



The Minnesota Chemist

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Issue 6, November - December 2015



Greetings from the Chair

Greetings MN ACS members,

The year has gone by quite fast. I would like to use my letter this month to highlight some changes the section partook in the last year regarding the newsletter, website, and bylaws. Last year we converted to an electronic edition of the MN-chemist. This has cut printing and mailing costs dramatically and has allowed us to charge less for monthly section events. Electronic conversion also allowed the section to move the publication of the newsletter to bimonthly editions. This allows for better communication on upcoming events in the section and has led to solid attendance numbers. In August we began conversion of the website to its new address at <http://mnacs.sites.acs.org/>. This new site was sanctioned through the national office and was offered to the section free of charge. Over the last month it has begun to be completely populated with section information, events, an updated calendar, and newsletters. The conversion was not without some problems or confusion but hopefully these growing pains have now passed. Please send any updates either to me (jwollack@stkate.edu) or the interim webmaster Becky Guza (becky.guza@hbfuller.com). Finally our section has discussed converting to electronic voting for many years. In order to make this conversion we will be required to update our bylaws. The executive committee is in the process of making this conversion in conjunction with a template from the national office. We will likely have revisions completed by this spring and bring them up for a vote at a monthly meeting. This vote will either be announced in the MN-Chemist or by an email. This conversion will save us on postage costs, increase voter turnout, and provide bylaws that better reflect and support the current business going about in the section. This update was drastically needed as the bylaws on file have not been updated since the 1980's with the national office. With these changes behind us the section will be able to better serve its members and promote chemistry in the community. Thank you to all who have worked on these important changes in the past year.

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



November 5th Meeting

Metabolism and DNA Interactions of Carcinogenic Tobacco-Specific Nitrosamines Dr. Stephen Hecht, University of Minnesota, ACS Fellow

Tobacco products are responsible for approximately 30% of all cancer death in the U.S., and 90% of lung cancer mortality. The carcinogenic tobacco-specific nitrosamines *N*-nitrosonornicotine (NNN) and 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) are present in all tobacco products and are considered to be important causative factors for tobacco-induced cancer. Metabolism of NNN and NNK in laboratory animals and humans leads to the formation of highly electrophilic diazohydroxide intermediates that react with cellular DNA to form a complex array of products which initiate the carcinogenic process. The metabolites and DNA adducts have been characterized by their spectral properties and by independent synthesis. The metabolism and DNA adduct formation of NNN and NNK are discussed in this presentation.

Information on speaker: http://www.pharmacy.umn.edu/faculty/hecht_stephen/

Schedule:

5 – 6 pm – Executive meeting

6 – 7 pm – Dinner

7 – 8 pm – Presentation by Dr. Stephen Hecht

Menu for Dinner:

Noodles and Company, salad, bread, dessert, pop, water

Cost:

\$13 in advance, \$18 at the door, \$5 for students

Location:

Cancer and Cardiovascular Research Building (opened 2014)

Biomedical Discovery District, 2231 6th St SE, Minneapolis, MN 55455

RSVP by Monday, November 2nd on the **NEW** MN ACS website:

<http://mnacs.sites.acs.org/>

At the site you can register under the Web Store tab, choose Meal Ticket - 5 November 2015.



November 10th – 4th Annual Chemistry Job Fair

The Chemistry Job Fair will be held from 4 - 6 pm on **Tuesday, November 10, 2015** at **Saint Catherine University** in Saint Paul, MN in the 3rd floor Atrium of the Coeur de Catherine building.

The following companies will attend the job fair: Aerotek, Aveda, Biothera, Experis, H.B. Fuller, Kelly Scientific Resources, Medtronic, Medtox Laboratories, On Assignment, Pace Analytical, Land O'Lakes, Verum Scientific, WuXi AppTec, University of MN

Department of Chemistry, University of MN Department of Medicinal Chemistry, Environmental Health Sciences U of MN, and others pending.

4:00 - 6:00 pm - Meet with recruiters

6:00 - 6:30 pm Networking and pizza dinner

6:30 - 7:30 pm Career panel

This event is an opportunity to meet with technical recruiters from the Twin Cities area and is open to professionals and students from chemistry and related fields. Sophomore and junior chemistry majors are also encouraged to attend to inquire about internships. Please arrive with copies of your current resume and attired to meet with professional recruiters.

Please **RSVP** to **James Wollack** (jwollack@stkate.edu) by November 5th so there will be an accurate head count for food. Include how many people will be coming from your group.

Sponsored by: St. Catherine University, Minnesota Section of the American Chemical Society, St. Catherine University, Lab Support, Pace Analytical, Verum Staffing, Medtox Laboratories, and the University of Minnesota Department of Medicinal Chemistry



December 16th – Annual Holiday Social at Mancinni's Char House and Lounge

Come celebrate and socialize with your fellow chemists.

Schedule:

5:30 – 6:30 pm – Networking and cash bar

6:30 – 8:30 pm – Dinner

Menu for Dinner:

Steak or chicken or veggie option, appetizers, relish tray salad, bread, baked potato, cake, coffee

Cost:

\$20 in advance

Location:

Mancinni's Char House, 531 7th St W, St. Paul, MN 55102

RSVP by Wednesday, December 9th on the **NEW** MN ACS website:

<http://mnacs.sites.acs.org/>

At the site you can register under the Web Store tab, choose Meal Ticket - 16 December 2015.

“Chemistry Colors Our World” - National Chemistry Week 2015



Marilyn Duerst, National Theme Team Chair

About a hundred visitors, including parents and children from 1 to 15, crowded the children's room at the downtown Minneapolis Public Library on Saturday, October 24, 2015 for the annual National Chemistry Week celebration. The theme this year was "Chemistry Colors Our World". At least 20 student and adult volunteers were on board to help at the event.

"Chemistry in a Bag" illustrated a color change from red to yellow, and produced heat and carbon dioxide that nearly burst ziplock bags, to the delight of the children who mixed calcium chloride, baking soda, with an acidic phenol red indicator solution.

"Is Black a Color?" is an interesting question, since black is supposed to be the absence of color or of light. Children drew dots, circles or even flowers with "black" markers on coffee filters first. Then drops of water applied in the center spread out and separated the colors into blues and lavenders, and children discovered the colors of inks that had been mixed to help absorb all the light that struck it, to make it appear "black".

Colors of light are different from colors of pigments. Using diffraction gratings and "rainbow glasses" which were given as prizes to the children, visible spectra were observed with an incandescent bulb, as well as the subtraction process when red, green and blue plastic filters were placed over the light bulb. A device was demonstrated that overlaid red, blue and green light first in pairs, then all three to form white light. A UV light was shown on various kid-friendly objects, like slinky, hair ribbons, and toys, to show fluorescence.

"Fake snow", both the type that makes fluffy "snow" and the type that makes "snowballs" was a big hit, as well as making a superball to take home. The electrolysis of water, using a 10 volt source, and some magnesium sulfate ("epsom salt") in the water, was fascinating to visitors.

What happens when you put dry ice in water? The dry ice is warmed and changes into gaseous carbon dioxide! A balloon stretched over a large flask with colored water and dry ice, gradually expanded until... when will it pop???? Squeals of delight were heard with the BANG as it popped off the flask. Carbon dioxide bubbles made poofs that fascinated all, even the youngest children that attended the event. Smoke rings were another variation.

Free magazines and stickers were given to most of the participants. All in all it was a wonderful outreach event, and we thank all our student volunteers and our chemists in the library who helped make this a great success.

Next year's theme for National Chemistry Week is "Solving Mysteries Through Chemistry". Sounds like fun!

Mark your Calendars for the Senior Chemists' November Lunch

Lynn Hartshorn

A reminder that the next lunch for the Minnesota ACS Local Section Senior Chemists'



Group will be on Wednesday November 11th at 11:30 am at the Green Mill Restaurant on Hamline and Grand Avenue in St Paul. One of our seniors, Harold Schobert, will give a 20 minute short talk called "Is There a Future for Coal?" We will order from the menu. The Green Mill has a parking lot 50 yards west along Grand Avenue, and street parking is also available. All are welcome, including newcomers and guests. Please let Lynn know you are coming by November 6th. Send an email to: lghartshorn@stthomas.edu
Thanks, and I am looking forward to seeing you all.



Call for Nominations – 2016 Minnesota Section High School Chemistry Teaching Award

In 2016 the section will recognize an outstanding high school chemistry teacher with the Award for Excellence in High School Chemistry Teaching. The most recent awards, in 1995, 1998, 2001, 2004, 2007, 2010 and 2013 were given to Rena Benedict of Forest Lake, Marcy Copeland of Granite Falls, Patricia Richards of Como Park High School, Michael Minnema of North Community HS, Becky Keller of Highland Park HS, St. Paul, Jamie Crannell of Chaska HS, Jennifer Steiger of Mahtomedi HS, Janice Gepner of St. Paul Academy and Ian Bronson of North High School.

The nominee must be engaged in the teaching of chemistry of high school (grades 9-12). The nomination must include a biographical sketch, a list of publications (if any) and a statement of and evaluation of the nominee's achievements as a high school chemistry teacher. The nomination should clearly demonstrate the following attributes: (1) the quality of the candidate's teaching including effective methods of presentation; (2) the ability to challenge and inspire students; (3) extracurricular work in chemistry including science fairs, science clubs, and activities that stimulate the interest of young people in chemistry and related sciences; and (4) willingness to keep up-to-date in chemistry.

The nominating packet may include up to four supporting letters from supervisors, associates, MN section members, or former students who have graduated from high school.

The award consists of a plaque and cash award of \$500 which will be presented at the May 2016 meeting of the section.

The nomination procedure is simple - submit the nominating letter and all supporting information to the chair of the Awards Committee. Paper copies cannot be accepted. The deadline for completed nomination packets is February 16, 2016; send them to Ramesh Kumar, rckumar0051@mmm.com.

Call for Nominations – 2016 The Lyle Hall Senior Chemist Award

The Lyle Hall Senior Chemist Award is based upon post-retirement professional activities of a member of the Minnesota ACS Section who has entered into formal retirement from his/her primary job. Professional activities can include volunteer ACS service, volunteer activities in any other scientific organization such as the Minnesota Academy of Science

(i.e. Science Fair Judging), professional writing, consulting, and/or research. Nominations (including no more than 2 seconding letters) should be sent to Ramesh C. Kumar (rckumar0051@mmm.com). A CV is useful. The Awards Committee may also select an award recipient, based upon their collective knowledge of the activities of an individual. The deadline for completed nomination is Feb. 16, 2016.

Call for Nominations – 2016 Janet Tarino Volunteer Award

The Janet Tarino Volunteer Award will be given to an individual for outstanding volunteer service to Minnesota ACS, and/or chemistry related projects and events not directly connected to Minnesota ACS. This person will have demonstrated an exceptional passion for and commitment to community outreach, and dedication to projecting a positive image of chemists.

Nominating documents should include curriculum vitae and examples of volunteer service. The award consists of a plaque which will be presented at the May 2016 meeting of the section.

Nominations should be submitted electronically to the Chair of MN ACS Awards Committee, Ramesh C. Kumar (rckumar0051@mmm.com) before or on Feb. 16, 2016.



STEM Interns

Is your company interested in looking for STEM interns?

Do you know you can receive a 50% cash match on the intern's wages up to \$2500?

SciTechsperience is an internship program funded by the State of Minnesota that connects college students majoring in science, technology, engineering and math (STEM) to paid internships in small, STEM-based companies throughout Minnesota. SciTechsperience offers students an opportunity to get hands-on experience in their field of study and companies receive a dollar-for-dollar matching grant to cover 50% of internship wages up to \$2,500. SciTechsperience will provide at least 200 matching grants in 2015-2016 while supplies last.

Eligible companies are:

- For-profit companies with a physical presence in Minnesota
- Small: Companies in the 7-county metro area must have fewer than 150 employees world-wide; Greater Minnesota companies must have fewer than 250 employees world-wide
- Offer Internships that provide hands-on STEM industry experience in one of the following industries: Aerospace and Defense, Agriculture and Food Science, Biotech and Life Sciences, Engineering Services, IT/Computer Technology, Mining, Materials, Manufacturing and Processing

Students must be: A Minnesota resident or attending college in Minnesota, at least 18 years of age, enrolled in an accredited U.S. college and in an approved STEM curriculum, in good academic standing (2.5 GPA), halfway through their academic program, technical college student (must be in second year of two-year program), or college junior (at least 60 credits completed), or college senior, majoring in a STEM related field, legally eligible to work off campus in the U.S.

What's the catch? There is none! There is no fee at any time for businesses or students to participate in the program.

Questions? Contact Becky Siekmeier, the SciTechsperience Program Director with any questions at beckys@mhta.org

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

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