

THE MIDLAND CHEMIST

A publication of the Midland Section of the American Chemical Society

December 2024, Vol. 61, No. 12

Contents

Chair Column	1
Midland Section ACS Board of Directors 2025 Election Results	8
Girl Scouts STEM Day	10
Radio Astronomy: A Whole New World That We Couldn't Otherwise See	12
Invitation to Annual Volunteer Appreciation Dinner, December 16.....	13
Produce and Productivity Aplenty: The ACS Garden at Creative 360	15
Outreach: A Successful Summer, A Fruitful Fall.....	16
The Midland Section Fall Scientific Meeting Recap.....	18
Posters Presented at the 2024 Midland Section Fall Scientific Meeting.....	25
Our Centennial Historical Exhibit—Celebrating 105 years and Counting	27
Continued Push Toward Scholarship Fund Goal	29
ACS Spring 2025, Registration Opens December 10	29
GLRM 2025: Chemistry for a Better Planet.....	30
Upcoming Dates, Events, and Other Updates	31

Chair Column

Erin Vogel, Chair, Midland Section ACS



Dear Faithful Readers,

And so, I begin my last chair column this year with the same salutation as my first chair column way back in January. Personally, what a year it has been for me, a true pleasure encouraging individuals and groups behind-the-scenes and watching the many, many Midland Section events unfold and come to successful fruition this past year. The Midland Section of the ACS has something going for it that is special, and the army of dedicated volunteers is a big part of it. Thank you to all who have played both big and small parts in the resounding, ongoing success of the Midland Section ACS.

You may recall that I've used my chair column this year to highlight some bright, shiny stars among my network of colleagues and extended community of science practitioners in the broadest sense. In addition to asking my targeted contributors to share a little about their personal and career story, I also prompted them to share their

“why.” According to Simon Sinek, “When a why is clear, those who share that belief will be drawn to it and maybe want to take part in bringing it to life ... and when a group of believers all rally around a common purpose, cause, or belief, amazing things can happen” [Sinek, S. *Start with Why: How Great Leaders Inspire Everyone to Take Action*; Penguin Books, 2009.]

To get the ball rolling, I shared my “why” in the January 2024 issue of the *Midland Chemist*. Each month thereafter, we were blessed to read the stories of ten other amazing individuals, from February through November. Some contributors enjoyed the opportunity and appreciated my asking them to share their stories. Others were more reticent, even to the point of initially rejecting the idea of having themselves highlighted in this venue. I hope you found the stories of the contributors to be informative and meaningful. I certainly did.

This month, we are featuring not one, but two dedicated and longstanding Midland Section ACS volunteers, namely, the current co-editors of the *Midland Chemist*. Both of these individuals claim to be shy, do not seek the limelight and try to avoid it as much as possible, and loath the notion of self-promotion. Yes, we are talking about Steve Keinath and Vickie Langer. The only solution to having them both agree to the idea of highlighting themselves in this capstone chair’s column article was for each of them to write up each other’s story. Writing about their co-editor partner side-stepped the issue of self-promotion, and in the end, both agreed to the task.

For the record, Steve Keinath has served as an editor or co-editor of the *Midland Chemist* for parts of 19 different years, not all consecutive, as well as serving in many elected officer and Board and committee roles with the Midland Section ACS over many years. Vickie Langer has served as the co-editor of the *Midland Chemist* for the past ten years and has also served in other Midland Section ACS volunteer roles. From here, I’ll let Vickie share her perspective about Steve, and Steve will share his perspective about Vickie, both amazing individuals.



The most rewarding part (for me, Vickie Langer) about this assignment from our Chair, Erin Vogel, was the opportunity to learn more about Steve’s early years and his life outside of ACS. Steve grew up on a 140-acre farm in Millington, in Michigan’s Thumb, where crops of corn, alfalfa (hay), wheat, and oats were grown. The farm included space for feeder cattle, with up to 120 head at the time he left home to go to graduate school. Morning and evening chores were a constant throughout his middle school, high school, and (commuting from home) college years. Chores further included hay and straw baling, crop planting and tilling, and fall harvesting for a couple of uncles and another nearby dairy farmer. The working farm life taught him the value of hard work, which he learned to really appreciate later in life.

Steve loved English classes in high school and chose to take English all four years of high school even though it wasn’t required. He recalls an excellent English teacher, Theo Jensen, from his junior and senior years who spent time teaching the Latin roots of words. She also introduced Steve to Speech, Interpretative Speaking, and Debate, though he refrained from participating in junior and senior high school class plays; I suspect due to the spotlight rather than a lack of interest. He was fascinated by language and words, and as a result, was also an avid reader and an excellent speller.

Steve is a first-generation college student. Two of his three siblings went to college, too, but beyond that, just one more cousin across both his mother’s and father’s sides of the family went to college. Very early on, going to college was instilled in him as an expectation, and it became something that he aspired to do.

As part of his early post-secondary education, Steve fondly recalls an excellent Organic Chemistry professor interaction at Saginaw Valley State University (SVSU) with Philip Kumler. He introduced Steve to research and employed him part time during his junior and senior years as a research assistant supported under a project sponsored by Dow polymer research manager Ray Boyer. Phil and Ray encouraged Steve to go to graduate school, the first person ever to do so among Steve's entire extended family.

After completing a Master's in Polymer Science degree from the University of Massachusetts (UMass), Steve hired into Michigan Molecular Institute (MMI) with Ray Boyer as his first boss, after Ray landed there upon his retirement from Dow. The initial hire was for one year for support of a short-term project. That temporary position was extended for a second year. Then, without going through a formal interview process, Steve continued on at MMI where he served in various capacities for the next 35 years.

Along the way, Steve was encouraged to pursue a PhD degree as part of what was called the Michigan Polymer Partnership (MPP), a consortium comprised of MMI, several Michigan universities, and Case Western Reserve University (CWRU). He completed his PhD from Michigan Technological University (MTU) with joint committee members from MMI and Michigan Tech. Beyond his three technical degrees, Steve has two additional Master's degrees, an MBA from SVSU and a Master's degree in Education from Central Michigan University (CMU). Broadly educated and experienced, but you'll never hear about this from modest and reserved Steve. For example, he hates to be called "Doctor," saying there's nothing special about it since there are lots of PhDs in Midland.

Steve was named as a co-author on Kumler and Boyer research publications from early on, based on his insights and contributions to research projects. From the beginning, he had a penchant for "correcting" draft manuscripts and polishing them to make them more readable.

Early in his career at MMI, Steve was given the opportunity to participate in a supplemental institute initiative called MMI Press, set up for the purpose of publishing MMI Symposium volumes and other select research reports. He worked with Mary Reslock, who had retired from the Dow Chemical Company Library, and learned some "formal" proofreading skills and techniques. In those early days at MMI, Steve answered the "call" in a *Midland Chemist* issue to consider working with Gretchen Kohl as a co-editor. He was welcomed aboard and has served in single editor or co-editor roles over parts of 19 years now, not all continuous, and the rest is history.

Steve humbly considers that he had a "decent enough" 37-year scientific, technical career, all at MMI, with many publications and many presentations over the years. His lab work was mostly of an analytical nature and, in particular, thermal analysis of polymer materials in the early years. He also was involved for several years exploring plastics recycling approaches. Then also for several years, he co-led an MMI team that worked on a polymer coatings-based surface acoustic wave (SAW) chemical warfare agent detection system for a large defense contractor. On top of his technical responsibilities, Steve was also responsible for teaching a number of graduate level polymer courses over a span of about a decade. He notably also managed MMI's (along with other co-sponsors) Turner Alfrey Visiting Professor (TAVP) program for about 15 years.

The last decade of Steve's MMI career was in project management and administrative roles. He estimates that he likely laid his editing eyes on 90% of all research proposals going out the door and a similar percentage of large, extensive federal agency funded research project reports. So, he was a collaborator on most of MMI's research projects at that point in his career without being named as the Principal Investigator per se.

Steve edited at least eight to ten of Hans Georg Elias's polymer materials related books on his own time over many years. Although he is not entirely sure why, being a critical scientific text editor is one of Steve's gifts. He will "see" and correct things that others (authors) cannot "see." Being an "active" type of editor, not just a cut and paste type of guy, he will almost always add or change words, sentence fragments, and even re-write whole sentences in an effort to "polish" an author's original writing, but without changing their unique writing style.

Steve has been an active, contributing member of the Midland Section ACS since 1977. He has held various, elected Board and officer roles continuously from approximately 1992 to present, including Director from 2005 to present; Awards Committee Chair or member, 1992 and 2003-2019; Nominations and Elections Committee Chair, 1994-1997; and Alternate Councilor (National ACS), 1993-1998, 2002-2004, and 2017-2019. Steve was also a valuable member of the Strategic Planning Committee, 2015, and the highly successful Centennial Exhibit Planning Committee, 2015-2019. And, of course, Steve has served as editor or co-editor of *The Midland Chemist* from 1984-1987 and 2010 to present.

Over his years of service, Steve has been honored with two different Midland Section ACS awards – the Midland Section ACS Outstanding Achievement in College Chemistry Teaching Award in 1999, and the Midland Section ACS Outstanding Service to the American Chemical Society Award in 2004.

Beyond ACS, Steve is and has been active in many other organizations over the years, some technical professional associations – Society of Plastics Engineers (SPE), Sigma Xi, North American Thermal Analysis Society (NATAS) – and some non-technical in nature – St. John's Lutheran Church, Gideons International, Lutheran Education Advancement Plan (LEAP), Literacy Council of Midland County (LCMC) which then folded into the Legacy Center for Community Success (TLC4CS), among others.

To highlight just a few of Steve's many volunteer contributions to the broader community —

Steve has been a very active member of St. John's Lutheran Church in Midland for 45 years. Some of his more significant leadership roles include serving as a member of the Board of Christian Day School there for the past 30 years, as a member of the church's employee compensation team for the past 30 years, as a committee member or team leader for the National Lutheran Schools Accreditation (NLSA) self-study review and improvement effort several times every five to six years for the past 20 years, and as one of four Sunday offering counting team leaders, 2010 to present, among other roles.

Steve has been a member of The Gideons International since 2008. He has served in Chair, event coordinator, various leadership chair, and speaker roles, among many others. He also has served as newsletter editor, from 2017 to present. He also mentioned emceeding Pastor Appreciation Banquets several times over the years, which is something that Steve seems well suited to do. In spite of a preference for avoiding the spotlight, Steve will happily, graciously applaud the achievements of others. He also has a "presence" that can hold the attention of an audience.

The Legacy Center for Community Success is a nonprofit social services agency providing (1) Reading and Math literacy services, (2) Substance Abuse Prevention services and Community Advocacy support, and (3) Nonprofit Agency program evaluation services in the greater Midland area and beyond. Steve has been a Board member, serving in various roles, from approximately 2008 to present; has been a volunteer Sunday evening reader for the Midland County Juvenile Care Center Read Aloud Program (JCC RAP) from 2010 to 2019; and has served as Board Chair or Vice Chair and Executive Team Member, 2017-2023.

As for Steve's "why(s)," he is not entirely clear on this score, but maybe parts of the following. Why science? He is a product of the space race in the 1960s and the first Star Trek TV series. There was much awareness of the profound and magical nature and power of science in the air at that time. He did well in high school science classes, so it was natural to pursue a science-related discipline in college. Why writing (and editing)? As mentioned, Steve took four years of high school English, although not required, and he had a great junior and senior years high school English teacher. He was fascinated by language and words and became a good writer even early on. Why volunteerism? As anyone who knows Steve will agree, he enjoys volunteering his time and talents, and is a giving person by nature. Others always come first. He has always intentionally chosen to give back to his profession. He derives immense personal satisfaction in doing so without expecting (or receiving) remuneration. In the end, he believes that the more he "gives," the more he "receives."

Steve learned from, absorbed the passion and energy from, and has felt blessed by interactions with hundreds of Board member and committee cohorts over many years, beyond the myriad work and extended research collaboration and federal agency research sponsor connections which also easily number in the hundreds. In reflection, he has learned what to do from the best, what not to do from the lesser than best, and considers it all to be valuable learning experiences.

I am grateful to have had the opportunity to be a co-editor with Steve Keinath for the past decade with the *Midland Chemist*. Steve, I have learned so much and appreciate the guidance, laughs, and friendship. Thank you.



It is my (Steve Keinath speaking) great pleasure and distinct honor to introduce Vickie Langer to you. For the past 10 years, the two of us have been *Midland Chemist* co-editor partners. After that length of time, one might think that writing about each other would be an easy task because we should know each other pretty well. Not so, though. Both of us are private, quiet individuals who find it more comfortable listening to others rather than talking about ourselves. Nevertheless, Erin Vogel challenged us to tell our stories, or to write each other's stories, and to share our "whys." The exercise of interviewing each other, sharing some bio profile and behind-the-scenes storyline information, and then writing up our respective pieces on each other was hard to do, but at the same time illuminating. I learned a lot about Vickie in the process, and I know you will, too.

Vickie Langer grew up in Morgan County, Indiana, about halfway between Indianapolis and Bloomington. At the time, that area of Indiana was among the most rural of rural areas. Today, the area is booming with economic and population growth. She was a first-generation college student. At home, there was no discussion about going to college after high school, nor much talk on this topic at school either. It just wasn't part of the equation for Vickie in her formative years. She wasn't aware of potential career options beyond maybe being a schoolteacher or a nurse. Early on, she thought about being a writer, but opportunities for such things weren't available nearby, transportation was an issue, and she needed to find a way to support herself financially.

Vickie completed three semesters of coursework at Indiana University toward a Biology bachelor's degree, but then funds ran low, and that dream had to be put aside. She began working in a factory as an operator, then moved on to be a quality assurance inspector, and then was given the chance to fill a temporary lab technician position in the microbiology laboratory when someone was needed immediately. At each step, she proved her

mettle, which led to an opportunity in an analytical lab where overnight shift work allowed her the time and opportunities to learn more about wet chemistry and chromatography techniques.

In January 1993, Vickie took the leap, applied for, and landed a temporary contract lab technician position for herself with DowElanco (later renamed Dow AgroSciences), a then-new joint venture between The Dow Chemical Company and Eli Lilly, in Indianapolis. This role turned into a permanent position for Vickie a few months later in May 1993. As a full-time employee, she became eligible to participate in the company's tuition reimbursement program. She began taking night and weekend classes at IUPUI (Indiana University-Purdue University Indianapolis) and completed a Chemistry bachelor's degree. Obtaining her bachelor's degree was not easy for Vickie. She worked and fought hard to earn that degree. It often meant racing from the Dow AgroSciences site at the northwest side of Indianapolis to the IUPUI campus downtown after work, taking classes typically from about 5:00 to 9:00 PM, or until 10:00 PM or later for lab courses, and occasionally Saturday classes, too.

While pursuing her college degree, she first worked in the labs at Dow AgroSciences studying the environmental fate of pesticides, then moved into the area of crop plant genetics, and then in 2001 moved from Indianapolis to Midland for a chemist position in Dow Analytical Sciences doing research in similar areas.

After a few years in Midland, Vickie accepted a position in the Toxicology and Environmental Research and Consulting (TERC) group at Dow in 2007, working on materials exposure safety studies. Her longstanding technical expertise in TERC has been in the areas of small molecule isolation, identification, characterization, and quantitation using the analytical chemistry tools of chromatography (gas and HPLC), mass spectrometry, and gel electrophoresis, including the combined analytical approaches of GC-MS, LC-MS, and SDS-PAGE.

Vickie's early-on inclination to be a writer has been borne out in her Dow career. She has an innate passion for writing and following through with the careful documentation paper trail that is so critical for a career in a technical field. She has authored well over 100 internal Dow technical reports over the years, being the primary author on most of them. At Dow, she is highly regarded as staunchly dependable, extremely organized, and a person who exhibits exceptional attention to detail. She is consistently sought out for her technical expertise, a great mentor for newer Dow chemists coming along through the corporate research and product development characterization pipeline, currently serving as a Senior Specialist within the organization.

Three or four years ago, Vennesa Jansma moved to a leadership role for the team that Vickie was working with in TERC. Vennesa brought with her a broad perspective of career development paths and she encouraged Vickie to seek opportunities that would be of interest to her and that would fit the type of work that she most enjoyed. This led to a connection with her current team leader, Jennifer Murray, who was also open and encouraging. After a cumulative career of nearly 40 years, including 32 years at Dow and its subsidiaries, Vickie has now transitioned into a research study monitoring role. Her traits as a recognized, highly dependable, and extremely organized person with exceptional attention to detail continue to serve her well in this new role. Vickie certainly enjoyed the old days of analytical lab work – wet chemistry, single-injection chromatography, design-your-own apparatus, etc. – but in recent years she found that modern, computer-controlled instrumentation eventually became less fulfilling work. She is grateful that her new role has extended her career in a wonderful new way.

Vickie is a 27-year member of the American Chemical Society. She joined the ACS in 1998, first as a member of the Indianapolis local section, and then has maintained her ACS membership continuously with the Midland local section since 2001 when she moved to Midland. She would occasionally attend local section events and looked forward to reading issues of the *Midland Chemist*. Although interested in getting more involved and

expanding her professional network, she preferred a more behind-the-scenes role and thus waited before blooming in her volunteer service role with the ACS. In late 2014, she noticed an article in the *Midland Chemist* titled *Seeking Help with an Eye for Detail – MC Editor(s) Needed*. The article was penned by Amy Tesolin-Gee, the primary editor at the time, whom she knew from working in the labs in Dow Analytical Sciences. Vickie inquired of Amy about the opportunity, Amy set up a meeting among herself, Vickie, and me as I was serving as the *Midland Chemist* co-editor then, we discussed the editing duties, it felt like a perfect behind-the-scenes fit for Vickie, and as they say, the rest is history.

Vickie began co-editing alternating months of the *Midland Chemist* beginning in February 2015, and it has been a good servant leadership role experience for her. She has enjoyed the opportunity to work with a diverse group of contributors over the years which not only enhanced the content of the local section newsletter but also broadened her understanding and appreciation of the impact of the Midland Section ACS on local scientists and the community at large.

Her yeoman's volunteer service as a co-editor of the *Midland Chemist* is noteworthy. She contributes significantly to the high quality of our Midland Section ACS publication, and I couldn't be prouder to work alongside someone like her as my co-editor. The *Midland Chemist* has been nominated for a National ACS ChemLuminary Award a couple of times, and most recently in 2022. The spit and polish that shines forth from the pages of the monthly *Midland Chemist* publication help showcase the Midland Section ACS in a very favorable light, and Vickie is one of the behind-the-scenes individuals that makes that happen.

Aside from Vickie's roles with Dow, TERC, and the Midland local section, she has volunteered her time over the years as a coach for the FIRST Robotics program on teams associated with Midland area schools. This experience offered her time to coach her son and some of his classmates for several years, expanding their extracurricular educational advancement in this area. She is also a focal point leader and champion of the PR!ME Employee Resource Group (ERG) in the Great Lakes Bay Region, representing Dow's Michigan Operations. PR!ME creates a culture of appreciation and recognition for mature workers (50 and over) and leverages their unique expertise and experience to contribute to the ongoing, dynamic growth of Dow.

Vickie does not seek the limelight but has had the experience offered to her. When I had the good fortune to assemble a nomination package for her in 2023 for the Midland Section ACS Award for Outstanding Service to the American Chemical Society, I knew that it would be best to ask for her permission first before I proceeded so as not to "offend" her with the potential honor of winning that award. After some gentle persuasion, she agreed to allow her name to go forward with a nomination and she won that distinguished Midland Section ACS award that year. She was happy to receive the award at the Spring Awards Banquet and Recognition dinner event in 2023 and listen to kind words and acknowledgements directed toward her that evening, but at the same time one could tell that she wasn't totally comfortable in that limelight moment.

When I pressed Vickie for her "why," she responded that it may be because of her different "cognitive style." She processes information in a way that focuses on detail. She counts it as both a blessing and a curse to be someone who notices details that are missed or considered insignificant. It is a trait that she sometimes tries to suppress, and editing is an area in which she can let her natural thought processes run free. She also stated that she really enjoys the complex, nuanced nature of language.

Why her interest in science? She shared that she became very interested in math and science in high school and drew inspiration from her high school math teacher, Ms. Winnifred Empson. She sparked an interest in Vickie to look at math and science in a different way. Ms. Empson assigned nightly homework for algebra,

geometry, etc. which made her as a teacher not very favorable among Vickie's classmates, but that was just the right experience for Vickie's brain at the time. She won several math award competitions during her high school years and developed a sense of confidence in herself that she had not experienced in other areas, a confidence that would later allow her to apply for jobs that she otherwise would not have considered.

As to her "why" for volunteering, it is part of her innate nature. She is a giving, sacrificial person. She likes to help and take care of people, drawing a lot of personal satisfaction from helping and doing "good deeds," always preferring them not to be noticed as coming from her. She commented that her personal satisfaction maybe comes from the feeling that she gets adding positive energy or momentum to the world that in the end will be good for everyone. In her heart, she knows that it is good, right, and salutary to give back to her profession and to help develop her younger colleague chemists coming along behind her.

Another example of Vickie's personal, sacrificial giving nature was revealed to me when she chose to bring her mother from her Indiana home to live with Vickie and her family in Midland for several months as her mother was recovering from some surgical/medical procedure a year ago. That effort required a lot, it was disruptive to her home life, but it was something that Vickie was compelled to do. She possesses a great heart. One of her "whys" is definitely the need to give of herself, coupled with a great heart.

Vickie is a professional of many talents and a wonderful example of quiet commitment and servant leadership. She is always patient, helpful, and supportive and dedicated to timely project delivery and follow-through. Personally, I have been blessed with the opportunity to be the co-editor partner of Vickie Langer throughout her now ten-year run with the *Midland Chemist* publication of the Midland Section ACS. It is an honor for me to call her my collaborator and friend. I really appreciate her and treasure our friendship. Thank you, Vickie.

Midland Section ACS Board of Directors 2025 Election Results

Raghida "Reggie" Bou Zerdan, Chair, Nominations & Elections Committee, Midland Section ACS

The Midland Section ACS elections were held from Monday, October 14, 2024, to Monday, November 4, 2024. This year, about 25% of eligible voters participated. Thank you to all the candidates and all the Midland Section members who voted!

Congratulations to the following individuals who have been elected for 2025:

- Chair-Elect – Judith Espinoza Perez
- Treasurer – Justin Massing
- Secretary – Paulami Majumdar
- Nominations and Elections Chair – Raghida "Reggie" Bou Zerdan
- Director (3 years) – Hunter Woodward
- Director (3 years) – Mark Jones
- Director (3 years) – Allison Abdilla

You can find the biographical information for each of the elected officers in the November 2024 issue of *The Midland Chemist*. Link: [The Midland Chemist – November 2024 – Midland ACS](#)

Thank you again to all the candidates and to all the Midland Section ACS members who voted!



**Chair-Elect:
Judith Espinoza Perez**



**Treasurer:
Justin Massing**



**Secretary:
Paulami Majumdar**



**Nominations & Elections Chair:
Raghida "Reggie" Bou Zerdan**



**Director (3 years):
Hunter Woodward**



**Director (3 years):
Mark Jones**



**Director (3 years):
Allison Abdilla**

Girl Scouts STEM Day

Kim Dinh, Inclusion & Diversity Committee, Midland Section ACS

The Diversity and Inclusion and Women Chemist Committees along with Mid-Michigan AIChE and the Mid-Michigan Society of Women Engineers co-hosted a STEM Day for Girl Scouts in the Great Lakes Bay Region on the morning of November 9 at Creative 360 in Midland. Nearly 40 girls ranging from 7 – 10 years old and their parents attended. The girls rotated among 4 demos: slime making, Shrinky Dinks, rainbow milk, and CO₂-extinguished candles, and they all had a wonderful time! Thank you to Creative 360 and all our volunteers to make this happen.



Volunteer pictured above: Carlos Escobar



Volunteers pictured above: Juan Venegas, Heather Spinney, Anne-Catherine Bedard



Volunteers pictured above: Janaya Sachs, Jennifer Larimer



Volunteer pictured above: Juan Venegas

Radio Astronomy: A Whole New World That We Couldn't Otherwise See

Robin McGuire, Science Educator, MSU-St. Andrews STEM Center

[Astronomy Night at MSU-St. Andrews Presentation \(Virtual Only\), Wednesday, December 4, 7:00 PM EST](#)

Have you ever heard of a quasar? How about a pulsar? Were you aware that astronomers have located the center of our Milky Way galaxy? And that our galaxy is a spiral galaxy, just like many others that we can see with powerful telescopes? Well, can you guess what all these things have in common? They were all discovered by radio astronomy – even though the entire field is less than a hundred years old! What else has radio astronomy revealed? Join me and the MSU-St. Andrews STEM Center by Zoom to learn more!

Adults and families with school-age and older children are invited to join MSU-St. Andrews virtually for a presentation on the strange and wonderful world of radio astronomy. We will tell the fascinating story of how radio light was first discovered, how it was first used – accidentally! – for astronomy, and how the field has grown since then. We will summarize the many advantages of radio astronomy and show several different types of radio telescopes. We also will describe the types of objects that emit radio waves. These range from individual atoms to brilliant quasars, among the brightest objects known in the universe. And of course, we will have lots of amazing images that reveal a universe that would be otherwise completely invisible to us.

Plus, we will also talk about what we actually saw, with ordinary visible light, in the beautiful nighttime skies of October and November. The Summer Triangle was still high enough to identify several constellations, but the Great Square of Pegasus was taking over, pointing the way to Andromeda, Perseus, Cetus, Aquarius, Pisces, and more. Jupiter was visible all night, brilliant Venus was out at sunset, Saturn was in the evening, Mars came out later at night, and Mercury rose before dawn. What a great time for planets! We will show you how to find the planets (and more) for yourself.



Parkes Radio Telescope, Australia
(Credit: Ian Sutton, Parkes Radio Telescope)

Astronomy Night at MSU-St. Andrews Presentation (Virtual Only), Wednesday, December 4, 7:00 PM EST. Please register by clicking on https://msu.zoom.us/webinar/register/WN_x9kLNowuRF2RR3gY5-Xf6g.

Invitation to Annual Volunteer Appreciation Dinner, December 16

Erin Vogel, Chair, Midland Section ACS

To celebrate the dedication and accomplishments of our army of Midland Section ACS volunteers, we cordially invite you to attend our Annual Volunteer Appreciation Dinner. This year's event is scheduled for Monday, December 16, from 5:30-8:00 PM, at Creative 360, 5501 Jefferson Avenue, in Midland.

Please join us for a dinner catered by Olive Garden (pasta bar, soup, salad, and breadsticks), enjoy an adult hot chocolate bar, and plan to participate in an entertaining murder mystery, "Murder at the Ugly Sweater Party," so do plan to wear your ugliest holiday sweater to this event as well.



Murder at the Ugly Sweater Party

The Snowflake Lodge is all set to bring back the much-loved Ugly Christmas Sweater party this season. The residents of Snow Falls are buzzing with anticipation for this festive event, a highlight where the elite come together to flaunt their most outrageously tacky holiday wear.

Lately, though, the air has been thick with whispers of blackmail, greed, and plots for revenge among some attendees. Yet, there's a shared optimism that the cheer and goodwill of the holiday season will prevail, smoothing over any rifts just in time for a joyous celebration at the party.

With your ticket in hand, the quest for the ultimate tacky holiday sweater begins. Your adventure starts now, diving into the heart of Snow Falls' holiday festivities.

Some fun props will be available, but you are welcome to bring your own. Please review the available character slots in the link below and sign up to play an **interactive role** in the Murder Mystery by clicking on your character button of choice.

If you are **not interested in an interactive role**, please sign up as a **News Crew** member in the link below so that we can get an accurate head count for dinner. You can always change your mind later. Thank you!

Signup Genius link: <https://www.signupgenius.com/go/70A054BADAA2EA20-52644192-midland#/>

UGLY SWEATER MYSTERY PARTY

ACS Volunteer ★ Appreciation Dinner

COME FOR OLIVE GARDEN, AN
ADULT HOT CHOCOLATE BAR
AND TONS OF FUN!

SIGN UP HERE: 

5:30 pm
December 16
Creative 360
5501 Jefferson Ave

Get ready to solve the mystery!

Produce and Productivity Aplenty: The ACS Garden at Creative 360
Gina Malczewski, Director and Outreach Committee, Midland Section ACS

This year's garden effort was successful in many ways: first, a group of fellow gardeners played a significant role in garden preparation (weeding and spreading wood chips) and continued to contribute throughout the summer, fetching coffee grounds for compost from COFFEE CHAOS, fixing the garden gate, and doing additional general maintenance. The garden manager (an ACS volunteer) installed automatic sprinklers (which were not used in 2023 due to the late start and overwhelming nature of garden care the first year in the new location). ACS plots also benefitted from donations of plants from the Community Garden at Assumption Catholic Church and a separate independent gardener. For the first time, ACS plants started from seed were advanced at MSU-St. Andrews, through use of their hydroponics units.

The garden was beautified by marigolds, sunflowers, a variety of wildflowers, echinacea, yarrow, daisies, phlox, hollyhocks, and monarda. The Children's Teaching Garden sported many of these as well as black-eyed Susans. Our produce included celery, acorn squash, yellow squash, various peppers, MANY varieties of tomatoes, green beans, Thai basil, purple basil, sweet basil, two varieties of kale, romaine and leaf lettuce, broccoli, and LARGE cucumbers.

ACS volunteers spent 160 hours on the garden and related activities; 540 lbs. of produce (some in kind, but most from our garden) were donated to three food pantries (SAMS/EFPN, Care Giving Network) and to a local chef. We conducted two garden-related programs, had a Board visit to the garden, dried herbs for give-away, and froze tomato sauce for future use.



← Teaching Garden
(all photos by Gina Malczewski)



← Garden Produce 2024

Outreach: A Successful Summer, A Fruitful Fall

Gina Malczewski, Director and Outreach Committee, Midland Section ACS

After our Middle School “Wood Works” camp in June, Midland ACS Outreach remained busy with gardens (see separate article), and events that continued through autumn. Besides an event at CMU (see “Exhibit” article), we provided “Bubble-ology” activities at River Days August 3, allowing attendees to learn about bubble composition and longevity, blow bubbles, and check out wand impact on bubble shapes. They also saw carbon dioxide-containing bubbles and those made with oxygen inside—and received bubble gum to take home.

For one day a week over nine weeks June to August, Dave Stickles offered hands-on activities at “Camp Fish Tales” for special needs youth—these included science and art with M&Ms and shaving cream, as well as experiments with rocket balloons and coffee filter chromatography.

We hosted “An Urge for Herbs” event on August 29 at St. John’s Episcopal Church to highlight the utility and chemistry of selected herbs with identification and comparison activities. A sachet-making opportunity with herbs and dried flowers was offered. In addition, attendees ordered and enjoyed personal pizzas with their choice of toppings including herbs from the ACS garden, made by ACS volunteers as they waited.

In September, volunteers became busy with classroom visits again. Science Coaching programs included Diana Deese’s monthly programs at Hemmeter School in Saginaw and Auburn Elementary in Bay City. Gina Malczewski presented to four classes monthly for a 7th grade teacher at Bay City Western Middle School. Each of these teachers received \$500 credit from a science supplier (courtesy of National ACS) to use in their classrooms.



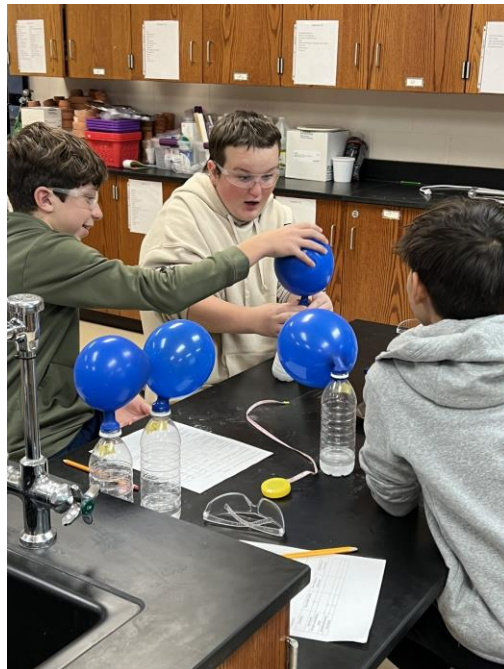
With Fall also came National Chemistry Week (NCW); this year’s theme “Picture Perfect Chemistry” was showcased at Bay City Academy STEM night on October 10 (images on “starlight” paper, imaging with magnets (Magna Doodles and more), and 3-D images made by molding with plaster and silicones). Theme activities were again featured at Frankenstein Friday October 25 (CMU) and at the Halloween Bash on October 26 (Midland Center for the Arts).

Our annual “Pumpkin Party” took place at St. John’s Episcopal Church on October 29—thanks to Johnson’s Pumpkin Farm, everyone was able to decorate a pumpkin (we provided all the craft items). We also made pumpkins using 3-D molds with plaster and silicone, discussed pumpkin nutrition and chemistry, played Pumpkin Bingo, and did an activity with dry ice. Prizes and refreshments were provided.

On November 4 we did another hands-on version of “Bubbleology” for three classes of Kindergarteners and three classes of 3rd graders (STEM day at McAlear Sawden in Bay City). At the Carrollton Schools Fall Resource Fair November 14, attendees participated in activities with water that involved surface tension, density, solubility, and diffusion.

A special needs class at Freeland Middle School was given a program with activities focused on “Observations and Measurement” including the assembly of a group snack (September), and also participated in some of the NCW activities in November. Three hands-on programs of “The Wonders of Water” were presented to students with various challenges at Highland Pines School in Caro on December 4.

The range and impact of our activities continue to expand; surveys (of teachers and attendees) have indicated the benefits and value of these programs!



The Midland Section Fall Scientific Meeting Recap

Mark Jones, Director and Historian, Midland Section ACS

The 2024 annual Midland Local Section Fall Scientific Meeting had something for everyone. The meeting was held on Friday, October 25, at Central Michigan University. Co-chairs Bingbing Lee, Dale LeCaptain, and Erin Nelson pulled together a compelling and interesting meeting. The Biosciences Building at CMU, with its novel layout and IT infrastructure, was a great venue. The support of the Department of Chemistry and Biochemistry and the College of Science and Engineering at Central Michigan University were invaluable in making the meeting a success. Patty Esch of the CMU Department of Chemistry and Biochemistry handled registration and much of the meeting logistics. All went off without a hitch thanks to her efforts. The great location was the perfect backdrop for the great content the organizers assembled. Over 150 attendees were exposed to the great science happening in the area and beyond.

Dr. LaShanda Korley, Distinguished Professor in the Department of Materials Science & Engineering at the University of Delaware, was the keynote speaker. Dr. Korley's talk, "Tackling the plastics waste challenge via catalytic innovations, macromolecular chemistry, and sustainable feedstocks", nicely reinforced the theme of the meeting, *Sustainability, Materials, Where Next?*

During her talk, Dr. Korley described two broad technology areas likely to impact the chemical industry in the future. The first is seeking alternative, more sustainable feedstocks for polymer production. Matching or exceeding existing polymer performance is difficult, yet materials with exceptional mechanical and thermal properties are emerging. The second area is the recreation of desirable monomers from used plastic. Deconstruction and upgrading strategies are also emerging to allow used plastic to have new life and with the properties of current virgin materials. She even touched on biological recycling of polymers. It was an engaging and well-attended talk.

Dr. Valentina Woodcraft, a researcher at the DuPont research labs in Midland, spoke next about locally developed insulation technology that was named a 2024 ACS Heroes of Chemistry. DuPont STYROFOAM® is a well-known product in this area due to it being a long-time Dow product. Dr. Woodcraft described the successful commercialization of reformulated STYROFOAM® to reduce greenhouse gas emissions in her talk entitled *DuPont™ Styrofoam™ Brand XPS Foam: A heroic commitment to sustainability*. The improvements also improved the insulation properties, ensuring even more reduction of greenhouse gas emissions in use.

In addition to these speakers, three additional sessions were held. A career fair started the day, speed presentations followed the keynote presentations, and the day ended with a poster session. The career fair, organized by Hunter Woodward, provided a unique opportunity for students to interact with professionals working at a range of companies. The meeting room, configured with multiple six-seat conference tables, each with its own monitor, proved to be perfect for this event. Students were able to move easily between companies, learning about career opportunities and collecting company swag as they went. Participating companies and institutions were:

- Agilent
- Dow Chemical
- IFF
- DuPont
- BASF

- Montrose Environmental
- Cayman Chemical Company
- DuPont WNN
- QuadSil Inc.
- Central Michigan University
- Haviland Products Company
- SK siltron
- Corteva
- Hemlock Semiconductor
- University of Michigan

Speed presentations followed the keynotes and made use of the room's unique capabilities. Organizers Anja Mueller, Todd Pangburn, and Eric Nelson pulled together a fascinating program. Speakers delivered short presentations, nominally 5 minutes in length, followed by a Q&A session. Participants moved every 8 minutes between tables allowing exposure to all the talks but with each in a more intimate, interactive environment. The presenters and topics were:

- Shalin Patil, Central Michigan University; "Supramolecular structures and dynamics of a class of hydrogen bonding liquids: monohydroxy alcohols"
- Zachary Henderson, Central Michigan University; "A Network-Based SEIR Model for COVID-like Infectious Diseases via U.S. Air Transportation"
- Sabrina Curley, Michigan State University; "Photopolymerization Induced Phase Separation as An Elegant Approach for Designing Surfaces for Water Collection"
- Nadia Allahyarzadeh Khiabani, Central Michigan University; "Non-Invasive Intranasal Administration of G4 70/30 PAMAM Dendrimer in the C57BL/6 Mouse Model"
- Mayank Singh, The National Dendrimer and Nanotechnology Center; "Site Specific Delivery of Cancer Nano-therapies using Receptor Targeted Poly(amidoamine) (PAMAM) Dendrimers as Nano-vectors"

The day ended with a poster session organized by Ben Swarts, Shuangbing Han, and Mary Tecklenburg. Thirty-four posters were presented with participants from the Midland Section and from outside the region. Prizes were given for posters in three areas. The areas and winners were:

Project Seed: Kennedy Holt from Midland for "Design and Characterization of 3D-Printed Capsule Inserts using HPMC filaments incorporating ibuprofen for controlled drug release"

Best Undergraduate: Nora Jannenga, Central Michigan University for "Microplastics and Fluorescence in Natural Water Samples"

Graduate: Isha Gautam, Michigan State University for "Structural Insights into Adaptive Remodeling of Fungal Cell Wall via Solid-State NMR Analysis"

David Ford, CMU Dean of Science and Engineering, hosted a dinner for Dr. Korley following the meeting. His support of the event is greatly appreciated. The event would not have been possible without the support of

Central Michigan University. Its success is the result of the work of many. In particular, the following folks are acknowledged for their contributions:

Co-Chair: Dale LeCaptain, CMU → Career Expo, Facilities, and Budget

Co-Chair: Bingbing Li, CMU → Key-note, Communications

Co-Chair: Eric Nelson, Michigan Sugar Company → Speed Presentations

Speed Presentation Session: Anja Mueller, CMU; Todd Pangburn, Dupont; and Eric Nelson, Michigan Sugar

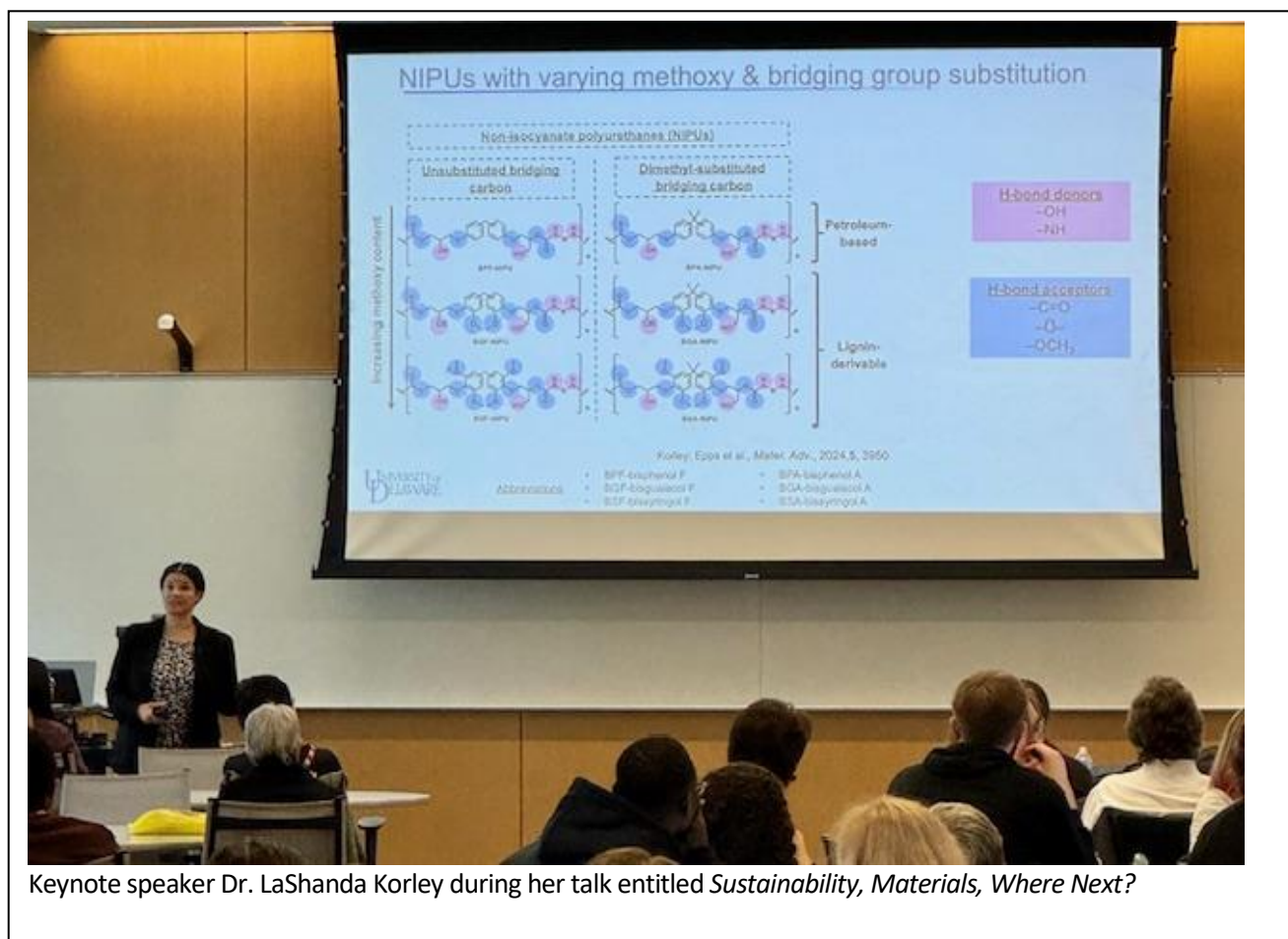
Career Expo: Hunter Woodward, Dow

Communications: Mark Jones, ACS Midland

Poster Session: Ben Swarts, CMU; Shuangbing Han, Dow; Mary Tecklenburg, CMU

Logistics/Registration: Patty Esch, CMU

Thanks to all the participants and presenters as well as to their affiliated organizations which supported their participation in this event!





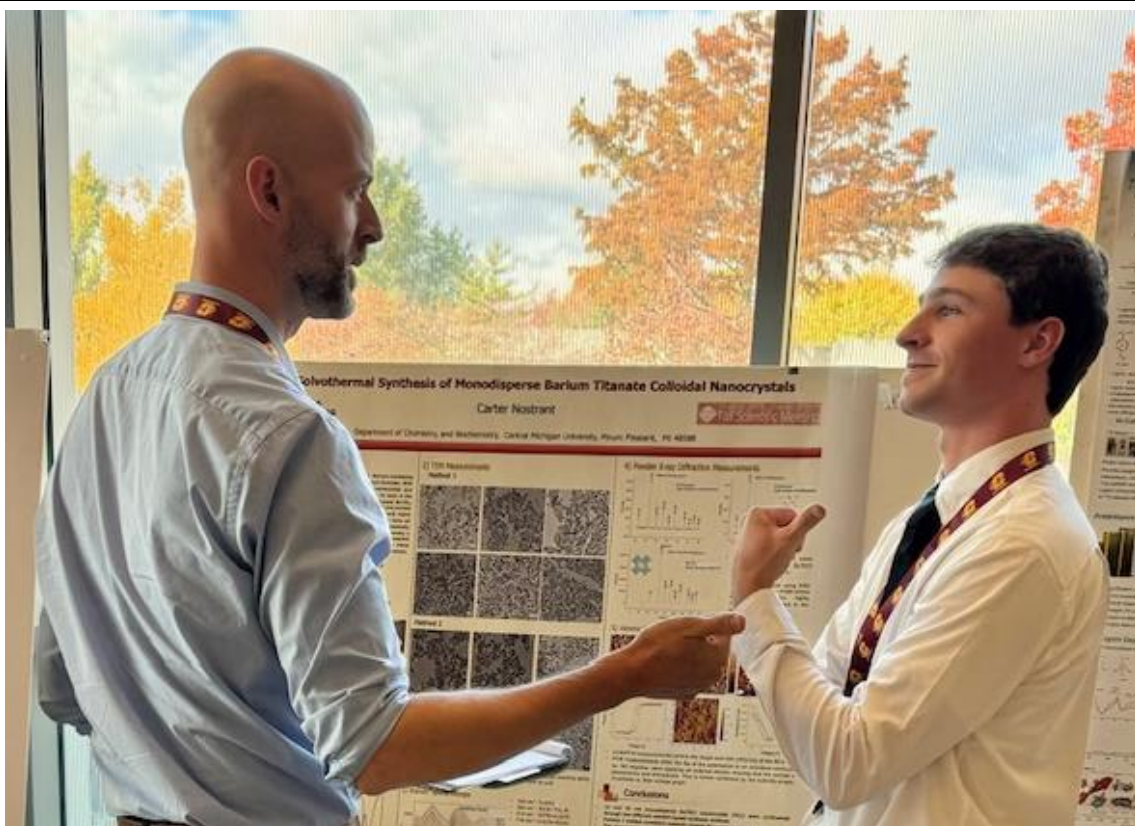
Dr. Valentina Woodcraft presenting *DuPont™ Styrofoam™ Brand XPS Foam: A heroic commitment to sustainability.*



The popular career fair exposed students to opportunities in industry.



Support from Central Michigan University made the event possible. Here, Dean David Ford offers encouragement during the career fair.



CMU Professor Ben Swarts evaluates posters during the poster session.



Biosciences 1015 during the speed presentations. The unique layout and equipment allowed for concurrent presentations.

Posters Presented at the 2024 Midland Section Fall Scientific Meeting

Mark Jones, Director and Historian, Midland Section ACS

Isha Gautam, Michigan State University,

“Structural Insights into Adaptive Remodeling of Fungal Cell Wall via Solid-State NMR Analysis”

Ankur Ankur, Michigan State University,

“Glucan Investigations”

Ashley Slaviero, Central Michigan University,

“An in-silico pipeline for the rational directed evolution of light-sensitive transcription factor EL222”

Alexis Glumm, Saginaw Valley State University,

“Synthesis, characterization, and electrochemical analysis of synthetic biomolecule models containing ruthenium interacting with hydroxamate and/or nitrosyl”

Ben Seltin and Brad Fahlman, Central Michigan University,

“The Effect of Calendering on the Performance of Lithium-Sulfur Batteries”

Debkumar Debnath, Michigan State University,

“Understanding of the Reaction of Lignin with Formaldehyde by Solid-State NMR”

Caleb Mensah, Central Michigan University,

“Development of monosaccharide chemical reporters to probe lipoglycan synthesis and transport in mycobacteria”

Elaheh Emamgholi Zadeh, Alexander D. Silvagnoli, Maya O. Tree, Ute Hochgeschwender, College of Medicine, Central Michigan University,

“Assessing synaptic connections with Interluminescence using TRAP2 mice”

Juncheng Zheng, Michigan State University,

“Effect of Cold Deformation on the Microstructures and Mechanical Performance of Semicrystalline Polymers”

Koksal Karakus, Central Michigan University,

“Modeling the moving front in heated stable glasses”

Maame Esi Amissah, ACS Seed Program, Central Michigan University,

“Synthesis of g-C₃N₄ polymer membranes by electrospinning and UV light polymerization”

Nanzhu Li, Central Michigan University,

“Synthesis of 3,4-dihydroxybenzaldehyde based generation 3 antioxidant dendrons”

Joe Likavec, Project SEED, Central Michigan University,

“Synthesis of Graphitic Carbon Nitride Functionalized with Imprinted Polymers for the Removal of Arsenate and Ammonia in Water”

Marissa Walker, Dow Chemical, Central Michigan University,
“Characterization of Lab-Generated Plastic Particles for Removal Studies”

Phoenix Knipe, Central Michigan University,
“Optimizing the Immune Targeting of Mycobacteria via Surface Glycan Engineering”

Carson Bush, Central Michigan University,
“Synthesis of Azido-Inositol Analogues as Tools to Study Mycobacterial Glycolipids”

Kennedy Holt, ACS Project SEED,
“Design and Characterization of 3D-Printed Capsule Inserts using HPMC filaments incorporating ibuprofen for controlled drug release”

Jonathan Ameh, ACS Project SEED,
“Synthesis of 5-Chloromethylfurfural from renewable resources”

Skylar Medes and Ashlyn Lapratt, Central Michigan University,
“Synthesis of Methyl gallate- and Gallic aldehyde- Antioxidant Dendrons”

Serena Lin, ACS Project SEED,
“Effects of Rainfall on E. Coli levels in Bay County Beaches”

Osheen Dubey, Central Michigan University,
“Enhancing PAMAM dendrimers for targeted delivery of YWHAB siRNA as a promising therapeutic approach for Glioblastoma treatment”

Ekene Osiri, Central Michigan University,
“Optimizing the Scaled-up Synthesis of 6-Azido-Trehalose and 6,6'-Diazido-Trehalose Hexaacetate”

Megan Wilson, ACS Project SEED,
“Analysis of Duckweed Growth in Dow Gardens and Whiting Forest”

Casey Papson, Central Michigan University,
“Synthesis of Trehalose Glycolipids and Evaluation of their Binding to Trehalose Dimycolate Hydrolase from Mycobacterium tuberculosis”

Blessed Agbemade, Central Michigan University,
“SYNTHESIS AND EVALUATION OF D-MANNITOL-BASED ANTIOXIDANT DENDRIMERS”

Emily Propp, ACS Project SEED, Michigan State University,
“Evaluation of Phase Transfer Catalyst in the Preparation of Benzo-15-Crown-5 Ether”

Madi Boerger and Emma Buschlen, CMU College of Science and Engineering, H2O Q,
“Monica C. Holmes Clean Water Initiative for H2O Q Stewardship”

Ashley Brown, Central Michigan University,
“Empowering Student Scientists: Development of a Mobile Spectroscopic Analysis Tool for Environmental Nitrate Testing in H2O Q Programs”

Serena Lin, ACS Project SEED,
“Effects of Rainfall on E. Coli Levels”

Nora Jannenga, Central Michigan University,
“Microplastics and Fluorescence in Natural Water Samples”

Sujith Reddy Ganta, Central Michigan University,
“Effect of surfactant on a lipid Bilayer using DPD”

Mohamed Hamza, Central Michigan University,
“Removing arsenate from water with molecularly imprinted membranes”

Carter Nostrant, Central Michigan University,
“Solvothelmal Synthesis of Monodisperse Barium Titanate Colloidal Nanocrystals”

Peng Xiao, Michigan State University,
“Molecular View of Lignin-Carbohydrate Interactions in Arabidopsis thaliana by Solid- State NMR”

Our Centennial Historical Exhibit—Celebrating 105 years and Counting

Gina Malczewski, Director and Outreach Committee, Midland Section ACS

In 2016 we began to plan for the Midland Section Centennial that would occur in 2019. By its opening in May of that year, at the Herbert D. Doan History Center in Midland, the Historical Exhibit (“A Century of Science and Service”) had received funding from local and National ACS as well as five other Midland-based benefactors. We also collaborated closely with the CMU Museum Studies Program (faculty and students). After an eight-month run which included school and nursing home visits to the exhibit, most of the display was stored at CMU. COVID hit and delayed a new display of the exhibit there, but after renovations at the site, it reopened in 2022. The layout and content vary somewhat from the original, but new exhibits were added over time and Augmented Reality now allows “featured molecules” to be manipulated by visitors in 3-D. Midland and CMU Museum Studies have done joint programs since 2021.

This year, Midland ACS participated in two walk-by activities at the Exhibit, and one high school program focused on Earth Day concerns. “Bug Detective” featuring a “Make a Bug” craft as well as hands-on chemiluminescence, cochineal dye activities, and LIVE BUGS, was held July 16; at Frankenstein Friday (October 25; our fourth in a row) ACS offered experiences with a van de Graaff generator, and experiments with “starlight paper”, plaster and silicone molds, and “magnetic” art to coincide with the National Chemistry Week theme of “Picture Perfect Chemistry”. Once again, spiders and hissing cockroaches were featured (some available for holding). About 250 people attended.

On October 7, Midland ACS held its October Board Meeting at the CMU Chem Dept with ACS Student Club members, after hosting a gathering at the Exhibit to introduce it to new visitors.

Our Exhibit will leave CMU next spring; we are seeking another home but have also recorded a tour of the current display. An in-person visit is encouraged (you can even do a Scavenger Hunt and win a prize), but the remote version can be viewed at: <https://www.youtube.com/watch?v=AcWNFSLoSaU>

Our Centennial Website ([Midland ACS Centennial](#)) continues to be updated and is also a source of information about programs, and people of importance to our Section history.



“Bug Detective” July 16



“Earth Day Extravaganza” with Sacred Heart HS students April 4

Photos by Rebecca Petrone

Continued Push Toward Scholarship Fund Goal

Wendell and Marcia Dilling, Past Historians, Midland Section ACS

We have been working several years to complete the goal of \$100,000 in the Midland Section ACS Scholarship Fund at the Midland Area Community Foundation so that more students can be supported in their college education. The \$100,000 goal was set by the original Scholarship Committee chaired by Lin Dorman in 2002 [*The Midland Chemist*, **2002**, 39, No. 8 (December), 13].

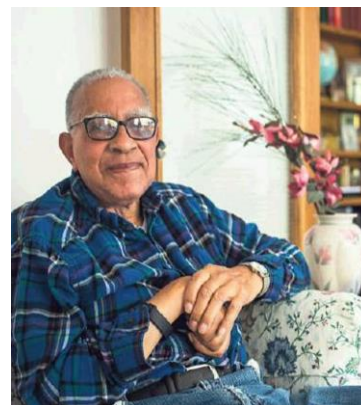
At the half-way point of the initial fund drive in October 2004 the fund stood at \$30,300 [*The Midland Chemist*, **2004**, 41, No. 8 (December), 10-11].

The first scholarship was presented to Andrea Alexander, GPA 3.96, Delta College, in 2005 [*The Midland Chemist*, **2005**, 42, No. 5 (October), 4].

The contributors to the scholarship fund by February 2006 were acknowledged at that point [*The Midland Chemist*, **2006**, 43, No. 1 (February), 8-9].

As of May 2021, the balance of funds in the ACS Scholarship Fund account stood at \$64,953.22 [*The Midland Chemist*, **2021**, 58, No. 5 (May), 9]. Because of the recent slow growth of the fund balance, we issued a challenge then to match 1:1 any new contributions, with a limit of \$18,000.

As of October 2, 2023, the balance was \$65,592.19. During the period, September 30, 2023, to October 1, 2024, two contributions totaling \$1,884.08 were added to the fund and two \$1,500 scholarships were awarded. The fund total on October 1, 2024, was \$76,005.29. The additional contributions of \$1,884.08 will be matched soon. New contributions are encouraged to help reach the overall goal of \$100,000.



Lin Dorman, Chairman of the Original Midland Section ACS Scholarship Committee

ACS Spring 2025, Registration Opens December 10

Steve Keinath, Co-Editor, The Midland Chemist

Editor's note: The information contained in this article is reprinted, in part, from an email message sent to all ACS members on Tuesday, October 22, 2024.



JOIN US IN SAN DIEGO FOR ACS SPRING 2025, MARCH 23-27, 2025

Registration for [ACS Spring 2025](#) opens soon, and we want you to be there to experience all the sessions, career connections, leadership development courses, and networking that can only be experienced in San Diego. Join **13,000+ industry and academic leaders, researchers, and thought leaders** as they share ideas and discuss ways to advance scientific and technical knowledge.

Be there to share your passion for chemistry and to connect with the world's largest scientific society. We hope to see you there!

San Diego offers near-perfect weather year-round, 70 miles of spectacular coastline, world-class attractions, and a thriving urban core making it the perfect location for ACS Spring 2025. Make sure you save the date for this event and plan to be there to experience it all.

Registration for ACS Spring 2025 Opens December 10, 2024

GLRM 2025: Chemistry for a Better Planet *Steve Keinath, Co-Editor, The Midland Chemist*

Editor's note: The information contained in this article is reprinted, in part, from an email message sent to all ACS members on Monday, November 11, 2024.



GREAT LAKES REGIONAL MEETING, APPLETON, WI, JUNE 4-6, 2025 (SAVE THE DATE)

The Central Wisconsin and Northeast Wisconsin ACS Local Sections are thrilled to announce that the **Great Lakes Regional Meeting (GLRM) 2025** is just around the corner! Mark your calendars for June 4-6, 2025, and get ready to join us in Appleton, WI, for an event filled with insightful sessions, networking opportunities, and much more. This meeting will bring more than 400 chemists from industry, academia, and government sectors together.

Stay tuned for more information about the call for abstracts, registration, speakers, and the exciting agenda we have planned. You can find more information at the [GLRM 2025 website](#). We can't wait to see you at GLRM 2025!

Upcoming Dates, Events, and Other Updates

- December 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 [December 2024 ACS Board Meeting Teams Link](#), Meeting ID: 939 576 147 515 1, Passcode: A52hAT.
- December 4 (7:00 – 8:30 PM) – MSU-St. Andrews Astronomy Night presentation, “Radio Astronomy: A Whole New World That We Couldn’t Otherwise See.” For more information, please see the article on pages 12–13. Please register to attend this free, virtual only presentation by clicking on https://msu.zoom.us/webinar/register/WN_x9kLNowuRF2RR3gY5-Xf6g.
- December 16 (5:30 – 8:00 PM) – Midland Section ACS Annual Volunteer Appreciation Dinner and Murder Mystery event, Creative 360, 5501 Jefferson Avenue, Midland. For more information, please see the article and the event flyer on pages 13–14. Pre-registration is required for this free event so that we can get an accurate head count for dinner. Plus, please sign up for either an interactive or a non-interactive role in the Murder Mystery portion of the evening by clicking on the SignUp Genius link: https://www.signupgenius.com/go/70A054BADAA2EA20-52644192-midland#.
- January 6 (7:00 – 8:00 PM) – Hybrid Midland Section ACS Board meeting, Rotunda Room, MSU St. Andrews, Midland (in person), and via a Microsoft Teams videoconference call connection at [January 2025 ACS Board Meeting Teams Link](#), Meeting ID: 939 576 147 515 1, Passcode: A52hAT.
- February 3 (7:00 – 8:00 PM) – Hybrid Midland Section ACS Board meeting, Rotunda Room, MSU St. Andrews, Midland (in person), and via a Microsoft Teams videoconference call connection at [February 2025 ACS Board Meeting Teams Link](#), Meeting ID: 939 576 147 515 1, Passcode: A52hAT.
- March 3 (7:00 – 8:00 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: 939 576 147 515 1, Passcode: A52hAT.
- March 23-27, 2025 (Save the Date) – ACS Spring 2025 National Meeting & Exposition, San Diego, CA, and virtual. A Global Virtual Symposium (GVS) option is also available. Registration for ACS Spring 2025 opens on December 10, 2024. To register, please click on [ACS Spring 2025](#).
- April 7 (7:00 – 8:00 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: 939 576 147 515 1, Passcode: A52hAT.
- May 5 (7:00 – 8:00 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: 939 576 147 515 1, Passcode: A52hAT.
- June 2 (7:00 – 8:00 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: 939 576 147 515 1, Passcode: A52hAT.
- June 4-6, 2025 (Save the Date) – ACS Great Lakes Regional Meeting (GLRM 2025), Appleton, WI. For more information, please visit [GLRM 2025 website](#).

The Midland Chemist is published twelve times a year by the Midland Section of the American Chemical Society, P.O. Box 2695, Midland, MI 48641-2695, <http://www.midlandacs.org>. Current and past issues are available at midlandchemist.org.

Volunteer Staff

Vickie Langer
Steve Keinath
Mike Malczewski

Editor (vlanger@dow.com)
Editor (skeinath54@charter.net)
Webmaster (web@midlandacs.org)

Please submit all articles and photographs to the editor at newseditor@midlandacs.org. Neither *The Midland Chemist*, nor the Midland Section, nor the American Chemical Society assumes any responsibility for the statements and opinions advanced by contributors of or to *The Midland Chemist*.

© Copyright 2024 Midland Section of the American Chemical Society

The Midland Chemist is available online with publication notification through an email alert to its readership. If you have any questions or comments about the content of or submissions to *The Midland Chemist*, please contact the editor at newseditor@midlandacs.org.

