

# THE MIDLAND CHEMIST

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## Chair Column – A Career Built on Relationships

*Robbyn Prange, Chair, Midland Section ACS*



Twenty years ago, I started my chemistry career with Dow Chemical. As I reflect on my career to date, my mind goes back to the many teachers, coaches, and mentors who instilled in me a confidence to achieve success in chemistry. I think of Mr. Depo, my high school physics teacher who had an infectious energy for the physical sciences. I recall, with a full heart, Dr. Harry Allcock, my Ph.D. advisor who did so much more than guide my thesis work and encourage me to start my career with Dow.

*(Photo: Robbyn Prange (left) with Noreen and Dr. Harry Allcock, 2019)*

I recall, as a young professional chemist, talking with subject matter experts at Dow, soaking up as much knowledge as I could with every conversation. Similar to the [Souvagya Biswas Early Career Chemist Feature Story](#) in this issue of the *Midland Chemist* (see pages 5-6), those conversations have been some of the most enjoyable parts of my job. Beyond elevating my technical knowledge, these and other individuals shaped my

perspective and career. I recognize their significance in impacting my professional and personal life and am forever grateful.

Who has impacted your career or the career of a future chemist? Consider thanking them or nominating them for an outstanding achievement award in the chemical sciences. Please see the [Spring Awards Recognition and Call for Nominations](#) articles, also in this issue of the *Midland Chemist* (pages 7-11), for a way to do this.

Whose trajectory have you impacted? Consider checking in on them. Who do you have a chance to impact now? Consider with whom you could share a bit of your time, experience, and wisdom.

### **CMU Department of Chemistry and Biochemistry Spring 2021 Seminar Series** ***Ben Swarts, Associate Professor, Central Michigan University***

The Department of Chemistry and Biochemistry of Central Michigan University is pleased announce its virtual seminar series this semester with some great speakers lined up, including one of C&EN's Talented Twelve, Alison Narayan from the University of Michigan. In addition, a CMU MS alum, Jennifer Shomaker, now at the University of Wisconsin, Madison, will be one of the speakers. Although the schedule is still being filled in, the table below includes the plans that are in place today.

All are welcome and encouraged to join in these virtual WebEx seminars. Just click on the following link: <http://cmich.webex.com/meet/swart1bm>. All of the seminars are scheduled for 4:00-5:00 PM on Mondays on the dates indicated below. For any questions, please contact Ben Swarts at [ben.swarts@cmich.edu](mailto:ben.swarts@cmich.edu).

Date	Speaker	Institution	Title
3/15/2021	Prof. Jennifer Schomaker	University of Wisconsin Madison	Modular SNO-OCT Scaffolds for Rapid, 'Mutually Orthogonal' Bioorthogonal Labeling
3/29/2021	---	---	---
4/12/2021	Prof. Marcos Pires	University of Virginia	TBA
4/26/2021	Prof. Alison Narayan	University of Michigan	TBA



## Midland Section ACS Receives 11 ChemLuminary Awards for 2019 Programs

*Amanda Palumbo, 2019 Chair, Midland Section ACS*



The Midland Local Section of the American Chemical Society won 11 ChemLuminary Awards from the National American Chemical Society for our 2019 programming, including Outstanding Performance by a Local Section (Medium Size) for the 8th consecutive year. We are truly honored to receive these awards. This recognition is a testament to the dedication of our volunteers and their commitment to our community.

These awards recognize the hundreds of events that the Midland Local Section held in 2019, including the 50th Central Regional Meeting, the Centennial celebration of the Midland Local Section, the 150th anniversary of the International Year of the Periodic Table, and the inaugural year of a water quality experiment performed by thousands of middle school students, "H2OQ."

The awards were presented virtually on December 9, 2020 at the 22nd annual ChemLuminary Awards Ceremony. To learn more about upcoming activities or to volunteer, follow the Midland Section ACS on Facebook (<https://www.facebook.com/MidlandACS.org/>). To learn more about the Midland Local Section of the American Chemical Society, please visit our webpage (<http://www.midlandacs.org/>).

The following awards were received by the Midland Local Section:

**Chemists with Disabilities Inclusion Award** for cosponsoring the creation of a tactile 3-D printed periodic table in braille and American Sign Language with Michigan State University St. Andrews, the ACS Committee on Chemists with Disabilities, and Dow.

**Most Innovative New Activity or Program in a Local Section** for conducting a citizen science water-quality experiment during the 2019 ACS Central Regional Meeting. More than 200 volunteers and 3,500 middle-school students conducted tests to measure six water-quality parameters. Learn more about H2OQ here <https://www.cmich.edu/colleges/se/iglr/H2OQualityClassroomProgram/Pages/default.aspx>.

**Local Section Partnership/Marinda Li Wu Award** for hosting the *Science Paints Our World: Chemistry and Art* exhibit at the Midland Center for the Arts.

**Outstanding Local Section Programming Related to the Promotion of Ethics in Chemistry award** for a display at the Centennial Museum Exhibit entitled "Unintended Consequences" focused on ethics and environmental responsibility of chemical professionals. Learn more about the centennial museum exhibit here <http://midlandacs100.org/>.

**Best Event or Activity Organized by, or Benefiting, the Applied Chemical Technology Professional Community** for hosting a chemical technologist-focused, day-long session during the 2019 ACS Central Regional Meeting.

**Outstanding Leadership Development Program award** for the Women Chemists Committee cosponsored event on "Skills Beyond the Bench," in which women chemists shared their advice for successful careers.

**Fostering Interactions between Local Sections and Student Chapters** for partnering with local student chapters and student organizations to provide professional development and career networking opportunities, including workshops, career panels, and tours.

**Best New Senior Chemists Activity within a Local Section** which marked its centennial with a museum exhibit, multiple related events, and a celebratory lunch.

**MAC Industry Engagement and Outreach award** for organizing a symposium on chemical technicians titled “Technologist in Industry: From Molecules to Materials” at the 2019 Central Region Meeting.

**Outstanding Continuing Public Relations Program of a Local Section award** for efforts to promote the hundreds of events including the museum exhibit on chemistry and art, a lecture titled “The Neurochemistry of Music,” and a science café titled “The Science of Syrup.”

**Outstanding Performance by a Local Section in the Medium Size Category** (8th year in a row) for the hundreds of events and activities including the local section’s 100th anniversary, launching the citizen science water-quality experiment, and hosting the 50th ACS Central Regional Meeting.





## Early Career Chemist Feature Story: Souvagya Biswas

Steve Keinath, Co-Editor, *The Midland Chemist*

Editor's note: The following article is reprinted, in part, from the Thursday, February 18, 2021 issue of *Industry Matters Newsletter*, an online publication of the American Chemical Society. The original article was authored by ACS writer Nina Notman.



### Souvagya Biswas, Associate Research Scientist, Dow

(Photo credit: James Cabrera, Dow)

***Meet a designer of catalysts for the production of industrial chemicals. Souvagya Biswas explains how his passion for chemistry and a series of fortuitous introductions led him to a career in industry.***

It was scents that first attracted Souvagya Biswas to chemistry. “When I was a kid, it always fascinated me that vanillin and methyl salicylate had such unique smells,” he says. His passion for chemistry was ignited when, in high school, he learned their odors were due to the molecules contained within them.

A bachelor's degree in chemistry, at Jadavpur University, Kolkata, was followed by a master's degree in chemistry at the Indian Institute of Technology, Bombay. It was there that Biswas fell for asymmetric catalysis, during a short course taught by T.V. RajanBabu, a visiting lecturer from Ohio State University.

After graduating with his master's degree, Biswas joined RajanBabu's research group for a PhD in asymmetric carbon-carbon bond formation. He then joined Dean Toste's group at the University of California, Berkeley, for a postdoc in asymmetric catalysts for carbon-heteroatom bond formation.

During his postdoc experience, Biswas got a glimpse of scientific life outside of academia through a collaboration with Dow's Core R&D synthesis and catalysis group. “I started interacting with a Dow scientist and was amazed to see some of the fundamental challenges that still exist in industry and to learn how solving them would have such a relevance in our daily life,” he explains.

In January 2018, Biswas joined the same Dow team. He designs rhodium catalysts for the conversion of propylene feedstock into butanal. “Butanal, and other oxygenated solvents, are basic precursors for surface coatings, resins, dyes, paints, and plasticizers,” Biswas says. “I am developing more efficient and robust catalysts for the hydroformylation reactions to meet the global demand for these chemicals.”

Biswas is also the industrial lead in a Dow collaboration with Craig Hawker and Chris Bates at the University of California, Santa Barbara to study the phase behavior of silicone-organic hybrid materials.

In his spare time, Biswas volunteers with the Midland Section of the American Chemical Society as a means to advocate for industrial chemistry careers. “Providing graduate students with a perspective from industry can help them shape their career and find a way to pursue their passion,” he explains.

### ***What is in your lab coat pocket?***

A Sharpie, a pen, a pencil, pipette bulbs, cut-resistant gloves, and a new pair of nitrile disposable gloves.

***What tool can't you live without in the lab?***

Nuclear magnetic resonance spectroscopy. I use NMR multiple times a day when I'm in the lab.

***What is the best part of your job?***

Talking with subject matter experts inside the company. People who have spent 30 years of their career solving a single problem have so much knowledge, and learning from them is the best part about being in industry.

***Name a project that you are particularly proud of.***

Last year, we developed a new catalyst for the hydroformylation reaction. We had many challenges, and it was really rewarding when we eventually provided a synthetic route to the catalyst. We are now working on the scale-up process.

***What is your favorite catalyst and why?***

I have so many of them! Catalysts close to my heart include the Wilkinson catalyst, the Ziegler–Natta catalyst, and the cobalt-based catalysts used for hydrovinylation.

***If you could develop a catalyst that sped up any reaction at all, what would it be?***

A catalyst for the chemical recycling of plastics. Sustainability is something that is central to everything Dow is doing right now.

***Who is your scientific hero?***

Henri Kagan, the father of asymmetric catalysis, and R.B. Woodward. Their innovation and unique approaches to organic chemistry were really impressive, especially when you consider how little technology they had available compared to chemists today.

***If you weren't a chemist, what job would you like to do?***

A historian. When reading chemistry journals, I always look for details about the history of the field or mentions of serendipitous discoveries.

***What is your morning routine?***

I wake up between 5:30 and 6:00 AM, have a cup of coffee, take a shower, and then try to hit the lab by 7:00 to 7:30 AM. I like to get a couple of hours in the lab before the meetings begin.



## Announcing the 2021 Spring Awards Recognition and Final Call for Nominations

***Diana Deese, Awards Committee Chair, Midland Section ACS***

The 30th annual American Chemical Society Midland Section Spring Awards in-person banquet event, originally slated for Thursday, May 6, has been suspended due to the ongoing COVID pandemic and the associated restrictions for large, indoor gatherings. However, we will still be recognizing outstanding educators, volunteers, and colleagues that you have graciously taken the time to nominate. Recognizing these folks is even more important at this time when we cannot get together and collectively celebrate in person.

In lieu of the usual banquet event, I will write up an article to feature the awardees in the June or July issue of *The Midland Chemist*. We will recognize outstanding students and those in education and industry, ... those who have gone before us, those who teach the next generation, and those who will be following in our footsteps. Please consider reaching out and sending a note to those that you will see featured, congratulating them on their achievement. For some of the nominees in industry, I will contact the nominator to arrange for small, department gatherings in which to honor the recipient.

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 letters are even better). Consider getting your colleagues together for lunch and putting together a packet. If you are in a managerial role and are worried about favoritism, consider nominating 2-3 qualified persons (you will remain anonymous, if required, 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 only takes about one 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 good deed.

Nomination packets for all awards (except outstanding high school and collegiate awards) must, at a minimum, consist of a current resume or equivalent, and at least one supporting letter in addition to your letter of nomination, all stating 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 chair via e-mail. Previous award recipients were listed in the January 2021 issue of *The Midland Chemist* ([January newsletter](#)), as nominees must not have received the award that they are being nominated for within the past 10 years. Nominations not meeting the minimum requirements, and submissions received after the March 26, 2021 deadline, will not be considered.

As always, contact me if you have any questions: Diana Deese, Midland Section ACS Awards Committee Chair ([dkdeese@dow.com](mailto:dkdeese@dow.com)).

**Final Call for Nominations: 2021 Teaching, Volunteer, Education, Chemical Sciences Awards**  
***Diana Deese, Awards Committee Chair, Midland Section ACS***

Each year, the Midland Section of the American Chemical Society presents awards to recognize outstanding achievement in the chemical sciences. Nominations for the 2021 awards are invited for the following areas:

- Outstanding Elementary Level Science Teaching
- Outstanding Middle Level Science Teaching
- Outstanding High School Chemistry Teaching
- Outstanding College Chemistry Teaching
- Science Education Volunteer of the Year
- Outstanding Achievement in the Promotion of Diversity in Chemistry, Related Sciences, and Engineering  
***(Not offered this year; awarded every other year)***
- 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

***Outstanding Science / Chemistry Teaching Awards***

Candidates for the teaching awards must be educators at schools in the five-county geographical area of the Midland Section: Bay, Gratiot, Isabella, Midland, and Saginaw Counties. One candidate will be recognized for their teaching contributions in each of the following categories: Elementary, Middle Level, High School, and College.

***Science Education Volunteer of the Year***

The Science Education Volunteer of the Year award is presented to an individual who makes a substantial contribution to science learning in the Midland Section through voluntary efforts.

***Outstanding Achievement in the Promotion of Diversity in Chemistry, Related Sciences, and Engineering  
(Not offered this year; awarded every other year)***

This award recognizes a person or group residing in Midland, Bay, Saginaw, Isabella, or Gratiot County for outstanding achievement in enhancing the participation of under-represented groups in the study of chemistry, related sciences, and engineering. The nomination must come from a Midland Section ACS member. The criteria for this award include teaching, mentoring, serving as a role model, and active and sustained participation in organizations that support diversity which have had a demonstrable impact on the promotion of diversity in chemistry, related sciences, and engineering. Members of the Midland Section Minority Affairs Committee are ineligible to receive this award.

***Outstanding Achievement and Promotion of the Chemical Sciences***

Each year the Midland Section honors an individual residing within the Section's geographical area who has demonstrated outstanding achievement and promotion of the chemical sciences. This award recognizes dedication and service to the chemical profession, but the recipient need not be an ACS member.



### ***Outstanding Service to the American Chemical Society***

The Section sponsors an annual award to recognize outstanding service to the Midland Section of the ACS. This award recognizes achievement in the promotion of the goals and objectives of the Society. Nominees shall be members of the Midland Section. Nominations should include a history of service to the Midland Section and supporting letters from fellow ACS members.

### ***Outstanding Chemical Technician***

The Section presents an annual Outstanding Chemical Technician Award to an individual who has demonstrated an extremely high degree of professionalism as a chemical technician. Nominees must have worked for five years as a chemical technician, or in a related field, and whose primary job includes conducting experimentation or correlating information to help solve chemical problems or discover new chemical knowledge. The nominee must have successfully completed a two-year post-high school level chemistry curriculum leading to an associate degree, the equivalent course in a baccalaureate program, or equivalent experience. Chemical technicians do not need to be an ACS member to be eligible for this award. Nominations should include outside affiliations. *Request the National ACS nomination form from the awards chair to nominate in this category.*

### ***Outstanding High School / College Chemistry Students***

The Awards Committee also recognizes outstanding chemistry students at the high school and collegiate levels. Those students should be selected by their respective departments, and their names forwarded to the Awards Committee using the form attached to this call for nominations. One selection per school; no supporting letters are needed.

### ***Team Innovation Award***

Up to three awards per year recognizing the teams responsible for successful, commercialized product or process innovation taking place in the Midland Section area within the current or previous two calendar years. One award will be reserved for organizations with less than 300 employees. ACS membership is not required. Nominations will be judged on inventiveness, impact (economic, environmental, societal), and connection to the Great Lakes Bay Region. Work done outside the area will be considered provided that the contributions of Midland area-based team members are significant. Press releases or other public announcements are expected to be included with the nomination packets for commercialized products or processes (support letters from company leadership will be accepted in lieu of press releases). A \$60 submission fee is required for each team innovation award nomination.

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Recipients of all awards will be selected by the Awards Committee with the exception of the Outstanding Achievement and Promotion of the Chemical Sciences award which is submitted to the Midland Section ACS Executive Committee for approval. Nominators should write a letter indicating the award and describing the attributes of the candidate.

Nomination packets for all awards (except outstanding high school and collegiate awards) must, at a minimum, consist of a current resume or equivalent, and at least one supporting letter in addition to your letter of nomination, all stating 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.

The deadline for nominations is Friday, March 26, 2021. Nominations not meeting the minimum requirements, and submissions received after the March 26 deadline, will not be considered. Mail or fax submissions are acceptable; *electronic (e-mail) 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 and Fifty/Sixty/Seventy Year ACS Members will be honored with certificates or plaques and will also be featured in a future issue of *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!

Now that you realize how exciting it is to nominate someone at the local level and you want to do more, I invite you to peruse the veritable cornucopia of awards that the American Chemical Society offers at the national level. I have listed the web addresses (see below) where you can find out more information relative to each award and the criteria for nomination. Now is the time to begin nominations for National ACS awards for 2021-2022 as most annual reviews have a deadline of around November 1.

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>

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For example nominations or more detail on any award, please contact Diana Deese. *Electronic submissions are acceptable and preferred.*

Diana K. Deese, Chair, Midland Section ACS Awards Committee, Phone: (989) 636-9915, E-mail: [dkdeese@dow.com](mailto:dkdeese@dow.com) or [awards@midlandacs.org](mailto:awards@midlandacs.org)





## American Chemical Society – Midland Section

### Nomination Form for 2021 Outstanding High School / Collegiate Chemistry Student

*(Note: One nominee per school, please)*

Dept. Chair or other Nominator: \_\_\_\_\_

Telephone number: \_\_\_\_\_

E-mail address (required): \_\_\_\_\_

School: \_\_\_\_\_

\*\*\*\*\*

Student's name: (Mr./Ms.) \_\_\_\_\_  
(Indicate) (Please print legibly)

Home address: \_\_\_\_\_

Telephone number: \_\_\_\_\_

E-mail address (required): \_\_\_\_\_

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please return this form to the following address no later than **March 26, 2021**:

Diana K. Deese, ACS Awards Committee Chair, Midland Section

Phone: (989) 636-9915 E-mail: [dkdeese@dow.com](mailto:dkdeese@dow.com)

## Celebrating Earth Day in 2021 – Saturday, May 1 – Save the Date!

*Gina Malczewski, Outreach, Midland Section ACS*

**Chemists Celebrate Earth Week (CCEW) is back!** We had to cancel many of our plans for Earth Day 50 last year due to the COVID-19 pandemic, but as we turn the corner in 2021, we hope that you will join us for a special **Outdoor Earth Day Expo** in the Dow High School parking lot in Midland on Saturday, May 1, 11:00 AM to 3:00 PM.

We are planning for an educational and celebratory event for all ages – with exhibits, activities, food, and more. Admission is FREE. Masks will be required, and all public health guidelines will be enforced. This year's theme is "Reducing Our Footprint with Chemistry." Look for an Earth Day countdown on Facebook. Virtual seminars on environmental topics are also being arranged, and additional specific events may be offered. Additional details will be forthcoming.

If you know of a group that would like to host an exhibit/activity booth at the Outdoor Earth Day Expo, or would like to offer appropriate goods for sale, please have them contact Gina Malczewski ([reginamalczewski@gmail.com](mailto:reginamalczewski@gmail.com)). All stations are free.

On another topic, Michelle Rivard is again leading our virtual Illustrated Poem Contest. Any student in grades K-12 can participate. Winners will be recognized locally, and, in addition, 1st place entries will be entered in the National ACS Illustrated Poem Contest, with the potential for cash prizes. Please contact Michelle Rivard for details at [michelle.rivard@dow.com](mailto:michelle.rivard@dow.com).

## 2021 ACS Virtual Great Lakes Regional Meeting

*Steve Keinath, Co-Editor, The Midland Chemist*

June 6-9, 2021 (**Save the Date**) – 2021 ACS Virtual Great Lakes Regional Meeting (GLRM), hosted by the Minnesota local section. Meeting theme: *Elevating the Importance of Diversity and Inclusion in Chemistry*. For more information, please see <https://www.glrm2021.org/>.



**Please note:** The Great Lakes Region of the ACS formally welcomes the Central Region of the ACS to this virtual conference. The 2021 Great Lakes Regional Meeting will also serve as the 2021 Central Regional Meeting due to complications caused by the COVID pandemic and the cancellation of the 2020 Central Regional Meeting a year ago.

### **COVID Pandemic Creativity: Outreach Continues**

***Gina Malczewski, Outreach, Midland Section ACS***

For nearly a year, providing our typical ACS Outreach activities to the local community has been fraught with challenges. Zoom and other platforms made it easy to communicate verbally during COVID shutdown – perhaps even reaching higher numbers than usual – but children and adults alike have tired of being tied to a computer all day, and teachers have indicated that their students have trouble with participation and retention. The Midland Section ACS has recorded a number of video demos to offer families and teachers, with some experiments that could be mimicked with easily accessible supplies. In activities with a leader, a young student and his mom have also been filmed to show what kinds of interactions are possible.

Last fall, the Midland local section offered hands-on programs at social-distanced, masked events coordinated by Creative 360 (“Story Quest”) and the Midland Center for the Arts (“Halloween Bash”). To offer actual activities in school, some new strategies had to be considered – such as dropping off individual sets of student supplies at school for parent pick-up, or delivery to homes. (Of course, all such supplies have to be evaluated and cleared relative to safety). Once in-person school was possible, supplies could be given to teachers for distribution in the classroom, and paired with a live presentation, group work could begin again. We have employed all of these protocols to try to keep science available and interesting to our area students.

To see a list of all of our educational videos (and links to them), please visit the website: <http://www.midlandacs.org/videos/>. Most are 20-40 minutes. If you have questions, please contact Gina Malczewski ([reginamalczewski@gmail.com](mailto:reginamalczewski@gmail.com)). Some of these efforts are taking place under the auspices of the ACS Science Coaches program; to find out more about that, visit <https://teachchemistry.org/professional-development/science-coaches>.





## Past Midland Section Member Lost to COVID-19

**Wendell Dilling, Director and Historian, Midland Section ACS**

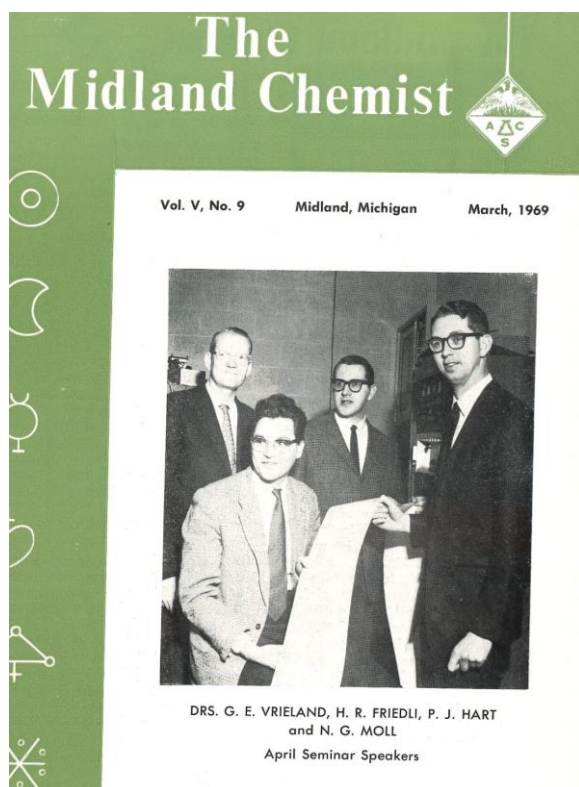
A note in *C&EN*, January 18/25, 2021, p 51, announced the death of **Dr. Hans Ruedi Friedli** (see photo at right, *photo credit Morgan Pascwicz*), 89, on October 29, 2020, as one of over 2 million people around the world who have died from this pandemic. The *C&EN* article included photos and short bios of a number of chemists who have succumbed to the COVID pandemic.

Hans worked 33 years at Dow Chemical Chemical, split between Midland, MI and Freeport, TX. He worked in Product and Process R&D and management, achieving the rank of research scientist and earning 43 patents. He then relocated to Boulder, CO, and embarked on a 15-year second career at the National Center for Atmospheric Research (NCAR) working on aerosol chemistry, publishing 13 papers, and collaborating internationally.



According to the bio provided by his daughter, Andrienne Friedli, in the *C&EN* article, "Hans Friedli had a wide range of technical expertise – polyurethane technology, catalysis, hydrocarbon processing, monomers – and contributed to global R&D strategic development." Andrienne closes her comments about her father by stating that "he was a leader and active participant in scientific, environmental, and humanitarian causes in his local community."

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An earlier photo of Dr. Hans Friedli from his Dow Chemical Company days, in a group with Drs. G.E. Vrieland, P.J. Hart, and N.G. Moll, appeared on the cover of the March 1969 issue of the *Midland Chemist*. That issue announced a panel discussion as the April 1969 Midland Section Seminar on April 7 on "New Developments in Catalysis." Topics covered included transition metal ions in a solid matrix and the effect of the environment on their catalytic properties, quantitative rate correlations based on linear free energy relationships, and the properties of zeolite catalysts. Screen shots of the scanned images of the April 7, 1969 seminar announcement in the March 1969 *Midland Chemist* are shown on the next page.

Added note: Thank you to Marian Matyn, CMU Clarke Historical Library archivist, for retrieving the March 1969 issue of the *Midland Chemist* from the Midland Section ACS archives located in the Clarke Library, and for providing the scanned images shown in this article.

## April Seminar

**"NEW DEVELOPMENTS IN CATALYSIS"**

Drs. H. R. Friedli, G. E. Vrieland, P. J. Hart and N. G. Moll

Monday, April 7, 1969

7:30 P.M., Dow Corning Cafeteria Conference Room

A panel discussion on "New Developments in Catalysis" will be presented at 7:30 P.M. on Monday, April 7 in the Dow Corning Conference Room.

Catalysis is not a science in itself; it involves the application of the principles of organic and inorganic chemistry, solid state chemistry and physics, and kinetics. For many years researchers in the field of catalysis have attempted to develop general theories of catalysis; this has proven frustrating and currently it is considered more fruitful to work on limited theories applicable to related reactions. In this seminar we want to present our views on what the important new developments in catalysis are and then discuss three of them in more detail.

A major event in catalysis has been the coming of age of homogeneous catalysis which not only has led to many novel reactions but also to concepts applicable to heterogeneous catalysis. The routine availability of ultrahigh vacuum equipment has led to an improved understanding of the details of surface structure and ad-

sorption (LEED, Auger spectroscopy and ellipsometry). Quantitative kinetic correlations and reproducible rate constants have been established. Solid state chemistry is a major contributor to the understanding of catalysts as they exist under reaction conditions. Last but not least a number of novel reactions (dismutation, stereoselective polymerizations, shape selective reactions) have become possible through catalytic reactions. This overview will be given by Dr. Friedli.

Dr. Vrieland will discuss some solid state chemistry aspects of catalysis. Specifically, he will give a description of transition metal ions in a solid matrix and the effect of the environment on their catalytic properties.

Dr. Hart will address himself to quantitative rate correlations based on linear free energy relationships (LFER) as proposed by Kraus and Yoneda.

Dr. Moll will discuss the properties of zeolite catalysts. These have become important commercial catalysts and by virtue of their well defined structure lend themselves outstand-

(Continued on page 6)



## Executive House

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(5)

## APRIL SEMINAR

(Continued from page 5)

ingly well for detailed studies of the mechanisms of the reactions they promote.

Dr. H. R. Friedli received his D. Sc. from the Swiss Federal Institute of Technology in 1959, under the direction of Professor Cuyver. His thesis topic was "Hydroformylation of Alcohols". Dr. Friedli joined Dow on the Special Assignment Program in 1959, and worked in both the Strosacker Laboratory and the Chemical Physics Research Laboratory where he is currently Group Leader of the Catalysis Group. His interests include concepts of catalysis and tools for studying catalytic processes. He is experienced in heterogeneous oxidation, alkylation, hydrogenation and dehydrogenation.

Dr. G. E. Vrieland received his Ph.D. from Northwestern University in 1963. His thesis work "Decomposition of Ammonia on Rare Earth Oxides and MnO-MgO Solid Solutions" was directed by Professor Selwood. Dr. Vrieland joined Dow in 1963 on the Special Assignments Program and worked in both the Special Projects Laboratory and the Chemical Physics Research Laboratory where he is presently a research chemist in the Catalysis Group. His interests include oxidation and the structure and properties of solid catalysts.

Dr. P. J. Hart received his Ph.D. from Pennsylvania State University under Professors Vastola and Walker. His thesis topic was "Oxygen-13 Tracer and Low-Temperature Chemisorption Studies of the Carbon-Oxygen Reaction". Dr. Hart joined the Chemical Physics Research Laboratory of Dow in 1966 where he is presently a research chemist in the Catalysis Group. His current interests include tracer studies, surface chemistry and the application of mass spectrometry to heterogeneous reactions.

Dr. N. G. Moll received his Ph.D. in 1966 from the Case Institute of Technology under Professor Thompson. His thesis dealt with "Vacuum Ultraviolet Photochemistry in Low-Temperature Matrices." He joined the Chemical Physics Research Laboratory of Dow in 1968, after holding a post-doctoral fellowship at Mellon Institute (1966-68). He is presently a research chemist in the Catalysis Group. Dr. Moll is interested in specialized applications of spectroscopy to catalysis and molecular structure.



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**April Issue**  
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### In Memoriam – George E. Hartwell, Jr. Steve Keinath, Co-Editor, *The Midland Chemist*

Editor's note: The obituary notice for George Hartwell as it appears here is reprinted, in part, from the Friday, November 6, 2020 issue of the *Midland Daily News*. Although George was no longer a member of the American Chemical Society at his passing, he was an ACS member in years past, and an obituary notice provided by his wife, Ieva O. Hartwell, was published in *C&EN*, February 8, 2021, p 37 (see next page). According to Midland Section ACS Historian Wendell Dilling, George served as the local section secretary in 1981, and up through recent years one could always count on seeing George and Ieva as regular attendees at the local section's annual Fall Scientific Meetings.



George E. Hartwell, Jr., 80, of Midland, passed away the morning of Tuesday, November 4, 2020. George was born in Port Jervis, NY on August 1, 1940, son of the late George E. Hartwell, Sr. and Henrietta (Dunn) Hartwell.

George's education included a bachelor's degree in Chemistry from Union College, Schenectady, NY, master's and doctoral degrees in Inorganic Chemistry,

working with Professor Theodore L. Brown at the University of Illinois, Urbana, IL, and a NATO postdoctoral fellowship with Nobel Laureate Sir Geoffrey Wilkinson at Imperial College of Science and Technology, London, England.

George was an associate professor at Indiana University, Bloomington, IN, from 1966 to 1974, teaching both graduate and undergraduate students. In 1974, George joined the Dow Chemical Company at its research laboratory in Wayland, MA. In 1979, George and his family moved to Midland where he conducted research in catalysis that contributed to new businesses. Throughout his career, he authored 36 publications and received 30 patents. He continued as a research scientist until he retired at the end of 2001.

In retirement, George continued to meet with his Dow colleagues for weekly lunches. He also enjoyed pursuing his hobbies of railroading, genealogy, and coin and stamp collecting. Additionally, he spent time with his grandchildren and shared his love for science and his hobbies.

George is survived by his wife of 55 years, Dr. Ieva (Ogrins) Hartwell; and his two sons, Dr. Peter George Hartwell (Caitlin Darke) and Erik Karl Hartwell; and his grandchildren, Alida Laney Hartwell, Peter Perreten Hartwell, and Henry Dunn Hartwell. He is also survived by his sisters, Sylvia (Harold) Brigham of Hernando Beach, FL, and Mary Jane (John) Millsbaugh of Port Jervis, NY; and many nieces and nephews and their families. George will be remembered as a loving husband, father, and grandfather.

The family elected to hold a family funeral ceremony on Saturday, November 7, 2020 at Ware-Smith-Woolever Funeral Home, 1200 West Wheeler Road, Midland, MI 48640, Phone: 989-631-2292. In accordance with George's wishes, he was cremated and will be buried next summer with his parents in New York. In lieu of flowers, donations may be sent in his honor to the Steam Railroading Institute, P.O. Box 665, Owosso, MI 48867-0665 (<http://www.michigansteamtrain.com/contribute>), or to the donor's charity of choice.

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### **Obituary notice for George E. Hartwell from *C&EN*, February 6, 2021, Volume 99, Issue 5, p 8**

George E. Hartwell, 80, died November 4, 2020, in Midland, Michigan.

"George taught at Indiana University for 7 years. He joined Dow Chemical in 1974 and worked on homogeneous catalysis for products being manufactured by various Dow businesses until his retirement at the end of 2001. Throughout his career at Dow, George continued to teach and mentor chemists in his group and laboratory. 'He was a valued friend and mentor, teacher, and life coach. It is hard for me to imagine what my life would look like without his influence,' colleague David C. Molzahn says. 'George was thoughtful and kind. He always kept a positive outlook and was willing to help and encourage everyone around him. I benefited from his sage advice and direction throughout my career at Dow,' colleague Gary Strickler says." Submitted by Ieva O. Hartwell.

Most recent title: Research Scientist, Dow Chemical

Education: BS, Chemistry, Union College, 1962; PhD, Inorganic Chemistry, University of Illinois at Urbana-Champaign, 1966

Survivors: Wife, Ieva; sons, Erik and Peter; three grandchildren

**In Memoriam – Darrell Duane Mitchell**  
**Steve Keinath, Co-Editor, *The Midland Chemist***

Editor's note: The obituary notice for Darrell Mitchell as it appears here is reprinted, in part, from the Saturday-Sunday (Weekend), February 27-28, 2021 issue of the *Midland Daily News*. Although Darrell was no longer a member of the American Chemical Society at his passing, his obituary mentions his past membership in the ACS and his 30-year research chemist career at Dow Corning Corporation.



Darrell Duane Mitchell, 91, died peacefully at home on February 25, 2021 surrounded by family. Darrell was born September 5, 1929 in Iron River, WI to Albert and Agnes Mitchell. He graduated from Concordia College in 1951 with a Bachelor of Arts degree, majoring in Math and minoring in Chemistry. He continued his education at North Dakota Agricultural College (now North Dakota State University) where he graduated with a Master's degree in Inorganic Chemistry in 1953. He served two years in the U.S. Army where he was stationed at the Army Chemical Center in Edgewood, MD. In October 1955, he began his 30-year career as a research chemist at Dow Corning Corporation in Midland, MI. On December 27, 1955, he married Beverly Myers, and together they shared 65 wonderful years of marriage and raised their three children.

Darrell thoroughly enjoyed spending time at their cottage in Presque Isle, MI, doing construction projects, taking care of the lawn and gardens, and escaping "the rat race." After retirement, Darrell and Bev moved permanently to Presque Isle. They spent summers in northern Michigan but wintered in Arizona, eventually building a home in Gold Canyon which they enjoyed for 18 years.

Darrell was a member of the American Chemical Society and the First United Methodist Church of Midland where he was an usher for many years. He and Bev enjoyed traveling, spending time with friends and family, and getting involved in their kids' and grandkids' activities. He had an engaging sense of humor until the end.

Darrell is survived by his wife, Beverly; their three children and their spouses, Brett (Cecilia) Mitchell, David (Sherry) Mitchell, and Lynn (Tom) Burns; grandchildren, Julie Mitchell, Scott Mitchell, Jennifer (Sean) Asiala, and Megan Burns. Also surviving Darrell are his sisters and their husbands, Marge (Darvin) Miller and Marianne (Dale) Thoen, along with many nieces and nephews. He was predeceased by his parents, his brother Allen and his wife Marjorie Mitchell, his brothers-in-law Marvin Myers and Curt Myers, and his beloved granddaughter, Lauren Burns.

Cremation has taken place and a memorial service will be planned for a later date. In lieu of flowers, any expressions of sympathy are suggested to be directed to Heartland Hospice of Midland, First United Methodist Church of Midland, or Shriner's Hospitals for Children.

The family wishes to thank Brandi and Jen from Heartland Hospice, along with the staff of Colonial Villa, for their support and care over the past several months.

Arrangements have been entrusted to the care of Ware-Smith-Woolever Funeral Home, 1200 West Wheeler Road, Midland, MI 48640, Phone: 989-631-2292.



## Upcoming Dates, Events, and Other Updates

- March 1 (7:00 – 8:00 PM) – Midland Section ACS Board meeting, MCFTA Board Room (anticipated location, in person), or via a WebEx conference call connection at [Cisco Webex Meeting - March 2021](#), phone number: 989-633-1166.
- March 15 (4:00 – 5:00 PM) – CMU Spring 2021 Virtual Seminar Series, featuring CMU MS alum Prof. Jennifer Shomaker from the University of Wisconsin, Madison. All are welcome and encouraged to join in this virtual WebEx seminar. Just click on the following link: <http://cmich.webex.com/meet/swart1bm>. For any questions, please contact Ben Swarts at [ben.swarts@cmich.edu](mailto:ben.swarts@cmich.edu).
- March 26 – **Deadline for Midland Section ACS Spring Awards nominations** to honor outstanding educators, volunteers, and colleagues. For more information, contact Diana Deese, Midland Section ACS Awards Committee Chair, at [dkdeese@dow.com](mailto:dkdeese@dow.com) or 989-636-9915.
- April 5 (7:00 – 8:00 PM) – Midland Section ACS Board meeting, MCFTA Board Room (anticipated location, in person), or via a WebEx conference call connection at [Cisco Webex Meeting - April 2021](#), phone number: 989-633-1166.
- April 5-16, 2021 (**Save the Date**) – Spring 2021 National ACS Meeting & Exposition (**Virtual only event**). Meeting theme – *Macromolecular Chemistry: The Second Century*. For more information, please see <https://www.acs.org/content/acs/en/meetings/acs-meetings.html>.
- April 7 (7:00 – 8:30 PM) – MSU St. Andrews Family Astronomy Night. Free virtual event via Zoom. Watch for more event details and Zoom information coming soon. For more information, please visit <https://standrews.msu.edu/family-astronomy-night/>.
- April 12 (4:00 – 5:00 PM) – CMU Spring 2021 Virtual Seminar Series, featuring Prof. Marcos Pires from the University of Virginia. All are welcome and encouraged to join in this virtual WebEx seminar. Just click on the following link: <http://cmich.webex.com/meet/swart1bm>. For any questions, please contact Ben Swarts at [ben.swarts@cmich.edu](mailto:ben.swarts@cmich.edu).
- April 26 (4:00 – 5:00 PM) – CMU Spring 2021 Virtual Seminar Series, featuring Prof. Alison Narayan from the University of Michigan. All are welcome and encouraged to join in this virtual WebEx seminar. Just click on the following link: <http://cmich.webex.com/meet/swart1bm>. For any questions, please contact Ben Swarts at [ben.swarts@cmich.edu](mailto:ben.swarts@cmich.edu).
- May 1 (11:00 AM – 3:00 PM) – Special Outdoor Earth Day Expo event, Dow High School parking lot, Midland. Admission is FREE. Masks will be required, and all public health guidelines will be enforced. Additional details will be forthcoming. For more information or any questions, please contact Gina Malczewski at [reginamalczewski@gmail.com](mailto:reginamalczewski@gmail.com).
- May 3 (7:00 – 8:00 PM) – Midland Section ACS Board meeting, MCFTA Board Room (anticipated location, in person), or via a WebEx conference call connection at [Cisco Webex Meeting - May 2021](#), phone number: 989-633-1166.
- May 6 (**Please note: Suspended in-person event**) – Midland Section ACS Spring Awards Recognition. The 30th annual Spring Awards in-person banquet event has been suspended due to the ongoing COVID pandemic and the associated restrictions for large, indoor gatherings. However, we will still be recognizing outstanding educators, volunteers, and colleagues that you have graciously taken the time to nominate. In lieu of the usual banquet event, an article featuring the 2021 awardees will be published in the June or July issue of *The Midland Chemist*. For more information or any questions, please contact Diana Deese, Midland Section ACS Awards Committee Chair, at [dkdeese@dow.com](mailto:dkdeese@dow.com) or 989-636-9915.
- June 6-9, 2021 (**Save the Date**) – 2021 ACS Virtual Great Lakes Regional Meeting (GLRM), hosted by the Minnesota local section. For more information, please see <https://www.glrm2021.org/>. **Please note:** The Great Lakes Region of the ACS formally welcomes the Central Region of the ACS to this virtual



conference. The 2021 Great Lakes Regional Meeting will also serve as the 2021 Central Regional Meeting due to complications caused by the COVID pandemic and the cancellation of the 2020 Central Regional Meeting a year ago.

- June 7 (7:00 – 8:00 PM) – Midland Section ACS Board meeting, MCFTA Board Room (anticipated location, in person), or via a WebEx conference call connection at [Cisco Webex Meeting - June 2021](#), phone number: 989-633-1166.
- August 2 (7:00 – 8:00 PM) – Midland Section ACS Board meeting, MCFTA Board Room (anticipated location, in person), or via a WebEx conference call connection at [Cisco Webex Meeting - August 2021](#), phone number: 989-633-1166.
- August 22-26, 2021 (**Save the Date**) – Fall 2021 National ACS Meeting & Exposition (**Atlanta, GA and Online**). Meeting theme – *Resilience of Chemistry*. For more information, please see <https://www.acs.org/content/acs/en/meetings/national-meeting/about/future-meetings.html>.
- September 7 (7:00 – 8:00 PM) – Midland Section ACS Board meeting, MCFTA Board Room (anticipated location, in person), or via a WebEx conference call connection at [Cisco Webex Meeting - September 2021](#), phone number: 989-633-1166. **Please note: This Board meeting is being held on Tuesday evening, not the usual Monday evening.**
- October 4 (7:00 – 8:00 PM) – Midland Section ACS Board meeting, MCFTA Board Room (anticipated location, in person), or via a WebEx conference call connection at [Cisco Webex Meeting - October 2021](#), phone number: 989-633-1166.
- November 1 (7:00 – 8:00 PM) – Midland Section ACS Board meeting, MCFTA Board Room (anticipated location, in person), or via a WebEx conference call connection at [Cisco Webex Meeting - November 2021](#), phone number: 989-633-1166.
- December 6 (7:00 – 8:00 PM) – Midland Section ACS Board meeting, MCFTA Board Room (anticipated location, in person), or via a WebEx conference call connection at [Cisco Webex Meeting - December 2021](#), phone number: 989-633-1166.

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