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The Minnesota Chemist

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Greetings from the Chair

The Christmas Holidays are over and for many this is a relief. Hopefully, 2020 will bring continued prosperity.

This is the first MN ACS newsletter of 2020 and as the new chair, my first newsletter. In addition to Chair, our section elected Michael Wentzel, Chair Elect, Amanda Case, Secretary, and Marites Guino-o, Small School Nominations Committee member, in November to fill open positions. We currently have 26 members serving on our executive committee. To learn more about your section, go to our website at <https://www.mnlocalsectionacs.org> and browse the many dropdown options on the menu bar. Each officer, councilor, and committee chair is listed under Officers. We are always seeking new volunteers to help, so contact myself or one of the executive committee members for more information.

I have highlighted below some of the exciting events and programs planned for the coming year. We hope you will take advantage of them. A summary of the monthly meetings planned for the first half of 2020 follows:

January 22nd: Machine Learning in Quantum Chemistry - Jason Goodpaster, UMN Chemistry Dept.

Date: Wednesday, January 22nd
Time: 06:00 pm - Dinner
07:00 pm - Speaker

Upcoming Events



- Location:** UMN Smith Hall, Room 117/119 for dinner and Room 231 for the speaker
[207 Pleasant St SE, Minneapolis, 55455](#)
- RSVP Deadline:** Please sign up by Monday, January 20th
- Cost:** \$15 \$5 (students)
- Menu:** Buffet dinner provided by Holy Land Catering
- Speaker:** **Jason Goodpaster, Assistant Professor of Chemistry and Chemical Physics, University of Minnesota Twin Cities**
- Parking:** For those driving to the meeting, we suggest parking in the Weisman Art Museum parking ramp. Smith Hall is only a short walk from the museum and the cost for parking is only \$3 per hour. A link to an interactive campus map is campusmaps.umn.edu.
- Registration** <https://www.mnlocalsectionacs.org>.

Abstract: Machine Learning and data science is poised to revolutionize chemical research. As the field of machine learning has expanded, a variety of methodologies have become commonplace, such as kernel ridge regression, Gaussian process regression, and neural networks. In this talk, I will outline the basics of machine learning, the basics of these methodologies, and when these methodologies can and should be applied. Additionally, I will discuss the work my research group has been doing in applying these methodologies to quantum chemistry.

Bio: Jason Goodpaster is an assistant professor of chemistry and chemical physics at the University of Minnesota Twin Cities. His research focuses on the development of new quantum chemistry methods and applying these methods to a wide variety of chemical systems including: metal organic frameworks, inorganic catalysis, surface enhanced raman spectroscopy, and electrochemistry. Prof. Goodpaster obtained his PhD at Caltech and performed his postdoctoral work at Lawrence Berkeley National Lab

Upcoming Events



February 17th: Green Chemistry and Sustainability - Mary Kirchoff, Director of ACS Green Chemistry Institute

- Date:** Monday, February 17th
Time: 06:00 pm - Dinner
07:00 pm - Speaker
- Location:** Augsburg University, [2211 Riverside Ave, Minneapolis, MN 55454, USA](#)
- RSVP Deadline:** TBD
- Menu:** TBD
- Speaker:** **Mary Kirchoff, Director of the ACS Green Chemistry institute**
- Registration** <https://www.mnlocalsectionacs.org> (not yet available)

Abstract: The mission of the American Chemical Society Green Chemistry Institute® (GCI) is "to catalyze and enable the implementation of green and sustainable chemistry and engineering throughout the global chemistry enterprise." GCI achieves its mission through an annual conference, industry roundtables, education initiatives, and a variety of communication efforts.

A recent focus of GCI is the U.N. Sustainable Development Goals (SDGs), and chemistry will be essential in addressing most of the SDGs. This presentation will highlight current research and education initiatives in chemistry targeting achievement of the SDGs, as well as the work of GCI in advancing green and sustainable chemistry.

Bio. Mary Kirchoff is the Executive Vice President of the American Chemical Society (ACS) Scientific Advancement Division and the Director of the ACS Green Chemistry Institute®. She received her Ph.D. in organic chemistry from the University of New Hampshire and joined the Chemistry Department at Trinity College in Washington, DC, in

1992. She began working in green chemistry as an AAAS Environmental Fellow and Visiting Scientist with the U.S. EPA's green chemistry program. Mary joined the ACS in 2001, serving as Director of the Education Division for 11 years. Mary is an AAAS Fellow and currently serves on the National Academies' Chemical Sciences Roundtable.

Upcoming Events



March

In early March, our section participates with 7 other metro area professional societies in the Minnesota Technical Symposium (MinnTS). MinnTS was started for the purpose of providing a venue for local technical professionals to get together for networking, dinner, and technical presentations given by local experts. The MinnTS steering committee is currently working out the details of the symposium, but it will be held at Ecolab's Schuman Campus in Eagan again this year. As information becomes available, it will be added to our website. Stay tuned.

Upcoming Events



April, May, June.

An April monthly meeting has been tentatively planned on the subject of Startups. In May, we hold our annual Awards dinner and in June we celebrate the start of summer with a social gathering.



Senior Chemists Group

The Senior Chemists Group had several interesting and enjoyable meetings in 2019. The primary purpose of the group is to provide older "senior" chemists with a day time event that interests them: We have a large social component, some informal talks about chemistry and related sciences, and we always offer our members ideas on volunteer opportunities. The Senior Chemists group is open to both chemists and chemical engineers. And, you don't have to be retired to join. If you are currently employed and can take off an hour or two off over lunch hour once a month, please ask to join.

The next meeting will be on **Wednesday, February 19**, at the **Green Mill Restaurant in St Paul**. Plans for a speaker are not yet finalized. Details will follow later.

Other plans for 2020 include a possible visit to the new Bell Museum, more informal talks, and a possible visit to college/university research labs. If you would like to join, have suggestions for meeting locations, or would like to give an informal 20-minute talk, please email Lynn at lghartshorn@stthomas.edu.



MN ACS Project SEED Program

Since 1968, ACS Project SEED has helped more than 11,000 economically disadvantaged high school students, many of whom were the first in their family to attend college. For 8 to 10 weeks during the summer, SEED students work in real laboratories, with real scientists serving as their mentors.

Students from Washington Tech Magnet, Como Park, and Harding High Schools participated in the MN ACS section SEED program during 2019.

Each student was matched with a UMN faculty member to work on a chemistry-related research problem over the 8 week period. The chemistry department provided three additional faculty to serve as mentors in 2019.

Plans are to accept 6-8 new students into the program for 2020. Funding has been provided by the MN ACS section, ACS Project Seed, and 3M. For further information, contact Sara

Mullins, MN ACS SEED project coordinator, at smullins44@gmail.com.



**Volunteer
Opportunities**

Science Outreach: Chemists in the Library

The Chemists-in-the-Library program of the MN ACS section is one of the most active library outreach programs of the ACS in the nation. It has been visiting a community library in the Twin Cities area once a month since 2004. At any event, anywhere from 20 to 100 children perform hands-on experiments, individually guided by volunteers. This year, we will celebrate the 200th event, and further library visits are already scheduled until December 2021.

The program could not happen without the continued support of its many volunteers, who are chemists in all possible stages of their careers, from retirees, industry chemists, and faculty members (from local community colleges, four year institutions and the University of Minnesota) to graduate, undergraduate and even high school students. For further information for event participants and new volunteers, please contact Phil Buhlmann at buhlmann@umn.edu.



**Volunteer
Opportunities**

Competitions Within The MN ACS section

State Science Bowls (Minnesota Academy of Science/US Dept. of Energy)

Senior High School Competition at Macalester College --- January 25

Middle School Competition at University of St. Thomas--- February 8

Regional Science Fairs

Central Regional Fair at St. Cloud State University---TBA

Rochester Regional Fair at Rochester Community and Technical College ---February 28

Southern Regional Fair at Minnesota State University—Mankato ---February 29

Twin Cities Regional Fair at Coliseum within State Fair Grounds --St. Paul---February 28

Minnesota State Science Fair (Minnesota Academy of Science)

Benilde-St. Margaret's School in St. Louis Park---March 27

Winchell Undergraduate Research Symposium /Annual Meeting of Minnesota Academy of Science

Crown College in St. Bonifacius, MN ---April 25

For further information on science bowls, science fairs, and the Winchell Symposium, contact Wayne Wolsey at wolsey@macalester.edu.



**Volunteer
Opportunities**

Great Lakes Regional Meeting - June 2021

June 6th - 9th 2021 at Augsburg University, Minneapolis MN

We are currently looking for volunteers to do the following:

1. **Undergraduate program coordinator** – Will coordinate undergraduate events and poster sessions for the meeting.
2. **Program chair** – This volunteer will help put together the program and them. This person will also assist in recruiting session chairs and making sure all sub-disciplines of chemistry are represented. This volunteer would serve on the executive planning board for the meeting.
3. **Session chairs** – Members that are interested in a certain topic can volunteer to run a session. These volunteers will then solicit people to register for the meeting and contribute papers on the session topic.
4. **Logo design** – This artistic member would design a logo for the meeting to help advertise. The logo would reflect the Minnesota section.

Please contact James Wollack if you are interested in any of these volunteer opportunities (jwollack@stkate.edu).



MN ACS Supported Grants

National Meeting Travel Grants

Travel grants to graduate students and faculty who are studying or working in the areas served by our section are available for both the Spring and Fall National Meetings. Two travel grants of \$500 each are available for graduate students and one travel grant of \$500 is available to a faculty member at a liberal arts or community college for the spring ACS meeting in Philadelphia March 22-26. Application materials are available at <http://nmr.chem.umn.edu/GradTravelGrantApp.doc> and at <http://nmr.chem.umn.edu/PUICCtravelgrant.doc>

Note that you must already be registered for the national meeting to apply. Applications must be submitted by Feb 28th for the spring meeting. FFI contact Letitia Yao, Grad and PUI Faculty Travel Grants, at yaoux006@umn.edu

Undergraduate Travel Supplement Awards are also available through MN ACS. This year, the Chemistry Department Chairs at Hamline University, Macalester College, St Catherine University, and Minnesota State University-Mankato will each receive \$500 to support travel expenses to a National ACS meeting for one student making a presentation at the meeting. FFI contact W.Wolsey at wolsey@macalester.edu

Outreach Grant Availability

The MN section has grant money available to support appropriate outreach programs and initiatives. However, the amount and number of grants is limited. We strongly encourage applications outside the TC metro area. If you wish to be considered for a grant, submit a brief summary or description of your proposal for our consideration. Contact Bruce Bear at brucebear@msn.com for more information.



Professional Development: LC-MS Fundamentals Course - January 28th-30th

The Minnesota Chromatography Forum is offering a short course covering LC-MS Fundamentals January 28th-30th 2020. This comprehensive three-day course will cover all aspects of Liquid Chromatography-Mass Spectrometry (LC-MS) with a focus on application and troubleshooting and will be taught by certified LC-MS instructors. The course will include both small and large molecule analysis and a full day of Hands-On LC-MS training.

The cost is \$700. Register at minnchrom.3dcartstores.com. For more information, please contact Christian Toonstra, Board Chair of Education for the Minnesota Chromatography Forum at toonstrac@gmail.com.

Professional Development: ACS-Hach Professional Development Grant

High School Chemistry Teachers can receive up to \$1500 with an ACS-Hach Professional Development Grant. This grant supports high school chemistry teachers as they identify and pursue opportunities that advance their professional development and enhance the teaching and learning of chemistry. Applications are currently being accepted through January 4, 2020. For further info go to hach@acs.org.



Employment Opportunities/Internships: Green Chemistry & Engineering Grant

The Minnesota Pollution Control Agency (MPCA) is offering a \$10,000 grant to support a Minnesota facility or organization in hosting a Green Chemistry & Engineering Intern in

summer 2020. Eligible projects advance the process or practice of green chemistry and engineering within the host organization. The intern's time (10-12 weeks, starting approximately May 1st) can go to improving products, or to developing tools which support wider use or sales of products with green and safer chemistries

Intern candidates can be local or come from across the U.S., with at least an undergraduate degree in a STEM field. Application materials are available at <https://www.pca.state.mn.us/waste/green-and-safer-product-chemistry-grants>. The deadline for applications is February 6th.



Fellowships: ACS Green Chemistry Institute

The ACS Green Chemistry Institute is now taking applications for a new fellowship! The Heh-Won Chang PhD Fellowship in Green Chemistry is awarded to full-time graduate students around the world who are currently conducting research in green chemistry. Applicants must have at least one full year of study remaining in their graduate program. Contact the Green Chemistry Institute for further info gci@acs.org.



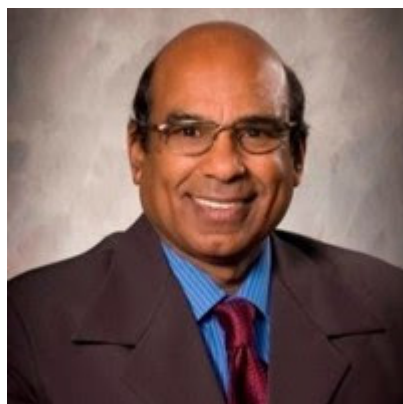
Annual MN-ACS Elections: Results

Thank you to everyone who participated in the annual elections, and congratulations to all the newly elected members. Their names and positions are shown below:

Secretary: Amanda Case



Nominations Committee: Ramesh Kumar (Industry representative)



Nominations Committee (U of MN representative): Will Pomerantz



Nominations Committee (Small college representative): Marites (Tess) A. Guino-o



Councilors: Lynn Hartshorn and James Wollack

Lynn Hartshorn



James Wollack



Chair-elect: Michael Wentzel



If you have content for The Minnesota Chemist, please send it to Taysir Bader, Editor (bader072@umn.edu)

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