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# The Minnesota Chemist

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## Greetings from the Chair

Nearly Halloween as I write this note. The leaves are turning and snow is coming soon!

We had a great meeting at St. Olaf on climate change, given by Patrick Hamilton from The Science Museum of Minnesota. Equally exciting was the number of St. Olaf undergrads who came to the talk. We filled a 140 seat auditorium!

Our fall program continues with:

**Tuesday, Nov 14, 6th annual Chemistry Job & Recruiting Fair**

Location: Saint Catherine University

**Monday, Dec 11, MNACS Winter Social**

Location: Surly Brewing Company

The National Organization of Black Chemists and Chemical Engineers (<http://www.nobcche.org/>) are having their conference October 30<sup>th</sup>- November 2<sup>nd</sup> in Minneapolis. We are supporting students from the U of MN to attend and present at this meeting. I am looking forward to hearing from these students on how the meeting went and what they spoke about.

I continue to encourage everyone to think about doing something in the local section in the coming months. Involvement in any of the groups tends to lead to larger involvement in the section and new ideas for what we can do. We have areas like Environmental Improvement, Minority Affairs, Professional Relations, Public Affairs, Women Chemists, etc. that are unfilled or in the process of restarting. We have volunteers running or involved in activities like Project Seed, Senior Chemists, the Chemistry Olympiad, the Winchell Symposium, etc. that could probably use additional help.

I hope to see you at our upcoming meetings.

Regards,  
Nick Schlotter  
[nschlotter@hamline.edu](mailto:nschlotter@hamline.edu)



## Chemistry Job & Recruiting Fair – November 14, 2017

The Minnesota Local Section of the American Chemical Society is pleased to announce our 6th Annual Chemistry Job & Recruiting Fair.

The Chemistry Job and Recruiting Fair will be held from 4 – 6 P.M. on **Tuesday, November 14th, 2017** at **Saint Catherine University** in Saint Paul, MN in the 3rd floor Ballroom of the Coeur de Catherine Building.

**Confirmed companies and organizations with others pending\*:** Aerotek, Apix Life Sciences, Beckman Coulter, Experis, H.B. Fuller, Kelly Scientific, Medtronic, Pace Analytical Services, Land O'Lakes, Verum Technical, WuXi AppTec, Minnesota High Tech Forum, University of MN Department of Chemistry, University of MN Department of Medicinal Chemistry, University of MN Division of Environmental Health Sciences, other companies pending.

**Schedule: 4-6 pm meet with recruiters**  
**5 pm pizza, beverages, and light snacks will be served**

**Cost: Free with RSVP**

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 **RSVP to James Wollack** ([jwollack@stkate.edu](mailto:jwollack@stkate.edu)) by November 9<sup>th</sup> so there will be an accurate head count for food. Include how many people will be coming from your group.

**Thank you to career fair sponsors – MN-ACS, St. Catherine University, Aerotek, Beckman Coulter, Pace Analytical Services, Verum Technical, Experis, Minnesota High Tech Forum, University of Minnesota Division of Environmental Health Sciences.**



## **MN ACS Senior Chemists' Meeting – November 9**

Lynn G Hartshorn

SPECIAL NOVEMBER SENIOR GROUP MEETING: TOUR AT TPT STUDIOS ON NOVEMBER 9<sup>th</sup> at 10 am, followed by lunch at "Hygge."

Several months ago, a few of us from the Minnesota ACS met with David Gillette, a producer at TPT/PBS, to help with suggestions for a hands-on science production on TPT that he was planning. He has recently told us that the first three episodes of "Hands-On Science" (the pilot season) will debut on television this October. All three episodes will appear on the TPT/PBS website and via Roku, Apple TV and other streaming devices around the same time.

If you would like to watch them, the broadcast premiere dates are:

October 15<sup>th</sup>, 7pm, Minnesota Channel – Performers: U of M Physics Force

October 22<sup>nd</sup>, 7pm, Minnesota Channel – Performers: U of M Energy and U

October 29<sup>th</sup>, 7pm, Minnesota Channel – Performers: Leif Voltz, Dr. Fun and Melanie Olson

Each episode will also play on TPT 2 shortly after the premiere.

The goal is to secure funding for an extended, twelve-episode season, ideally by early 2018.

David Gillette has kindly volunteered to lead a group of Senior Chemists on a tour of the TPT studios.

This will be our next meeting on THURSDAY NOVEMBER 9<sup>th</sup>. We will meet at the TPT studios at 172 East Fourth St. in downtown St. Paul for a tour beginning at 10 am. The tour will last about an hour and then we will lunch at 11:30 am about a block away at a new restaurant called "Hygge," 213 4th St, E Suite 100. The closest parking lot to the TPT studios is the ramp

connected to the building, accessible off Jackson or Sibley. There is also some street/meter parking, or parking at Union Depot.

Reservations are essential since the tour will be limited to 20 people. RSVP to Lynn at [lghartshorn@stthomas.edu](mailto:lghartshorn@stthomas.edu) by MONDAY NOVEMBER 6<sup>th</sup>. I will assume that you are also coming to lunch unless you tell me otherwise.



## SciTechsperience interns help development breakthrough topical treatment for Osteoarthritis

Becky Siekmeier

*The SciTechsperience Internship Program ([SciTechMN.org](http://SciTechMN.org)) is a free, statewide, state-funded resource that connects small companies to college STEM majors. Employers receive a cash match that covers 50% of an intern's wages, up to \$2,500, while students acquire hands-on experience in their field. SciTechsperience will support at least 325 internships through August 2018 on a first come, first hire basis.*

### Osteoarthritis: A pain in the back (and other joints)

According to the Arthritis Foundation, Osteoarthritis (OA) is sometimes called degenerative joint disease or degenerative arthritis, OA is the most common chronic condition of the joints, affecting approximately 27 million Americans. OA can affect any joint, but it occurs most often in knees, hips, lower back and neck, small joints of the fingers and the bases of the thumb and big toe. Osteoarthritis leads to pain and inflammation and is both a major health care issue and a complex one.

[Dynation, LLC](#), a startup company based in St. Paul, is researching and developing a new topical treatment for OA. The treatment is a novel nanoparticle called a lipoleosome for transdermal (through the skin) delivery of ibuprofen to treat OA. The ability to deliver ibuprofen selectively to parts of the body that need medication to reduce pain and inflammation is a critical medical need particularly for patients who are unable to take drugs orally to avoid stomach problems.

### Advancing innovation takes a village

After a long and successful career in large corporate research and development labs (3M, Samsung Electronics, Ecolab and Imation), Dr. Eric Morrison (above, center), Founder and CEO, Dynation, LLC, embarked on a journey to advance the science of transdermal drug delivery technology. In 2017, he was competitively awarded a \$225,000 grant from the National Science Foundation's Small Business Innovation Research (SBIR) program to research and develop a novel lipoleosome; a new type of liposome (a vehicle for drugs) with a much greater carrying capacity for drugs.

### SciTechsperience interns make great contributions

Dynation also received help advancing this new technology by hiring two interns through the SciTechsperience Internship Program: Leah Schmidt (above right), a senior majoring in Biomedical Science at St. Cloud State University, and Doug Nelson (above left), who is studying mathematics and chemistry at the University of Minnesota-Twin Cities.

Dr. Morrison said that making a decision on who to hire was a challenge because he had at least twenty applicants for his two openings. He was looking for candidates who were smart, down to earth, interested in his project and had plans to continue education beyond bachelor's degree. Both Doug and Leah fit the bill.

Leah worked on making nanoparticles and checking their stability. Doug was primarily focused on measuring how well the nanoparticles move the drug through the skin.

"My most memorable moments have been when I learned something from Doug and Leah that was different than what I thought it was going to be," said Dr. Morrison. He says he'd tell them,

'This is the way it is,' and they'd say, 'No, that's *not* the way it is.' "I'm really impressed, because that's what I need to know. I've got a theory that I'm working on, and we need to put it to the test."

The interns benefitted from working on the project as well. "I really learned a lot from this project; from HPLC to characterization and using real world lab techniques, and the guidance from Dr. Morrison has been great," said Doug. Leah added, "Working at the Minnesota Nano Center, I had the opportunity to work with new tools and to learn new ways and methods of characterization."

Dr. Morrison wasn't initially considering interns for the project, but said, "I am so glad I did. I wanted interns who were flexible and assertive. Both Leah and Doug did exactly that. They did a great job!"



#### **New SciTech program year is underway**

The 2017-2018 SciTechsperience program got underway September 1 and runs through August 31, 2018. MHTA has funding to support a 50% wage match for at least 325 internships this year. To learn more or get started, go to [SciTechMN.org](http://SciTechMN.org) or contact Program Director, Becky Siekmeier, at [beckys@mhta.org](mailto:beckys@mhta.org).

#### **About MN-SBIR**

MN-SBIR, a federal and state funded program, provides one-on-one assistance to qualifying high risk technology companies to compete and win federal funding to support their technological innovations. The NSF Small Business Innovation Research / Small Business Technology Transfer (SBIR/STTR) program seeks to transform scientific discovery into societal and economic benefit by catalyzing private sector commercialization of technological innovations. The program increases the incentive and opportunity for startups and small businesses to undertake cutting-edge, high-quality scientific research and development. To learn more, contact Pat Dillon at [pdillon@mhta.org](mailto:pdillon@mhta.org) or go to <http://www.mhta.org/mnsbir/>.



#### **Hamline University – Analytical Chemistry Instructor**

Majerle, Rita S.

**Hamline University** seeks a part-time ANALYTICAL CHEMISTRY Instructor for Sp18 (1-lecture and 2X3 hour labs) as a sabbatical replacement. Ph.D., MS with experience or ABD

minimal requirements. Please email Rita Majerle for more information (rmajerle01@hamline.edu).



## Volunteer Opportunities

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#### Upcoming Chemists-in-the-Library Events

Philippe Buhlmann

November 18, 1:30 pm at Arlington Hills Library

December 2, 1:30 pm at Sun Ray Library

January 20, 1:30 pm at Augsburg Park Library

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If you have content for The Minnesota Chemist, please send it to Becky Guza, Editor ([becky.guza@hbfuller.com](mailto:becky.guza@hbfuller.com))

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