



The Minnesota Chemist

Official Publication of the Minnesota Section of the American Chemical Society

Issue 3, May - June 2015



Greetings from the Chair

Dear Minnesota Chemists,

Spring is in full force along with section activities like science fair judging, chemists in the library events, and local section meetings. This past March I attended the national ACS meeting in Denver and was taken aback by our section's representation. We had numerous national committee members, division leaders, and more technical presentations than you can shake stick at. Highlights included Dr. Thomas Hoye being awarded the Guenther Award for natural products chemistry and no fewer than forty undergraduates from local section colleges and universities presenting research posters. Minnesota truly represented in Denver and I look forward to the fall meeting in Boston where University of Minnesota graduate students have organized a symposium section filled with high profile speakers such as Nobel Laureate Bob Grubbs, chemical biology juggernaut Carolyn Bertozzi, and renowned polymer chemist Paula Hammond. The section has provided a small grant to support this symposium and I encourage section members to attend next fall.

Another recent section achievement included a funded innovative project grant (IPG) entitled The Magic of Chemistry and Mommy Chemists. This IPG was developed and spearheaded by Arianna Kooyman (YCC chair) and Trish Miller (section secretary). The national review committee commended Arianna and Trish's proposal for its "novel approach to getting women chemists to bond with their young children through chemistry activities—altogether in a safe, friendly environment". Look for more information on this program in future editions of the Minnesota Chemist. Also four section chemists have been nominated for ACS fellow designation. ACS fellow designation is based on documented excellence and leadership in the chemical profession/education/management AND volunteer service to the ACS community. Less than 1% of ACS membership has been awarded this prestigious designation. Currently our section has over a dozen ACS fellows. Keep your fingers crossed that we can add to this number in 2015.

I would like to comment on section meetings. A remarkable number of people signed up to attend the May 5th meeting at Bent Brewstillery. The topic and ability to have a tasty beverage no doubt lead to such a good attendance. Look for more meeting locations in the fall with a happy hour component in addition to a technical talk. At the end of May, will be the section's annual awards ceremony. This year's major award winner is Gary Miessler for his excellence in

undergraduate teaching. The event will be held at St. Olaf College in Northfield MN and will also include recognition of the section's 50 and 60 year ACS members, Chemistry Olympians, and volunteer service award winners. Be on the lookout for a call for nominations for next year's major award for excellence in teaching at the high school level.

Finally I would like to invite everyone to the annual summer social. Since the section already had an event at a brewery in May they decided to make this event more family friendly and hold it at the Minnesota Landscape Arboretum. This event will be on June 23rd and a barbeque and arboretum admission is included in the participation cost. Children can attend at a discounted rate. Go to www.mnacs.org to register.

It is good to be a chemist in Minnesota!

Dr. James Wollack
Assistant Professor of Chemistry
St. Catherine University
MN ACS Chair



May 5 – Bent Brewstillery

Zymurgy: The Art and Science of Brewing Beer

Dr. Tracy Hamilton, Professor of Chemistry, University of Alabama-Birmingham

The presentation will start with a brief history of brewing, followed by how to brew beer step by step, with pictures. The chemical processes at each step are discussed for the chemists in the audience, making connections to various undergraduate topics such as kinetics, organic chemistry and biochemistry. The talk will be topped off by a list of important flavor compounds (both desirable and undesirable) in beer. The mixture of humor and practical knowledge makes this talk suitable for a general audience. The topic of beer is very popular, and venues where good beer is served enhances attendance significantly.

Speaker Biography

Tracy P. Hamilton obtained a Ph.D. (advisor: Peter Pulay) from the University of Arkansas in 1987, and did four years of postdoctoral research (advisor: Fritz Schaefer) at the University of Georgia. Dr. Hamilton has been a professor at the University of Alabama at Birmingham since 1991. In graduate school, he had to make a difficult choice between theoretical and experimental chemistry, and chose theoretical. As a result, the urge to synthesize irresistibly manifested itself in 1996, when he started brewing beer at home. Dr. Hamilton has been very active in the Birmingham

Brewmasters (<http://hbd.org/bbm>), a group dedicated to the appreciation of different beer styles and how to brew them. He is also a certified beer judge in the Beer Judge Certification Program.

Schedule:

- 6 – 7 pm – Pizza dinner, tours
- 7 – 8 pm – Presentation by Tracy Hamilton
- 8 – 9 pm – Networking, tours

Menu for Dinner:

Pizza, dessert, soda, water. Beer for purchase.

Cost:

\$10 for dinner (\$5 for students).

\$20 Dinner + tour (\$15 for students).

Tour includes a flight of beers (four small glasses of different beer types)

Location:

Bent Brewstillery, 1744 Terrace Drive, Roseville, MN 55113

Registration:

RSVP by Friday, May 1 on the MN ACS website:

<http://www.mnacs.org/2015schedule/5may2015.html>



May 26 – St. Olaf College

Awards Banquet

Dr. Gary Miessler, Professor, St. Olaf College

Please join the MN-section as it honors the 2015 Brasted Award winner for excellence in undergraduate teaching, Dr. Gary Miessler, along with 50 and 60 year section members, Chemistry Olympians, the Janet Tarino Awardee, the Lyle Hall Awardee, and others.

Schedule:

6 pm – Dinner

7 pm – Awards address

Menu for Dinner:

Cobb salad, crispy buttermilk chicken with honey mustard, grilled pork tenderloin with cranberry mango salsa, crispy tofu with balsamic onion jam, mashed potatoes, maple roasted carrots, white chocolate strawberry mousse cake, coffee, water, lemonade.

Cost:

\$20 for dinner.

Location:

St. Olaf College, Buntrock Commons, 1500 St. Olaf Ave. Northfield, MN 55057

Registration:

RSVP by May 20 on the MN ACS website:

<http://www.mnacs.org/2015schedule/26may2015awards.html>

June 23 – University of Minnesota Landscape Arboretum

June Summer Social



Come and network and enjoy the company of chemists and their families. Admission to Arboretum is included in the cost. You may arrive earlier to enjoy the Arboretum grounds.

Schedule:

6 pm - Dinner
Gates close at 8 pm

Menu for Dinner:

Hamburgers, beef hot dogs and brats or grilled chicken, or vegetarian entree, house-made cole slaw, potato salad, baked beans, fresh baked rolls and buns, lettuce, tomato, onions, pickles, kettle chips, assorted brownies and bars, iced tea, lemonade, iced water

Cost:

\$10, children \$7

Location:

Picnic Shelter B, University of Minnesota Landscape Arboretum, 3675 Arboretum Drive, Chaska, MN 55318

Registration:

RSVP by June 15 on the MN ACS website:

<http://www.mnacs.org/2015schedule/23june2015social.html>

Councilors' Report - Denver ACS Meeting - March 25

Wayne C. Wolsey, MN Section Councilor



The Minnesota ACS Section was represented by four of its five Councilors at the Council meeting during the Denver ACS Meeting: Lynn Hartshorn, Sarah Mullins, Danae Quirk Dorr, and Wayne Wolsey.

A Council responsibility every spring is to narrow the set of nominees for President-Elect from the Committee on Nominations and Elections. We heard presentations from G. Bryan Balazs (Lawrence Livermore National Lab), Allison A. Campbell (Pacific Northwest National Lab), David J. Lohse (Retired, ExxonMobile) and Christopher J. Welch (Merck). The two candidates which will appear on the fall ballot are Dr. Balazs and Dr. Campbell.

Prior to the meeting, Councilors for District V (includes MN Section) had chosen John E. Adams (Univ. of Missouri-Columbia, incumbent) and Kenneth P. Fivizzani (retired, Nalco) to be on the fall ballot as candidates for Division V Director. Councilors will vote in the fall for two Directors-at-Large from among Willem R. Leenstra, Ingrid Montes, Mary Jo Ondrechen, and Thomas W. Smith.

National Member dues for 2014 were \$158. The By-Laws specify that the dues increase via an inflation index escalator, which would set the 2015 dues at \$162. The Council voted to ratify the 2015 dues. Council also voted to continue the Committees on Ethics and on Science.

Following a discussion on the revenue supporting National Meetings, the Council requested that the Board delay the implementation of a technical meeting additional \$15 fee (for technology) for meeting registration fees, until an analysis of the projected "break-even" fees—

including and excluding the net revenue from the National Meeting Exposition, is done by the Board.

The Council voted to approve petitions to charter new International Chemical Sciences Chapters for India and Taiwan.

The Society Committee on Education (SOCED), of which Danae Quirk Dorr is a member, reported that more than 1,900 persons had joined the American Association of Chemistry Teachers (AACT) which was launched last year.

New divisors will be used by the Council Policy Committee to set the number of Councilors for Local Sections and Divisions for 2016-2019.

The Committee on Meetings and Expositions announced that attendance at the meeting was 13,940, with 5,142 students, 7,307 attendees, and 847 exhibitors. The ACS Career Fair had 715 seekers, 27 employers, 85 positions, and 38 booths.

The Theme of the Meeting, Chemistry of Natural Resources, was most appropriate for the setting, and included several relevant talks on water, mineral resources, and energy. Noteworthy also was Professor Thomas Hoyer (also the MN Section 2014 recipient of the Minnesota Award) receiving the Ernest Guenther Award in the Chemistry of Natural Products.

Senior Group Special Lunch May 13th at 11:30 am

Lynn Hartshorn

The recently formed Senior Chemists Group of the Minnesota ACS will meet for their third lunch (and the last before the fall) on Wednesday May 13th at 11:30 am at the Green Mill Restaurant at the corner of Hamline and Grand Avenue in St Paul. We will meet in the private room, and order from the menu.

Several of you requested that we have occasional short talks about science. One of our own members, Stan Kaufman, has volunteered to give an informal 20 minute talk entitled "Small Particles and Large Molecules". Thanks, Stan! He will supply hand-outs.

All are welcome, including new members. Lynn needs to know how many to expect, so please email lghartshorn@stthomas.edu by May 11th if you plan to attend. Guests are also welcome. Parking is available in a lot about fifty yards west of the restaurant on the north side of Grand Avenue, or on the street. I look forward to seeing you!



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MN ACS Young Chemists

Arianna Kooyman

Come join the ACS Young Chemists for a Happy Hour Social at Station 280 in St. Paul on Thursday, May 28th from 5:30-8:00pm. Feel free to invite other ACS members or bring along chemists (21-35) who are interested in joining or simply want to network with other chemists. Free parking and 2-4-1's all day, plus 1/2 price apps. The ACS will even pick up part of the tab! If you have questions or concerns please contact Arianna Kooyman through email at amkooyman@gmail.com. Hope to see you May 28th at Station 280!



2015 Minnesota Regional and State Science Fair Awards

Wayne C. Wolsey, MN ACS Section Coordinator of Science Fair Judging

The MN ACS Section has for many years given Special Awards in Chemistry/Biochemistry at the Minnesota State Science Fair, sponsored by the Minnesota Academy of Science. The event was held at the Double Tree hotel in Bloomington, on March 21, 2015.

Middle School Awards

Top Prize (\$50)

Maxwell J. Vogel – “*Got Gas: Does Ethanol Live up to its Reputation as a Clean Burning Efficient Fuel Additive?*” Oakland Junior High, 7th Grade, Bayport

Honorable Mentions (subscription to *ChemMatters*)

Emmarah Qureshi – “*Effect of Temperature on Enzymes and Rate of Chemical Reaction*” Al-Amal School (Fridley) 8th grade, Blaine

Abigail Roh – “*Saving the World One Bioplastic at a Time*” Breck School (Golden Valley) 7th grade, Minneapolis

Emma Wells – “*Quack, Quack, What’s in My Water, What Effect Does the Level of Aspirin (Salicylic Acid) Have on the Growth of Lemma Minor (Duckweed)?*” Cloquet Middle School, 8th grade

Senior High Awards

Top Prize (\$100)

Carolyn Jons – “*Improving Efficiency of Seawater Steam Generation Using Carbon Nanoparticles—Year 2*” Eden Prairie High School, 12th grade

Honorable Mentions (subscription to *ChemMatters*)

Sofie Kim (12th grade) and Jacob Levy (12th grade) – “*Optimized Synthesis of Novel, Medicinally Applicable 1,2,3-triazole Derivatives*” Breck School, Golden Valley

Janani Virinchipuram Narayan – “*Nanogene Constructs for Nonviral Gene Delivery*” East Ridge High School (Woodbury), 12th grade, Cottage Grove

Max Ylitalo – “*Landfill to Car Fuel: Using Surfactants to Increase Cellulosic Ethanol Production from Waste Paper*” Stillwater Area High School, 11th grade, Stillwater

2015 Regional Science Fair Awards

Wayne C. Wolsey, MN ACS Section Coordinator of Science Fair Judging

The MN ACS Section gives a \$50 Special Award to the top Chemistry/Biochemistry project at each of the four Regional Science Fairs located within the area of the Minnesota Section—Mankato Area, Rochester Area, St. Cloud Area, and Twin Cities Area.

Mankato Area: Ester Archer – “Carbon Sequestration in a Freshwater Photobioreactor: Year Two of a Continued Investigation” Loyola Catholic High School (Mankato), 11th grade

Rochester Area: Harmanpreet Kaur – “pH Levels: Pay Attention” Century High School (Rochester), 9th grade

St. Cloud Area: Marissa Nekola – “*Effect of Borax on Flammability*” Blaine High School 9th grade Ham Lake

Twin Cities Area: Carolyn Jons (see Twin Cities Regional Science Fair Award)

Thanks to Danae Quirk Dorr (Mankato); Michael Jeannot St. Cloud); Lynn Hartshorn, Leif Irgens, James Wollack, and Wayne Wolsey (Twin Cities) for judging (or overseeing the judging) at the Regional Science Fairs, along with Diane Amell, Arianna Kooyman, Todd Williams, and Wayne Wolsey for judging at the State Science Fair.

2015 Winchell Undergraduate Research Symposium Award Winners

Arianna Kooyman

The 82nd Annual Meeting & 28th Winchell Undergraduate Research Symposium was held on April 25, 2015 at the University of Northwestern in St. Paul. The MN ACS Section gives a \$25 award to the top projects/presentations.

Andrea Cragoe and Mitchell Maddox (advisor), Bethel University, St. Paul, MN. *Synthesis and Characterization of Modified Nucleosides*

Sarah N. Elliot and Rollin A. King (advisor), Bethel University, St. Paul, MN. *Atomistic Interpretations of Optical Activity*

Matthew Henley and George Barany (advisor), University of Minnesota-Twin Cities, Minneapolis, MN. *Mechanistic Insights into the Zumach-Weiss-Kuhle Synthesis of Dithiasuccinoyl (Dts)-Protected Amines*

Joe Jaye and Eric H. Fort (advisor), University of St. Thomas, St. Paul, MN. *A Combined Computational and Experimental Study of the Final Ring Closure of BN-Pyrene*



Augsburg College – Adjunct faculty

Augsburg College Chemistry Department has openings for Adjunct faculty in the areas of organic chemistry (lecture and lab) and general chemistry (lecture and lab) for the 2015 - 2016 academic year. If interested, please send the following materials:

- A cover letter introducing yourself and why you would be a good fit for this position; please highlight specific teaching experiences
- A current CV
- The name, relationship, duration of time known, and phone number of two references who can speak to your teaching ability/potential

Please direct questions and send materials (electronically) to Prof. Joan Kunz at kunz@augsborg.edu, or Prof. Michael Wentzel at wentzel@augsborg.edu

University of Wisconsin-River Falls – Instructional Academic Staff – Full-time or Part-time

The Chemistry Department at the University of Wisconsin-River Falls seeks applicants for full-time and part-time Instructional Academic Staff appointments for the 2015-16 academic year to contribute to the teaching of introductory chemistry lecture and laboratory courses, or other courses depending on experience and expertise. The department has 11 full-time chemistry faculty and offers American Chemical Society certified programs in Chemistry and Biochemistry along with programs in Chemistry Education and Biotechnology. Additional information about the department can be found at <http://www.uwrf.edu/CHEM/>.

UWRF uses an online application system for Instructional Academic Staff (ad hoc) positions. Please encourage qualified individuals to submit applications by going to <https://jobs.uwrf.edu>. Applicants will create an account and all application materials must be submitted electronically through the online application system. We recommend that you use Firefox as your web browser for this application.

Qualifications Preferred

- Ph.D. in Chemistry or a related field at the start of the appointment. Ph.D candidates will be considered for part-time appointments
- Experience teaching undergraduate students

Inquiries should be addressed to:

Karl P. Peterson, Professor and Chair
Department of Chemistry
715-425-3523
karl.peterson@uwrf.edu

Review of applications will begin immediately and will continue until the position is filled. Materials not submitted electronically cannot be considered.

Hamline University - Adjunct Assistant Professors

The Department of Chemistry at Hamline University has openings for Adjunct Assistant Professors in the areas of Organic Chemistry (laboratory) and General Chemistry (lecture and laboratory) for the 2015-2016 academic year.

If you are interested, please provide the following materials:

- A cover letter introducing yourself and why you would be a good fit for this position; please highlight specific teaching experiences
- A current CV
- The name, relationship, duration of time known, and phone number of two references who can speak to your teaching ability/potential

Please direct questions and send materials (electronically) to:

Rita Majerle
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If you have content for the Minnesota Chemist, please send it to Becky Guza, Editor (becky.guza@hbfuller.com)

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