity schedule on pages 9–10. For more information or to volunteer, contact Gina Malczewski (reginamalczewski@gmail.com) or Michelle Rivard (michelle.rivard@dowcorning.com).
- April 22 (2:00 – 3:00 PM) – Earth Day celebration speaker, Brittney Bauer, food scientist: “Feeding the World: How Food Chemistry is Making a Difference in Developing Nations”. Creative 360, 1517 Bayliss Street, Midland. For more information, see flyer on page 11.
- April 22 (10:00 AM – 2:00 PM) – The ACS Midland Section will be supporting the March for Science at Creative 360, 1517 Bayliss Street, Midland, during the Midland Section Earth Day Celebration. Visit the website at facebook.com/MarchForScienceMidland for the most up-to-date details.
- April 22 (3:00 – 5:00 PM) – The ACS Midland Section will be supporting the March for Science with a local march, beginning at Carpenter School, 1407 West Carpenter St., Midland. Visit the website at facebook.com/MarchForScienceMidland for the most up-to-date details.

- April 26 (5:00 – 6:30 PM) – Midland Section ACS 100th Anniversary Celebration planning team meeting, MSU STEM Center (1910 West St. Andrews Road, Midland). For more information, or to volunteer, please contact Wendell Dilling at dilli1wl@cmich.edu or Gina Malczewski at reginamalczewski@gmail.com.
- May 1 (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](#), meeting number/access code: 715 679 159, phone number: 989-633-1166.
- May 3 (5:30 – 9:00 PM) – Midland Section ACS Spring Awards Recognition Dinner, Great Hall Banquet & Convention Center, 5121 Bay City Road, Midland. 5:30 PM, poster session, cash bar, and social time; 6:00 PM, dinner; 7:00 PM, awards presentations. The cost of the dinner is \$15.00 per person and includes a plated chicken dinner, dessert, and beverage. To reserve a place, your RSVP must be received by Diana Deese, Awards Committee Chair, no later than Saturday, April 15, 2017. You may RSVP by e-mail to Diana at dkdeese@dow.com and pay at the door the evening of the event. For more information, or for any questions, contact Diana Deese, Midland Section ACS Awards Committee Chair, at dkdeese@dow.com or 989-636-9915.
- May 9 (5:30 – 8:00 PM) – Prof. Angela K. Wilson, Professor of Chemistry at Michigan State University and Director of the National Science Foundation's Division of Chemistry, will present: "Energetic and Spectroscopic Property Predictions Across the Periodic Table." A poster session will include posters by the Midland Section ACS highlighting local section activities and programs, and an orientation with Professor Wilson on the Chemistry Division of the National Science Foundation. Great Hall Banquet & Convention Center, 5121 Bay City Road, Midland. See details and RSVP information on page 7 and flyer on page 8 (RSVP deadline is April 21). For more information, or for any questions, contact Pat Smith at smithp62@msu.edu.
- May 10(5:00 – 6:30 PM) – Midland Section ACS 100th Anniversary Celebration planning team meeting, MSU STEM Center (1910 West St. Andrews Road, Midland). For more information, or to volunteer, please contact Wendell Dilling at dilli1wl@cmich.edu or Gina Malczewski at reginamalczewski@gmail.com.
- May 11 (8:30 AM – 5:00 PM) – 14th Annual ChEMS Research Forum. Presented by the Department of Chemical Engineering and Materials Science (ChEMS) at Michigan State University. The Huntington Club at Spartan Stadium, 325 W. Shaw Lane, East Lansing, on the campus of MSU. 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 24 (5:00 – 6:30 PM) – Midland Section ACS 100th Anniversary Celebration planning team meeting, MSU STEM Center (1910 West St. Andrews Road, Midland). For more information, or to volunteer, please contact Wendell Dilling at dilli1wl@cmich.edu or Gina Malczewski at reginamalczewski@gmail.com.
- June 5 (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](#), meeting number/access code: 715 679 159, phone number: 989-633-1166.
- June 7 (5:00 – 6:30 PM) – Midland Section ACS 100th Anniversary Celebration planning team meeting, MSU STEM Center (1910 West St. Andrews Road, Midland). For more information, or to volunteer, please contact Wendell Dilling at dilli1wl@cmich.edu or Gina Malczewski at reginamalczewski@gmail.com.
- June 7-9 – 2017 Central Regional Meeting (CERM 2017), Detroit, MI. For more information, see <http://acscerm2017.org/>.
- June 21 (5:00 – 6:30 PM) – Midland Section ACS 100th Anniversary Celebration planning team meeting, MSU STEM Center (1910 West St. Andrews Road, Midland). For more information, or to volunteer, please contact Wendell Dilling at dilli1wl@cmich.edu or Gina Malczewski at reginamalczewski@gmail.com.

- July 5 (5:00 – 6:30 PM) – Midland Section ACS 100th Anniversary Celebration planning team meeting, MSU STEM Center (1910 West St. Andrews Road, Midland). For more information, or to volunteer, please contact Wendell Dilling at dilli1wl@cmich.edu or Gina Malczewski at reginamalczewski@gmail.com.
- July 19 (5:00 – 6:30 PM) – Midland Section ACS 100th Anniversary Celebration planning team meeting, MSU STEM Center (1910 West St. Andrews Road, Midland). For more information, or to volunteer, please contact Wendell Dilling at dilli1wl@cmich.edu or Gina Malczewski at reginamalczewski@gmail.com.
- August 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](#), meeting number/access code: 715 679 159, phone number: 989-633-1166.
- August 20-24 – 254th ACS National Meeting & Exposition, Washington, DC. For more information, see http://www.chemistryviews.org/details/event/2351921/254th_ACS_National_Meeting_Exposition.html.
- September 11 (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](#), meeting number/access code: 715 679 159, phone number: 989-633-1166.
- October 2 (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](#), meeting number/access code: 715 679 159, phone number: 989-633-1166

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