THE MIDLAND CHEMIST

A publication of the Midland Section of the American Chemical Society

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Contents

Chair Column

Krishnaja Duvvuri, Chair, Midland Section ACS

Dear Reader,

Dr. Michael Tulchinsky

In this issue of the *Midland Chemist*, I am happy to welcome Dr. Michael Tulchinsky, the Chemistry Olympiad Committee Chair of the Midland Section ACS, to share his vision of the Midland Section's very successful Chemistry Olympiad program. Michael has been leading this effort with vigor and passion since 2016.

Brief Introduction of Chemistry Olympiad

The U.S. National Chemistry Olympiad (USNCO) is a multi-tiered competition designed to stimulate and promote excellence in high school chemistry. Each year, the top four students in the country are selected to represent the United States at the International Chemistry Olympiad (IChO). In 2024, 84 countries took part in the

IChO in Saudi Arabia, and the United States won three gold and one silver medals. The USNCO program consists of the following four stages: Local Section Exam, National Exam, Study Camp, and International Chemistry Olympiad (IChO).

The Midland Section ACS coordinates the Local Section Exam and the National Exam of USNCO in mid-Michigan. Every year mid-Michigan high school chemistry teachers receive invitations and information about the Chemistry Olympiad from the Midland Section ACS. Each chemistry student is eligible to take part in the Chemistry Olympiad Local Section Exam which includes 60 multiple choice chemistry questions, lasts for about two hours, and is administered by high school chemistry teachers using problem sets that are procured from the ACS. After grading the tests, the Chemistry Olympiad committee selects and nominates up to ten (in 2025, this number has increased to 12) high-scoring students to the National Exam which has been held the past 10 years at Saginaw Valley State University. The National competition involves two problem solving sessions and one lab practical where students perform experimental tasks. Typically, about 800-1,000 students participate in the National Exam across the country. The next level, the Study Camp, a prelude to the IChO, includes 20 top-performing students nationally and is conducted under the auspices of the ACS at a designated location in the United States.

All mid-Michigan students participating in USNCO are recognized with ACS certificates. The National Exam contestants also receive gifts at the annual Spring Awards Banquet of the Midland Section ACS. One student was recognized nationally with Honors at the National Exam in 2024. The Chemistry Olympiad is free for the students and teachers since the Midland Section ACS funds the competition. Dow also supports Chemistry Olympiad as a STEM activity and proudly sponsored the IChO in Paris in 2019.

USNCO is not only very competitive, intellectually challenging, and an exciting activity but it also provides high value to students with average expenses per student of less than $5.00. This overall program cost includes the price for the Local Exam sets, lunch for students and volunteers during the National Exam, gifts, and banquet coverage for National Exam students and their parents.

The Midland Section ACS organizers make every effort to achieve the broadest participation from all mid-Michigan counties and encourage talented, motivated, and hard-working students to advance to the highest possible tier of USNCO up to and including the IChO. ACS polling of students shows that many increased their interest in studying chemistry in college after taking the USNCO tests. Top students who participate in USNCO often elect chemistry, chemical engineering, other physical sciences, or life science majors and go on to get their education at prominent universities like the University of Michigan and MIT.

History and Challenges of Chemistry Olympiad in the Midland Local Section

The Midland Section of the ACS is one of 185 local ACS sections across the United States. It began organizing the Local Exam in 1984, the same year the United States commenced participation in the IChO. Since 1984, this contest has been held in mid-Michigan all the years to date except for 1986. The student turnout in the earlier years was high due to the strong interest and appeal of chemistry in the area. Both Dow Chemical and Dow Corning encouraged STEM activities and provided the necessary support with some of the students' relatives or acquaintances often associated with one of the two companies. For example, the Midland Section ACS board minutes of 2001 show that 426 students from 13 high schools participated in the local competition. The schools with awarded participants included H.H. Dow, Midland, Nouvel Catholic Central, Heritage, and Garber. However, the participation in the Local Exam decreased to about 125 students in 2015.

The program increased significantly to 299 students in 2016 under new leadership. An article about the 2016 Chemistry Olympiad in mid-Michigan was published in the *Midland Daily News*.

Figure 1. High school teachers and students are shown at the 2016 Spring Awards Recognition Banquet. From left to right are Midland High teacher Jeff Yoder, Saginaw Arts and Science Academy teacher Dr. David Allan, John Smith and James Shepich of Saginaw Arts and Science Academy, Chemistry Olympiad Committee Chair Dr. Michael Tulchinsky, Cailynn Aumock of Bay City Western High School and Laken Rivet of John Glenn High School.

From 2016 to 2020, the quantity of participating students was stable in the range of two to three hundred comprising 8 to 12 schools. The National Exam was held at SVSU and the Chemistry Olympiad Committee introduced brief cultural presentations about the host country of the IChO during the National Exam sitting – Thailand, Czech Republic, and France. The Chemistry Olympiad program of the Midland Section ACS received the ACS ChemLuminary Award in 2021.

With the onset and issues of COVID in 2020-2021, the program temporarily scaled back but did not stop. The National Exam Lab Practical part of the program was canceled and the National Exam proceeded online in 2021. This situation changed in 2022 when student participation began to gradually improve again.

Currently, all COVID limitations have been lifted but we still strive to reach the program participation level that existed before COVID. Contributing to the challenge is the continuing retirement of outstanding chemistry teachers who encouraged and inspired their students to participate in the contest every year. Teachers Mary Fredell, Joseph Bruessow, David Allan, and Sandra Schafer retired while Melyssa Lenon moved away from the area. Two more teachers plan to retire in 2025. The bright spot is the presence of several notable schools in the area with excellent credentials that are producing promising candidates to join the competition in the near future. Also, at present, high school students can register directly at the USNCO website and participate in alternative schools even if their own schools decide not to participate in the contest.

Figure 2. The Lab Practical part of the National Exam in 2022 at SVSU. From left to right are mid-Michigan students Joseph Crachiola, Devlin Wieszczecinski, Leah Jankoska, Jacqueline Ko, and Thomas Ladwein.

Impact on Students / Testimonials from High School Chemistry Teachers

Kristin Weston, H.H. Dow High School Chemistry Teacher

The ACS test has been an excellent preparation tool for juniors and seniors at Dow High School as they get ready for the AP Chemistry multiple-choice section and for juniors preparing for the SAT in the coming weeks. This rigorous exam exposes students to advanced chemistry concepts they may encounter in future coursework while providing valuable testing experience. It challenges students to apply their knowledge in a high-level format, helping them build confidence and problem-solving skills. Additionally, it offers a unique opportunity for top performers to advance to the state or even national exam, further enhancing their academic growth.

Jeffrey Yoder, Midland High School Chemistry Teacher

Over the years, the ACS Chemistry Olympiad has been a very beneficial activity for the AP Chemistry classes at Midland High School. Many of the questions on the rigorous Olympiad test cover content that my students will see on the AP test, so it provides an early opportunity for them to see what they truly know (or don't know!). This helps them to better focus their preparation for the high-stakes AP exam in May. In addition, those students of mine who move on to the second round find the lab practical portion to be a validation of the techniques and knowledge that they've gained in the classroom. All around, this has proven to be a very worthwhile activity!

Jason Brown, Mount Pleasant High School Chemistry Teacher

Most years, students in my AP Chemistry classes are apprehensive about how they will perform on the AP Chemistry test. After completing the Chemistry Olympiad Regional Competition, many are very encouraged because it gives them validation that they are at or above the knowledge level of surrounding

area advanced chemistry students. It also helps my students to appreciate the knowledge that they have learned in my AP Chemistry class. Students that make it to the national level of the competition really enjoy the lab portion of the competition because it allows them to put their chemistry knowledge into practice.

About the Chemistry Olympiad Committee

Both local and national Chemistry Olympiad exams have been coordinated over the past 10 years by a STEM volunteer and enthusiast from Dow Chemical, Dr. Michael Tulchinsky, who is the Midland Section ACS Committee Chair responsible for the USNCO. Decades previously, he himself participated as a high school student at all levels of the Chemistry Olympiad, including the IChO. In his own words, "It was an unforgettable experience that solidified my desire to become a chemist, encouraged me to pursue graduate studies in organic chemistry, and brought me to this country where I eventually became a scientist at Dow Chemical."

The National Exams of the Chemistry Olympiad program have been carried out in partnership with Dr. Anthony Revis and earlier with Professor Michael Coote, who are faculty and staff members in the Department of Chemistry at Saginaw Valley State University.

Many Dow Chemical Core R&D researchers have served over the years as volunteer proctors for the National Exams – Drs. Jonathan Axtell, Sudipta Pal, James Cabrera, Stephanie Barbon, Robert Kennedy, Anne-Catherine Bedard, Daniel Grohol, Xiangui Zhang, Nipon Pothayee, Matthias Ober, and Sanil Sreekumar.

Chemistry teachers play important roles in the success of this activity by administering the Chemistry Olympiad Local Exam at their schools. They also encourage nominated students from their classes to take part in the National Exam. The Chemistry Olympiad Committee collaborates closely with the Midland Section ACS Awards Committee in preparation for the annual Spring Awards banquet.

If you have fresh ideas related to the Chemistry Olympiad program or if you have any questions or comments, please feel free to reach out to Michael Tulchinsky (tulchiml@dow.com) or to Krishnaja Duvvuri (chair@midlandacs.org). Thank you.

References

Annual reports about the 2017 to 2024 Chemistry Olympiads in mid-Michigan are published in *The Midland Chemist*, usually the June issues, at https://midlandacs.org/newsletter/

Articles that have appeared in the *Midland Daily News*:

- https://www.ourmidland.com/news/article/High-school-students-hope-for-spot-at-7944546.php
- https://www.ourmidland.com/news/article/Dow-sponsors-nbsp-Chemistry-Olympiads-in-Paris-14055275.php
- https://www.ourmidland.com/news/article/Students-win-chance-to-qualify-for-International-7011231.php

Girls Day Out at Delta College, March 14

Ashlin Sathyan, Women Chemists Committee, Midland Section ACS

Please join us for our next Girls Day Out at Delta College, Friday, March 14, 2025. Volunteers are needed at two Delta College locations – the Main Campus where 690 girls have registered to attend and at the Saginaw Center where 193 girls have registered to attend. Cosponsored event by the Midland Section ACS and Women Chemists Committee. For more information, please contact Ashlin Sathyan at ashlin.sathyan@dupont.com.

Girls Day Out at Delta College 2025

Our event is scheduled for **Friday, March 14, 2025**, at the Delta College main campus.

We currently have 883 girls coming to Delta for the day. There will be 690 girls at the main campus and 193 girls at the Saginaw Center. and we could not put on this event without you!

Where: Delta College Main Campus, Midland, Mi.
When: March 14th. WCC-ACS 9:30 to 10:30 am
PLEASE LET US KNOW IF ANYONE WANTS TO VOLUNTEER FOR THIS ONE ☺!

If you have any questions, please reach out to Ashlin Sathyan: ashlin.sathyan@dupont.com, Julia Sunderland: jsunderland@dow.com, Ana Ulloa aulloagomez@dow.com or Isabel Meza: mmeza1@dow.com.

ACS Spring 2025 National Meeting & Exposition, March 23-27

Steve Keinath, Co-Editor, The Midland Chemist

Editor's note: The information contained in this article is reprinted, in part, from National ACS email communications to all ACS members, dated December 12, 2024, and January 2, 2025.

Join us in San Diego or online for the ACS Spring 2025 National Meeting & Exposition, March 23-27, 2025. Experience sessions from 30-plus ACS technical divisions, opportunities to make lasting career connections, professional development courses, and networking that only can be gained by attending an ACS National event. Be among 13,000-plus industry and academic leaders, researchers, and influencers as they share ideas and discuss ways to advance scientific and technological knowledge in person and virtually.

Five virtual meeting experiences are available as part of the ACS Spring 2025 National Meeting & Exposition:

Division/Committee Technical Sessions – Experience the latest research curated by ACS Technical Divisions covering a wide range of topics from industry leaders in the chemistry community.

Virtual Graduate Student Asia-Pacific Symposium – A unique opportunity for students in the Asia-Pacific Region to showcase their latest research in Surface Science & Catalysis, Biomaterials & Biointerfaces, Computational Chemistry, Inorganic Chemistry, and more.

Global Virtual Symposium (GVS) – High-quality content with an emphasis on global issues like climate change, renewable energy, and health innovation. The virtual meeting opportunity focuses on the core classics of chemistry – organic, inorganic, materials, and physical chemistry.

Professional Development – Sessions that are designed to help chemists advance their careers, enhance technical expertise, and strengthen essential skills like grant writing.

Digital Networking – Interactive sessions for attendees to test their skills through various games like trivia, puzzle solving, and more.

For more information and to register, go to ACS Spring - American Chemical Society.

2025 Earth Action Expo Day, April 26

Gina Malczewski, Outreach, Midland Section ACS

This year's Earth Action Expo will be held once again at Dow High School in Midland. As always, it is FREE and open to the public. Sponsors include the Midland Section ACS, Dow High Go Green, Midland Center for the Arts, Midland Recyclers, Chippewa Nature Center, MSU-St. Andrews, and NOBCChE. Exhibits will be open from 11:00 AM to 3:00 PM.

Presentations by speakers (including Peter Sinclair) will be offered every 45 minutes beginning at 11:15 AM (one option per time slot). The last part of the program will be an "Action/Exchange" session where earth-focused non-profit organizations, NGOs, and student groups can find out more about what everyone is doing and look for potential collaborations.

Food trucks will be available, and once again we plan to display hybrid and electric vehicles. There will be panels on food waste, and a sewing room for repurposing fabrics and learning to crochet with plastic bags. A Story Time focused on young children will also be offered, and Illustrated Poem contest entries will be displayed in the Media Center. See page 16 for more information about the Illustrated Poem contest. STEM activities will abound!

We will need lots of volunteers and please encourage people who can offer different activities to register. Please contact the Expo organizers at earthday@midlandacs.org if you have any questions or wish to participate.

EARTH ACTION EXPO

Saturday, April 26, 2025

11 AM - 3 PM

HH Dow High School

3 PM - 4 PM Power Hour Conversation

Scan to save the date and get updates

You're invited to enjoy

- Sustainability speakers
- Hands-on science
- 50+ Exhibitors
- e-Recycling inc. TVs, batteries
- EV car show
- Food trucks
- K-12 illustrated poem exhibit

Speaker Schedule:

- 11:15 Saginaw Bay Watershed - Meaghan Gass, Michigan Sea Grant
- 12:00 Food Waste/Food Security - Samantha McKenzie, Hidden Harvest & Jennifer Grace, Arnold Farms
- 12:45 Mountains of Ice: How the Glaciers Shaped Michigan - Ian Sanders, Chippewa Nature Center
- 1:30 Greenland: A Crucially Important Landscape - Peter Sinclair
- 2:15 SUN101 - Energy, Environment, and a Vibrant Economy - Peter Sinclair

FREE AND OPEN TO EVERYONE!

Sponsored by

ACS Names its 2025 Outreach Volunteers of the Year – Anne-Catherine Bédard Recognized

Nina Notman, special to C&EN

Editor's note: This article is reprinted, in part, from an article flagged in the online source *C&EN Newsletters*, dated March 12, 2025. The original article was authored by Nina Notman, special to C&EN, dated March 4, 2025.

Anne-Catherine Bédard Photo Credit: Shanice Agyekum

Anne-Catherine Bédard of the Midland Local Section Is Named the Global Outreach Volunteer of the Year Award Winner

The American Chemical Society's Committee on Community Activities has recognized 26 members with 2025 Outreach Volunteer of the Year Awards. Volunteers from local sections and international chapters are honored for their outstanding outreach efforts.

One recipient is named Global Outreach Volunteer of the Year. Anne-Catherine Bédard, a research scientist at Dow, is the 2025 winner. Bédard has led the Midland Local Section's Diversity and Inclusion Committee since 2020, and she is being honored for her work to transform this once-dormant committee into a thriving outreach enterprise.

Outreach programs that Bédard's committee has launched or co-launched include the "A Day in the Life of an Industrial Scientist" events, in which high school and college students work in teams to solve a tricky problem involving both car racing and the space shuttle *Challenger* explosion. The day finishes with a poster session that emphasizes the importance of diverse teams to real scientific research. "The takeaway of "A Day in the Life" is collaboration," Bédard says.

Last year, the Diversity and Inclusion Committee co-hosted its inaugural STEM Day for Girl Scouts. "The Girl Scouts in Michigan typically don't get their science badge because they don't have anyone to run that activity for them – as opposed to the Boy Scouts, who often get it," Bédard says. The volunteers at this event, which the committee plans to run annually, hosted hands-on experiments that covered the badge criteria.

Locally, Anne-Catherine Bédard has led the Diversity and Inclusion Committee since 2020, transforming it into a major outreach initiative for the Midland Section ACS. She secured significant grants and organized impactful events like "Trivia in the Park" and "A Day in the Life," engaging the public and promoting diversity in chemistry. Her social media campaigns, featuring local scientists, have reached thousands. Collaborations with local companies and NOBCChE, including the Bettye Washington Greene Award, further enhance public appreciation for chemistry. These efforts earned the Midland Section ACS the Best Overall Local Section Minority Affairs Committee ChemLuminary award in 2022 and 2024.

Well done! Congratulations, Anne-Catherine!

Announcing the 2025 Spring Awards Recognition Banquet and Call for Nominations

Wendy Flory and Tami Sivy, Awards Committee Co-Chairs, Midland Section ACS

The 34th annual American Chemical Society-Midland Section Spring Awards Recognition Banquet is scheduled for Wednesday, April 30, 2025, at the Great Hall Banquet & Convention Center in Midland. Please consider taking a moment to read about the awards that are open for nominations and consider nominating a worthy peer.

The awards program is about recognizing outstanding educators, volunteers, and colleagues that you have graciously taken the time to nominate. The awards banquet is a great way to connect with others in the industry, those who have gone before us, those who teach the next generation, and those who will be following in our footsteps. Please consider joining us on Wednesday, April 30. We continue with the goal of having outstanding students from all area high schools and universities/colleges recognized, and to have a nominee for each award offered this year. Please help make this happen as there are very deserving people in every category!

The process of nominating is very easy. The minimum submission criteria for nominations are a quality nominating letter extolling the virtues of your nominee and supporting the criteria of the award, along with one supporting letter of recommendation, two are even better. Outstanding high school and collegiate student awards require only the nomination form (see page 12) submitted by the appropriate chemistry teacher or department head. Even easier, for high school and college student nominations, please consider completing the fillable PDF form, NominationFormOutstandingStudent.pdf, and submitting it once completed to Midland Section ACS Awards Committee Co-Chairs, Wendy Flory (wcflory@dow.com) or Tami Sivy (tsivy@svsu.edu).

The nominating letter must state why the nominee is deserving of the award with specific examples of professional involvement/growth, contributions to industry, and outside affiliations. It is highly recommended that the nomination includes a publications and patent list where applicable. Additional letters of support can come from students, parents, community members, and/or administrators. An example nomination letter can be requested from the awards committee co-chairs via email.

Consider getting your colleagues together for lunch and putting together a nomination packet. If you are in a managerial role and are worried about favoritism, consider nominating two to three qualified persons (you will remain anonymous, if requested, and nominations are considered for three years). If you would like to be considered for an award, there is the option to self-nominate. If you are a parent, consider nominating your child's outstanding science or chemistry teacher, or a science volunteer you know. It takes less than an hour to put together an award-winning letter and an additional 15 minutes soliciting supporting letters. Think of what it will mean to that person and how good you will feel about your generous deed.

Previous award recipients are listed on pages 9 to 13 of the January edition of the newsletter at The Midland Chemist - January 2025 (midlandacs.org), as nominees must not have received the award that they are being nominated for within the past ten years. Nominations not meeting the minimum requirements, and submissions received after the **Sunday, March 23, 2025, deadline**, will not be considered.

Please reach out if you have any questions to Wendy Flory (wcflory@dow.com) or Tami Sivy (tsivy@svsu.edu), Midland Section ACS Awards Committee Co-Chairs .

Call for Nominations: 2025 Teaching, Volunteer, Education, and Chemical Sciences Awards

Wendy Flory and Tami Sivy, Awards Committee Co-Chairs, Midland Section ACS

The Midland Section of the American Chemical Society presents awards to recognize outstanding achievement in the chemical sciences each year. Nominations for the 2025 awards are invited for the following areas:

- Outstanding Achievement: Elementary Level Science Teaching
- Outstanding Achievement: Middle Level Science Teaching
- Outstanding Achievement: High School Chemistry Teaching
- Outstanding Achievement: College Chemistry Teaching
- Science Education Volunteer of the Year
- Outstanding Achievement in the Promotion of Diversity in Chemistry, Related Sciences, and Engineering
- Outstanding Achievement and Promotion of the Chemical Sciences
- Outstanding Service to the American Chemical Society
- Outstanding Chemical Technician
- Outstanding High School / College Chemistry Students
- Team Innovation Award

Additional details regarding the awards are available on pages 5 and 6 of the January edition of the newsletter at The Midland Chemist - January 2025 (midlandacs.org).

The deadline for all nominations is Sunday, March 23, 2025. Nominations not meeting the minimum requirements, and submissions received after the March 23 deadline, will not be considered. Mail or fax submissions are acceptable; *electronic (email) submissions are preferred*. All submissions must be accompanied by the name, position, address, and phone number of the nominator.

Award recipients as well as Chemistry Olympiad winners, National Chemistry Week Poem Contest winners, and Fifty/Sixty/Seventy Year ACS Members will be honored with certificates or plaques and featured in an article in the *Midland Chemist*.

The Awards Committee greatly appreciates the efforts involved in nominating someone and wishes to thank you for helping to recognize deserving students, colleagues, and educators in our local section. Please pass this information along to anyone involved in our local science programs!

The National ACS has many great awards available as well. The links to the web addresses where you can find the list of awards and the criteria for nomination are listed on page 13. Now is the time to begin nominations for National ACS awards for 2025-2026 as most annual reviews have a deadline of around November 1, 2025.

For more detail on any award, please contact Wendy Flory (wcflory@dow.com) or Tami Sivy (tsivy@svsu.edu), Midland Section ACS Awards Committee Co-Chairs.

American Chemical Society – Midland Section

Nomination Form for 2025 Outstanding High School / Collegiate Chemistry Student

(Note: One nominee per school, please)

Dept. Chair or other Nominator: _____

Telephone number: _____

Email address (required): _____

School: _____

****

Student's name: (Mr./Ms.)_____
(*Indicate*) (*Please print legibly*)

Home address: _____

Telephone number: _____

Email address (required): _____

Student's career/postgraduate plans (if known):

_____

_____

_____

Please return this form to the following addresses no later than **Sunday, March 23, 2025:**

Wendy Flory (wcflory@dow.com) or Tami Sivy (tsivy@svsu.edu)
Midland Section ACS Awards Committee Co-Chairs

Note: Even easier, please complete the fillable PDF form, NominationFormOutstandingStudent.pdf, and submit it once completed to Wendy Flory or Tami Sivy at their email addresses above.

ACS National Awards for 2025–2026 Nomination

Wendy Flory and Tami Sivy, Awards Committee Co-Chairs, Midland Section ACS

Editor's note: Several Midland Section ACS members have received various National ACS awards over the years. A list of past recipients may be found on pages 14 and 15 of the January edition of the newsletter at The Midland Chemist - January 2025 (midlandacs.org).

Criteria and deadlines for the National ACS awards, and other grants and considerations, can be found at http://www.acs.org/content/acs/en/funding-and-awards/awards/national/nominations.html.

The full list of National ACS awards by title can be found at https://www.acs.org/content/acs/en/funding-and-awards/awards/national/bytopic.html**.**

2025 ACS Spring Awards Recognition Banquet – RSVP Deadline, April 22

Wendy Flory and Tami Sivy, Awards Committee Co-Chairs, Midland Section ACS

ACS Recognition Dinner

Wednesday, April 30, 5:30 PM to 8:00 PM
Great Hall Banquet & Convention Center at Valley Plaza Resort
5121 Bay City Road, Midland, Michigan

Program

5:30 PM – Register, Cash Bar, and Social Time
6:00 – PM Dinner
6:15 PM – Keynote Speaker
6:45 PM – Awards Presentations

Educators, students, ACS members, industry colleagues, and 50-, 60-, and 70-year ACS members/retirees will be recognized for their outstanding achievements at this 34th annual event. 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!

Our keynote will be delivered by Prof. Susan Olesik, PhD, Distinguished University Professor and Dean of Natural and Mathematical Sciences at The Ohio State University. The title of Prof. Olesik's presentation will be "The Power and Potential of Chemistry."

Prof. Susan Olesik received her A.S. from Vincennes University in 1975, B.A. from DePauw University in 1977, and Ph.D. in 1982 from the University of Wisconsin-Madison under the auspices of James W. Taylor in the field of analytical mass spectrometry. She was also a postdoctoral fellow for Milos Novotny at Indiana University from 1982-1984 and for Tomas Baer at the University of North Carolina-Chapel Hill from 1984-1986. She has been a faculty member at The

Ohio State University since 1986, being promoted to Associate Professor in 1992 and Professor in 1997. She continues as the Director of the Ohio House of Science and Engineering (OHSE), a K-16 science outreach center.

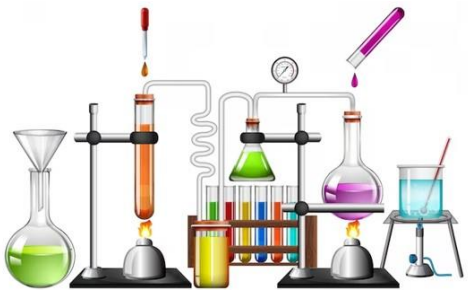
Her awards include: ACS 2014 Helen M. Free Award for Public Outreach, 2014 ACS Award in Chromatography, 2012 AAAS Fellow, 2010 OSU Building Bridges Excellence Award, 2009 ACS Fellow, 2008 ACS National Award for Encouraging Disadvantaged Students into Careers in the Chemical Sciences, 2008 Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences, 2006 OSU Alumni Association Heinlen Award, 2005 Columbus Technical Council (CTC) Technical Person of the Year, 2004 ACS Columbus Section Award for Outstanding Achievement & Promotion of Chemical Sciences, 2000 AWISCO Woman in Science Award, and a commendation from NASA for contributing a GC column to the Cassini-Huygen's probe.

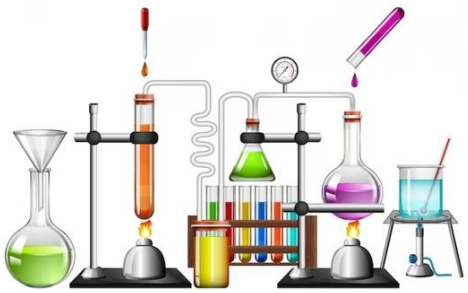
The central goal of Prof. Olesik's research program is to develop new analytical separation concepts that drive the field toward new levels of performance in speed to analysis and chromatographic efficiency. Current projects include: (1) Nanostructured-Based Materials for Separation Science Applications, (2) Ordered Carbon Materials, (3) Enhanced-Fluidity Liquid Chromatography (EFLC), and (4) Nanofibrous Substrates for Laser Desorption Mass Spectrometry.

The cost of the dinner is $20.00 per person and includes dinner, dessert, and a non-alcoholic beverage. A pre-dinner cash bar will be available. Your dinner reservation request must be received by April 22, 2025.

Register to attend at Midland ACS Awards Committee: 2025 ACS Recognition Banquet (signupgenius.com) or by scanning the QR code at the right. You may pre-pay using the *Pre-Pay Registration* option or pay at the door (cash only) by signing up using the *Pay at Door Registration* option.

Dress is business casual. This event is sponsored by the Midland Section of the American Chemical Society. For more information or any questions, please contact Wendy Flory (wcflory@dow.com) or Tami Sivy (tsivy@svsu.edu), Midland Section ACS Awards Committee Co-Chairs.





2025 Great Lakes Bay Area Project SEED Internships

Michelle Rivard, Project SEED, Midland Section ACS

ACS Local Section Midland

Project SEED AMERICAN CHEMICAL SOCIETY

Great Lakes Bay Area Project SEED Internships

Midland Local Section of the American Chemical Society is excited to announce that we have up to **14 PAID** summer research internships available this summer at Saginaw Valley State University, Central Michigan University, Michigan State University –St. Andrews site.

Program Benefits

Paid internship ($4,000)
Hands-on research experience in a lab
Great addition for your college application
Scholarship opportunities ($5-$20K over 1-4 years)

ONLINE APPLICATIONS DUE APRIL 7TH

For more info on program dates, eligibility criteria, and to apply visit
www.acs.org/projectseed
or email project-seed@midlandacs.org

Eligibility Requirements

Must have parent or guardian permission if < 18
Must have completed high school chemistry
Family income must not exceed 300% of the Federal Poverty Guidelines based on family size

Household/Family Size	300%
2	$ 63,450.00
3	$ 79,950.00
4	$ 96,450.00
5	$ 112,950.00
6	$ 129,450.00
7	$ 145,950.00

2025 Illustrated Poem Contest

Gina Malczewski, Outreach, Midland Section ACS

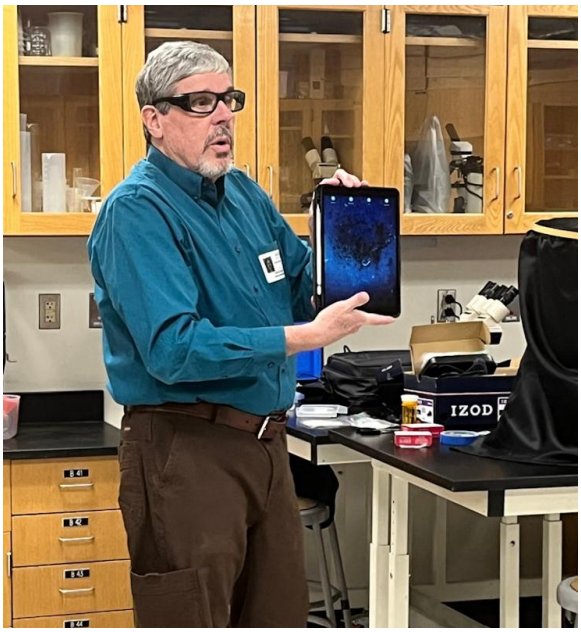
Midland Section ACS Supports Jefferson Middle School STEM Club

Mark Jones, Director, Midland Section ACS

Midland Section ACS outreach volunteer Mark Jones introduced the Jefferson Middle School STEM Club in Midland to environmental microplastics. Christine Brillhart, the Jefferson STEM Club sponsor, invited Mark after having heard about other community events where he spoke on the topic. On Wednesday, March 5, Mark gave a presentation to the students on microplastics, what they are, and where they are found. Then, a week later, on Wednesday, March 12, he brought in sampling equipment, water samples, and microscopes.

Approximately 20 students participated in the lecture and lab. The lab involved filtering and then imaging microplastic particles from the water samples. Samples included Chippewa River water, melted snow from a parking lot, and samples the students had collected. On a day when several news stories were published on microplastics in rain, samples of melted freshly fallen snow collected back in February were also examined. Consistent with the day's reports, large numbers of microplastic particles were found. River, creek, and parking lot samples were cloudy, looking like dirty water. The freshly fallen snow, in contrast, looked pure with no visible contaminants. It was surprising to see the number of particles found in what looked like very pure water.

The lab, developed in conjunction with faculty and students at Central Michigan University, involves rapid filtration of environmental water samples. Imaging under both visible and short wavelength UV light is used to show many otherwise hidden particles. Many environmental microplastics glow under UV light. The majority of the microplastics observed in the collected samples were fibers and tire particles.



Midland Section ACS outreach volunteer Mark Jones shows images of UV-fluorescent microfibers to the Jefferson Middle School STEM club on March 12, 2025. A Wi-Fi-enabled microscope, under the black cloth on the right, shows images on the iPad that Mark is holding. The sample was from melted snow from a parking lot snow pile.

21st Annual MSU ChEMS Department Research Forum, May 6

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 21st annual ChEMS Department Research Forum on Tuesday, May 6, 2025. The forum is a full-day event, running from 8:30 AM to 4:30 PM, and will be held at the MSU Union, 49 Abbott Road, East Lansing, on the campus of MSU. This one-day meeting will feature invited plenary speakers, oral presentations from faculty and staff, and extended poster sessions describing the latest department research results.

Please note that this year's ChEMS Research Forum is being held much earlier in the year (May instead of August) than that of the past several Research Forum programs. Please also note that this year's ChEMS Research Forum is being held at a different location than that of the past several Research Forum programs.

The **21st Annual ChEMS Research Forum** will showcase departmental research advances in the areas of:

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

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.

To see the full agenda for this day-long event, please go to 2025 ChEMS Research Forum.

Pre-registration for the forum is requested. Please register for the event at 2025 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.

Keynote Speakers

Marissa Beatty (left), Founder & CEO of Turnover Labs, Forbes 30 Under 30 in 2024
Xinyue Liu (right), ChEMS Assistant Professor, Forbes 30 Under 30 Asia in 2020.

Marissa Beatty, Founder & CEO of Turnover Labs, Forbes 30 Under 30 in 2024

From Breakthrough to Exit: A Guide to Hardware Startups for Academics and Students

Following initial discovery, there are multiple paths that researchers can take to scale and commercialize technical innovations. Pursuing a hardware startup is one strategy and requires strategic decision-making at every company stage. Successful hardware startups must navigate challenges including company formation, intellectual property licensing, and securing funding through grant support or venture capital. Several skills and resources are required at different company stages to ensure company growth, commercial adoption, customer acquisition, and venture backing. These required skills are frequently evolving as market and customer sentiments shift, making it difficult for first-time founders from academic backgrounds to access and absorb. However, understanding these challenges early and finding avenues for support is essential for transforming hardware breakthroughs into viable, scalable businesses. This talk will give an overview of the general path that hardware startups can take from initial discovery to company exit and cover key decisions and considerations founders should account for in their journey from lab to market.

Xinyue Liu, ChEMS Assistant Professor, Forbes 30 Under 30 Asia in 2020

Designing Polymeric Materials to Modulate Light and Mass Transport for Sustainability and Healthcare

In many chemical and biological systems, surface-limited reactions, characterized by inadequate energy and mass transfer, pose significant barriers to reaction efficiency. The uneven distribution of light, heat, catalysts, and reactants often confines these reactions to a thin surface layer, resulting in suboptimal kinetics and performance. This challenge is particularly pronounced in light-powered and diffusion-controlled processes. In this talk, I will first address the issue of inefficient photosynthetic biomanufacturing caused by limited light penetration in high-density algal cultures, where sunlight absorption is restricted to surface regions. To overcome this, we have developed hydrogel-based waveguides embedded with silica nanoparticles, leveraging both interfacial and bulk scattering effects to enable volumetric illumination. By integrating these light-scattering hydrogel fibers into algal cultures, we achieve deeper and more uniform light distribution, substantially enhancing biomass production rates under both indoor LED lighting and outdoor sunlight. Next, I will discuss our approach to addressing diffusion-limited biodegradation within solid hydrogel matrices. By applying controlled deformations to the hydrogel, we accelerate the mass transport of nano-sized biomolecules and nanoparticles. This promotes enzymatic degradation throughout the entire volume of the hydrogel, transforming the degradation mode from surface erosion to bulk erosion. Overall, these innovations in material engineering demonstrate the potential of hydrogels, and polymer networks more broadly, as versatile platforms for converting low-efficiency, surface-limited processes into high-efficiency, volumetric reactions.

Registration

Pre-registration for the forum is requested. Please register for the event at 2025 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.

2025 Turner J. Alfrey Visiting Professor Lecture Series, June 3

Karol Miller, Administrative Assistant, The Axia Institute, MSU St. Andrews, Midland

MSU St. Andrews is pleased to announce the 2025 Turner J. Alfrey Visiting Professor Lecture Series. Our guest lecturer this year will be Prof. Karen I. Winey, Harold Pender Professor of Engineering and Applied Science, Department of Chemical and Biomolecular Engineering, University of Pennsylvania.

Date: Tuesday, June 3, 2025 Time: 9:00 AM to 4:00 PM
Location: MSU St. Andrews, 1910 West St. Andrews Road, Midland
Guest Lecturer: Prof. Karen I. Winey

Prof. Karen I. Winey

About Karen Winey

Karen I. Winey is the Harold Pender Professor of Engineering and Applied Science with a 50:50 appointment between the Department of Chemical and Biomolecular Engineering and the Department of Materials Science and Engineering. Karen earned her Ph.D. in polymer science and engineering from the University of Massachusetts, Amherst, and joined the Penn Engineering faculty after a brief postdoc at AT&T Bell Labs. Karen has made significant contributions to the field of polymer science, particularly in the understanding of and manipulation of unique polymer nanocomposites and ion-containing polymers. She has a strong record of service including as an Associate Editor for *Macromolecules*, Chair of the Division of Polymer Physics within the American Physical Society, Department Chair of Penn's Materials Science and Engineering Department, and a variety of advisory boards.

Research Interests

The focus of the Winey research group is hierarchical and nanoscale morphologies in polymers and connecting these morphologies to the underlying chemical structure as well as the mechanical, thermal, and transport properties of the materials. We employ a variety of experimental and computational tools to probe the structural and physical properties of advanced polymers including X-ray scattering, electrochemical impedance spectroscopy, and time of flight SIMS. Targeting a variety of energy-related and membrane applications, we study and design functional polymers to improve selective ion and proton conductivity. In polymer nanocomposites, our current interests focus on nanoparticle dynamics across a range of time and length scales. Our newest project focuses on polymer-to-polymer upcycling to convert waste polyolefins to higher value polymers. Our dynamic and highly cited research group is currently funded by the National Science Foundation, the Department of Energy Basic Energy Sciences, and industry.

Dr. Hoda Shokrollahzadeh Behbahani

Dr. Hoda Shokrollahzadeh Behbahani

Accompanying Prof. Winey will be Dr. Hoda Shokrollahzadeh Behbahani. Hoda joined the Winey research group as a postdoctoral researcher after completing her Ph.D. in Chemical Engineering at Arizona State University. During her Ph.D. work, Hoda focused on developing innovative solutions to climate change and water scarcity. Her dissertation, titled "Polysulfones for Sustainability Related Applications," explored functionalized polysulfone-based polymers for direct air capture of CO_2 and the development of enhanced, greener desalination membranes. Hoda's research in the Winey group is focused on the characterization

of functional polymers derived from the upcycling of polyolefins, aiming to enhance sustainability and innovate material reuse.

- Lectures will take place in person at MSU St. Andrews, in Midland.
- Networking luncheon included from 12:30 – 2:00 PM in the MSU St. Andrews Rotunda, sponsored by the Midland Section of the American Chemical Society.
- Prof. Winey and her associate, Dr. Hoda Shokrollahzadeh Behbahani, will deliver five, 45-minute talks throughout the day.
- Time will be allowed for Q&A and discussion.

Registration is open now through Sunday, June 1, 2025, by clicking here.

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 Karol Miller at mill2785@msu.edu.

Agenda and Lecture Topics:

9:00 AM – Introduction and Housekeeping Items – MSU St. Andrews Staff

9:15 AM – Lecture #1 – Prof. Karen I. Winey
Nanoparticle, Segmental and Chain Dynamics in Polymer Nanocomposites.

10:15 AM – Lecture #2 – Prof. Karen I. Winey
Ionomers and the Impact of Precise Microstructures on Mechanical Properties.

11:15 AM – Morning Break

11:30 AM – Lecture #3 – Dr. Hoda Shokrollahzadeh Behbahani
Polymer to Polymer Chemical Transformations to Produce Specialty Plastics from Waste Polyolefins.

12:30 PM – Lunch Break
Lunch will be served in the MSU St. Andrews Rotunda with food provided compliments of the Midland Section of the American Chemical Society.

2:00 PM – Lecture #4 – Prof. Karen I. Winey
Ionomers and the Impact of Precise Microstructures on Transport Properties.

3:00 PM – Lecture #5 – Prof. Karen I. Winey
Proton Conductivity in Hydrated Fluorine Free Polymers.

4:00 PM – Closing Remarks – Robert Bubeck, MSU St. Andrews

This is a free event, but pre-registration is required to help plan for the networking luncheon. Please register no later than Sunday, June 1, 2025, by clicking on 2025 Tuner J. Alfrey Visiting Professorship Lecture Registration. Please share information about this event with others that may be interested in attending. For more information, please contact Karol Miller at mill2785@msu.edu.

Great Lakes Regional Meeting (GLRM 2025), June 4-6

Steve Keinath, Co-Editor, The Midland Chemist

Editor's note: The information contained in this article is reprinted, in part, from a National ACS email communication to all ACS members, dated January 23, 2025.

GLRM 2025 will be held from Wednesday to Friday, June 4 - 6, 2025, in Appleton, WI, hosted by the Central Wisconsin and Northeast Wisconsin Local Sections. **The deadline to submit an abstract is Monday, March 17.**

This year's theme is ***Chemistry for a Better Planet***. Chemistry has led to hundreds of innovative solutions over the last several centuries and it will continue to do so. Chemistry helps us gain a better understanding of the world around us, in all facets of life – health care, environmental science, and more. Chemistry and the planet are closely intertwined with one another and there are connections at all different levels and scales. With this theme, we hope to encourage curiosity and ingenuity to explore and discover all the possibilities that exist between the two.

Visit the website to find a list of the programming divisions and planned symposia open for submissions.

ACS Fall 2025 National Meeting & Exposition, August 17-21

Steve Keinath, Co-Editor, The Midland Chemist

Editor's note: The information contained in this article is reprinted, in part, from a National ACS email communication to all ACS members, dated January 8, 2025.

This in-person and digital meeting will be held in Washington, DC, and globally from August 17-21, 2025. Abstracts for virtual, in-person, and poster presentations for open symposia are being accepted by nearly 30 program divisions. **The deadline to submit an abstract is Monday, March 31.** Please see **ACS Fall 2025**.

This is your chance to share your research with the chemistry community. ACS Fall 2025 brings together chemistry professionals, educators, and students worldwide to discover and share research, network, and advance careers. These meetings are an excellent opportunity for professionals and students to showcase their work and connect with colleagues in all areas of chemistry. Visit the website to learn more about the symposia open for submission.

Spatulageddon Should Never Have Happened: Can the Record Be Corrected?

Mark Jones, Director and Historian, Midland Section ACS

Editor's note: This article is an enhancement of an article that was published in *R&D World*, online publication date 23 January 2025. This version has been amplified and clarified for a Midland area audience.

2024 was the year of spatulageddon. Plastic spatulas were trashed due to reports of dangers lurking within. The journal article that raised concern contained an error, an obvious error. A correction was made but there is more to the story.

The study causing spatulageddon is "From e-waste to living space: Flame retardants contaminating household items add to concern about plastic recycling" published in the journal *Chemosphere*. The corresponding author is affiliated with Toxic-Free Future. The study found brominated flame retardants where they shouldn't be, in objects used to touch food. They went on to make an estimate of the exposure potential, determining it to be 34,700 ng/day for a particular banned flame retardant named BDE-209. BDE-209, now banned, was deemed particularly worrisome. "Estimation of exposure to BDE-209 from contaminated kitchen utensils indicated users would have a median intake of 34,700 ng/day, exceeding estimates for intake from dust and diet," according to the authors. They went on to conclude "Products found in this study to contain hazardous flame retardants included items with high exposure potential, including food-contact items as well as toys." Pretty alarming stuff. A PR push by Toxic-Free Future resulted in headlines like "Black Plastic Kitchen Tools Might Expose You to Toxic Chemicals. Here's What to Use Instead," from the *New York Times* and "Throw Out Your Black Plastic Spatula," from *The Atlantic*. Spatulageddon was on. The study, however, was flawed.

Determining the safety of plastic items that might have BDE-209 in them requires two pieces of information, the level of exposure that represents acceptable risk and whether exposure from use of black plastic articles exceeds that level. The study got both of these wrong.

Before delving deeper, there are a couple of points that make this a bit of a Midland area interest story, particularly relevant to a chemical industry audience. The first is the ever-present mixing of hazard and risk in the popular press. Many studies before this one identified the potential for hazardous materials entering the recycle stream. Hazardous materials are all around us, including flame retardant chemicals. These are added to durable goods, things like computers and TV cases that contain electrical equipment. The keyboard I'm typing on and the mouse next to it almost certainly contain flame retardants. Studies have been done showing that my exposure through touching is minimal. My risk of exposure is very low, well below established thresholds.

Flame retardants are not used in food contact. There isn't a need for those types of goods. There is also the recognition that materials can present risks under some uses. Recycling presents a challenge. It presents a path for hazardous material to cross into unintended uses. There are multiple papers that report finding brominated flame retardants in recyclate and in some kitchen items, some as early as 2013. It is not a new concern. It is an area warranting continuing diligence to confirm that recycling is being done responsibly and with appropriate risk.

Styrenic polymers and Midland are entwined. Styrenic polymers are at the center of the most recent study. Dow's first polymer hit was STYRON™ polystyrene. Growth in styrenics led to Dow becoming a major manufacturer of ABS. The technology links to Midland persist and Trinseo remains a corporate member of the Midland community.

Recycling is important to all the polymer industry. Proving it can be done with acceptable risk is important for success. The spatula study sought to answer an important question: Is recycling being done with acceptable risk? Sadly, the study was flawed.

Flame retardants are added to plastic durable goods. Note the word *durable*. Car dashboards, cases for electronics, and such are places where flame retardants are used. One class of flame retardants are organic molecules containing bromine. Finding a flame retardant that was phased out in 2006-2007 in products purchased today is understandable since it is used in items that are durable. Long service lives means that they will enter the recycle stream long after production.

Brominated flame retardants persist in the environment and are known to bioaccumulate. Adverse health effects have been attributed to exposure. As a class of materials, there are concerns, concerns sufficient to cause banning some small-molecule brominated flame retardants. Dow successfully developed polymeric flame retardants as replacements for materials like BDE-209. Now owned by DuPont, the BLUEDGE™ polymeric flame retardants are still marketed and used.

Early in 2024, the *Freakonomics* podcast introduced me to the concept of *convenient errors*. The topic of the podcast was academic fraud and Leif Nelson of Data Colada was being interviewed. He explained that a one decimal point error, potentially a typo, may well escape notice if it is the direction supporting the hypothesis. That is exactly the type of error made in the black plastic study. In determining whether the flame retardant hazard presented an acceptable or unacceptable risk, the EPA reference dose of 7,000 nanograms per kg of body weight was used. A reference dose is the maximum amount that will not cause harm. 7,000 nanograms per kg of body weight per day for a typical 60-kg adult is 420,000 nanograms a day. A convenient error was made, calculating the reference dose to be 42,000 nanograms a day. Even with the convenient error, the quoted median intake did not exceed the reference dose; it was only 80% of it. The authors nevertheless concluded that it was too close for comfort and worthy of sounding alarm bells. Correcting for the convenient error made the expected exposure well below the reference dose at only 8%.

The error was caught by readers and the article now bears a correction. Today, when you go to the paper in the electronic journal, there is a correction notice. However, the authors did not retract their findings and, more alarming to me, state that the order of magnitude error didn't change their conclusions. In spite of the correction, the authors did not back away from the conclusion that the levels, now well below the reference dose, were still concerning. The alarm bells, according to them, should still sound.

A little more digging shows the work has flaws far greater than the convenient error that was caught. That error mis-stated the safe exposure. The work also miscalculated the exposure, overstating it substantially. All the errors made, like the convenient error, overstated risks.

The study began by collecting 203 different items. These items included toys, kitchen items, and hair accessories. They were all screened for bromine. Only 20 contained bromine over the 50 ppm cutoff established for flame retardant analysis. 183 samples were ignored. The data presented show the cutoff established would eliminate samples with concerning levels of brominated retardants. The abstract states that flame retardants were found in 85% of the samples when, in reality, only 17 of 203 samples contained them. That is only about 8%. The authors cherry-picked data, ignoring most of the samples collected.

It gets worse.

The methods used in the study measure concentration. In order to turn a concentration of flame retardant into an expected exposure, a correlation is used. The truly egregious error involves the application of a correlation developed for exposure to hot oil for all samples whether or not the use pattern involves exposure to hot oil. The application of this correlation where no hot oil exposure is expected grossly overstates the exposure for toys, hair products, and many kitchen items. As an example, a kitchen peeler is not an item exposed to hot oil during use any more than a hairbrush is exposed to hot oil. The paper by Kuang and coworkers providing the hot oil correlation also addressed items that are only handled. They concluded negligible exposure risk. The recent study did not differentiate, applying the hot oil correlation to all 20 samples in the detailed analysis cohort. The troubling exposure value of 34,700 ng/day is grossly overstated.

34,700 ng/day is calculated using the average of all 20 of the BDE-209 measurements converted to exposures using the hot oil correlation. These samples included hair accessories, toys, and kitchen items like peelers not used with hot oil. The items not used in hot oil represent most of the samples and the samples with the largest measured concentrations. Focusing only on the food contact items, only two slotted turners, spatulas, remain since none of the other items are exposed to hot oil during use. Making this transformation produces a median exposure of 0, yes zero, and an average exposure of 79 ng/day, less than 0.02% of the reference dose. Looking at the highest concentration measured for an item in hot oil use paints a similar picture. It would account for an exposure of less than 0.4% of the reference dose. Should that spatula be the one pictured in the paper, it is likely overstated. The KitchenAid spatula shown in the picture has a nylon blade and an ABS handle. Even if there was an elevated level in the ABS handle, it should not have had the hot oil correlation used.

Recall the conclusion: "Estimation of exposure to BDE-209 from contaminated kitchen utensils indicated users would have a median intake of 34,700 ng/day, exceeding estimates for intake from dust and diet." One last error is the misuse of median intake. 34,700 ng/day represents the average value of all 20 samples subjected to detailed analysis. As already detailed, those 20 included items that were not kitchen items. Nothing about the statement is correct.

The flawed study already bears a correction in the journal, *Chemosphere*. *Chemosphere* has hit a bit of a rough patch. *Chemosphere* is "an international journal designed for the publication of original communications on chemicals in the environment," published by Elsevier. In December, Web of Science, the Clarivate service that rates journals, removed *Chemosphere* over shoddy editorial practices. That is another way of saying publishing

work that was being poorly peer reviewed. In 2023, *Chemosphere* had an impact factor of 8.1, now it is delisted. Delisting impacts the journal and the authors publishing there. Academic researchers are rated on their output and impact factor figures into the rating. It is used as a metric in hiring, tenure, and promotion decisions.

I started looking into what types of errors warrant retractions. What I found surprised me. It turns out that few retractions are for getting facts and figures wrong. More are due to ethical concerns. COPE (Committee on Publication Ethics) is the group that everyone seems to point to for guidance on retraction. Their wording is still ambiguous. Retractions are warranted "when a major error (e.g., miscalculation or experimental error)" is made. That seems to more than qualify here.

I wrote a letter to the editor of *Chemosphere* detailing the errors and suggesting they were of sufficient magnitude to warrant retraction. I also forwarded my concerns to Retraction Watch. Their tagline is "Tracking retractions as a window into the scientific process." It is an interesting site to explore. I got a very courteous and very rapid reply from Ivan Orvansky. "Given the large amount of coverage this story has already had, the fact that the paper has already been corrected, and that *Chemosphere* has been delisted from Web of Science, we're very unlikely to expend our limited resources on a story on this." I thanked him and made a donation to The Center For Scientific Integrity, the organization behind Retraction Watch.

The focus on journal quality in the reply caught me a bit off guard. I didn't think discrediting the journal was enough. Journalists will still refer to the flawed work as a peer reviewed study. Going to *Chemosphere* today gives no indications of trouble at the journal. Elsevier does not mention the delisting of the journal. If a journalist were to take the time to go look at the actual published work, they would find nothing amiss. I understand Elsevier not wanting to highlight bad news about one of their products. At the same time, I aspire to a level of transparency that will help us to better understand the scientific literature. If an article has been retracted, it should be loudly proclaimed when I attempt to view the work. Discrediting an entire journal isn't fair to those researchers whose papers are without concerns published there. Still, I would like some stronger indication to be cautious with the content in the journal.

The editor from *Chemosphere* replied that the authors conceded additional errors were made but were suggesting another correction over a retraction. It appears unlikely that my letter to the editor will be published. A more than two orders of magnitude error apparently isn't major enough. It is a work in progress.

My conclusion from the reanalysis of the data presented in the paper is almost diametrically opposed to those of the authors. They appear to remain steadfast in their belief that the presence of the hazard alone warrants concern, that throwing away spatulas was warranted. I believe the work shows black spatulas don't represent a significant exposure risk. It shows that exposure representing an unreasonable risk due to presence of recyclate in products is unlikely. The guardrails currently present in the recycling system are producing products with acceptable risks.

Societal desires are at odds. More recycling is desirable. Having electronics and car interiors that don't become fire hazards is desirable. Reducing exposure to known health concerns, like brominated flame retardants, is also desirable. Recycling always runs the risk of introducing unwanted materials into places you don't want them. It is impractical, if not impossible, to detect and remove everything that could be dangerous during recycling. There are just too many things to look for.

There are a couple of things this episode demonstrates. If the authors had correctly concluded the risk of recyclate in kitchen items was being managed to acceptable levels, the paper would never have gotten noticed.

The convenient error got the work noticed. The correction, surprisingly widely reported, still didn't get the press of the original, flawed announcement. When the next correction appears, it too will largely go unnoticed. The articles by the *Times* and *The Atlantic* will still be indexed by search engines and AI bots. Webinars calling for spatulageddon will remain available. A recent Bloomberg article points out, "coverage can leave so-called zombie facts floating in the consumer conscious." I'm not a big horror movie fan but my limited exposure teaches that zombies are normally easy to kill. That doesn't seem to be the case with zombie facts. Zombie facts appear very difficult to kill.

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Upcoming Dates, Events, and Other Updates

- March 3 (7:00 – 8:30 PM) – Hybrid Midland Section ACS Board meeting, Rotunda Room, MSU St. Andrews, Midland (in person), and via a Microsoft Teams videoconference call connection at March 2025 ACS Board Meeting Teams Link, Meeting ID: 938 651 597 463 5, Passcode: FV2oA7.
- March 14 (9:30 – 10:30 AM) – Girls Day Out at Delta College event. Volunteers are needed at two Delta College locations – the Main Campus where 690 girls have registered to attend and at the Saginaw Center where 193 girls have registered to attend. Cosponsored event by the Midland Section ACS and Women Chemists Committee. For more information, please contact Ashlin Sathyan at ashlin.sathyan@dupont.com.
- March 17 – **Abstract submission deadline for 2025 Great Lakes Regional Meeting (GLRM).** Meeting theme: *Chemistry for a Better Planet*. Hosted by the Central Wisconsin and Northeast Wisconsin Local Sections, Appleton, WI, June 4-6, 2025. For more information, go to GLRM 2025.
- March 23 – **Deadline for Midland Section ACS Spring Awards nominations** to honor outstanding educators, volunteers, and colleagues. For more information or any questions, please contact Midland Section ACS Awards Committee Co-Chairs Wendy Flory (wcflory@dow.com) or Tami Sivy (tsivy@svsu.edu).
- March 23-27, 2025 (Save the Date) – ACS Spring 2025 National Meeting & Exposition, San Diego, CA, hybrid meeting (in-person and virtual). For more information and to register, go to ACS Spring - American Chemical Society.
- March 31 – **Abstract submission deadline for ACS Fall 2025 National Meeting & Exposition**, Washington, DC, August 17-21, 2025, hybrid meeting (in-person and virtual). For more information, please see https://www.acs.org/events/fall.html.

- April 7 (7:00 – 8:30 PM) – Hybrid Midland Section ACS Board meeting, Rotunda Room, MSU St. Andrews, Midland (in person), and via a Microsoft Teams videoconference call connection at April 2025 ACS Board Meeting Teams Link, Meeting ID: 938 651 597 463 5, Passcode: FV2oA7.
- April 7 – **Deadline to submit online applications for the 2025 Great Lakes Bay Project SEED Internships program.** For more information, please see the associated program flyer on page 15. For any questions, please contact project-seed@midlandacs.org.
- April 12 – **Deadline for 2025 Illustrated Poem Contest submissions.** For more information, please see the associated program flyer on page 16. For any questions, please contact MidlandACSPoem@gmail.com.
- April 22 – **Registration deadline for the Midland Section ACS Spring Awards Recognition Banquet.** Register at Midland ACS Awards Committee: 2025 ACS Recognition Banquet (signupgenius.com) or by scanning the QR code on page 14. Please see the article on pages 13 and 14 for more details. Please contact Wendy Flory (wcflory@dow.com) or Tami Sivy (tsivy@svsu.edu) with any questions.
- April 30 (5:30 – 8:00 PM) – Midland Section ACS Spring Awards Recognition Banquet, Great Hall Banquet & Convention Center, 5121 Bay City Road, Midland. The cost of the dinner is $20.00 per person and includes dinner, dessert, and a non-alcoholic beverage. A pre-dinner cash bar will be available. Register to attend at Midland ACS Awards Committee: 2025 ACS Recognition Banquet (signupgenius.com) or by scanning the QR code on page 14. **Your dinner reservation request must be received by April 22, 2025.** For more information or any questions, please contact Midland Section ACS Awards Committee Co-Chairs Wendy Flory (wcflory@dow.com) or Tami Sivy (tsivy@svsu.edu).

- May 5 (7:00 – 8:30 PM) – Hybrid Midland Section ACS Board meeting, Rotunda Room, MSU St. Andrews, Midland (in person), and via a Microsoft Teams videoconference call connection at May 2025 ACS Board Meeting Teams Link, Meeting ID: 938 651 597 463 5, Passcode: FV2oA7.
- May 6 (8:30 AM – 4:30 PM) – 21st Annual MSU ChEMS Department Research Forum, Michigan State University, MSU Union, 49 Abbott Road, East Lansing, MI. Please note that this year's ChEMS Research

Forum is being held much earlier in the year (May instead of August) than that of the past several Research Forum programs. Please also note that this year's ChEMS Research Forum is being held at a different location than that of the past several Research Forum programs. Pre-registration for the forum is requested. Please register for the event at 2025 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.

- June 1 – **Preregistration deadline to attend the 2025 Turner J. Alfrey Visiting Professor Lecture Series** program, Tuesday, June 3, 9:00 AM – 4:00 PM, featuring Prof. Karen I. Winey from the University of Pennsylvania. Please register by clicking on 2025 Tuner J. Alfrey Visiting Professorship Lecture Registration. For more information or any questions, please contact Karol Miller at mill2785@msu.edu.
- June 2 (7:00 – 8:30 PM) – Hybrid Midland Section ACS Board meeting, Rotunda Room, MSU St. Andrews, Midland (in person), and via a Microsoft Teams videoconference call connection at June 2025 ACS Board Meeting Teams Link, Meeting ID: 938 651 597 463 5, Passcode: FV2oA7.
- June 3 (9:00 AM – 4:00 PM) – 2025 Turner J. Alfrey Visiting Professor Lecture Series program, featuring Prof. Karen I. Winey from the University of Pennsylvania. For more details, please see the article on pages 20 and 21. This is a free event, but pre-registration is required to help plan for the networking luncheon. **Please register no later than Sunday, June 1, 2025,** by clicking on 2025 Tuner J. Alfrey Visiting Professorship Lecture Registration. For more information or any questions, please contact Karol Miller at mill2785@msu.edu.
- June 4-6, 2025 (Save the Date) – 2025 Great Lakes Regional Meeting (GLRM), Appleton, WI, hosted by the Central Wisconsin and Northeast Wisconsin Local Sections. Meeting theme: *Chemistry for a Better Planet*. **The abstract submission deadline is March 17, 2025.** For more information, please visit the **GLRM 2025 website**.

- August 4 (7:00 – 8:30 PM) – Hybrid Midland Section ACS Board meeting, Rotunda Room, MSU St. Andrews, Midland (in person), and via a Microsoft Teams videoconference call connection at August 2025 ACS Board Meeting Teams Link, Meeting ID: 938 651 597 463 5, Passcode: FV2oA7.
- August 17-21, 2025 (Save the Date) – ACS Fall 2025 National Meeting & Exposition, Washington, DC. This meeting will be a hybrid in-person and virtual meeting. **The abstract submission deadline is March 31, 2025.** For more information, please see https://www.acs.org/events/fall.html.

- September 8 (7:00 – 8:30 PM) – Hybrid Midland Section ACS Board meeting, Rotunda Room, MSU St. Andrews, Midland (in person), and via a Microsoft Teams videoconference call connection at September 2025 ACS Board Meeting Teams Link, Meeting ID: 938 651 597 463 5, Passcode: FV2oA7. **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.**

- October 6 (7:00 – 8:30 PM) – Hybrid Midland Section ACS Board meeting, Rotunda Room, MSU St. Andrews, Midland (in person), and via a Microsoft Teams videoconference call connection at October 2025 ACS Board Meeting Teams Link, Meeting ID: 938 651 597 463 5, Passcode: FV2oA7.

- November 3 (7:00 – 8:30 PM) – Hybrid Midland Section ACS Board meeting, Rotunda Room, MSU St. Andrews, Midland (in person), and via a Microsoft Teams videoconference call connection at November 2025 ACS Board Meeting Teams Link, Meeting ID: 938 651 597 463 5, Passcode: FV2oA7.

- December 1 (7:00 – 8:30 PM) – Hybrid Midland Section ACS Board meeting, Rotunda Room, MSU St. Andrews, Midland (in person), and via a Microsoft Teams videoconference call connection at December 2025 ACS Board Meeting Teams Link, Meeting ID: 938 651 597 463 5, Passcode: FV2oA7.

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