

The Minnesota Chemist

Official Publication of the Minnesota Section of the American Chemical Society

Issue 3, May - Jun 2017



Greetings from the Chair

Hello Everyone,

Our April meeting was well attended and the German cuisine pleasing. If you haven't been to the Black Forrest Inn it is worth a visit. If you missed it and would like a copy of the slides they are available by contacting me and requesting them.

Our award's meeting is coming up in May on Tuesday the 9th. In addition to the 50 and 60 year member certificates to be presented, we have the Lyle Hall Senior Chemist Award, the Janet Tarino Volunteer Award and the 2017 Minnesota Award of the Minnesota Section, the winner, Stephen S. Hecht, will be our evening speaker. As a bonus we will have a brief presentation from Megan Fieser, supported by a travel grant from our section, on the work she presented at the National ACS in San Francisco. In addition, Megan has some words about the Minnesota March for Science. Megan was involved in organizing University of Minnesota students for the march. Details about the meeting can be found at our webpage <http://mnacs.sites.acs.org/> as well as links to register for the meeting.

The June social meeting is scheduled for Tuesday the 13th. We have space at Minnehaha Park reserved for a picnic. We are currently planning the event and hope to have details soon.

We are currently in the process of forming the Minority Chemists/Minority Affairs and Working Women Association groups. Hopefully we will hear soon on what these groups will be doing. If you have questions on either group contact chair-elect Arianna Ahl (amkooyman@gmail.com).

I hope to see you at our upcoming meetings.

Nick Schlotter
nschlotter@hamline.edu



MN ACS Meeting – Tuesday, May 9, 2017, 5:00 – 8:30 pm

Minnesota American Chemical Society Awards Meeting

The Lyle Hall Senior Chemist Award
The Janet Tarino Volunteer Award
2017 Minnesota Award of the Minnesota Section

Title: *Understanding Carcinogenesis by Chemicals in Tobacco Products: Applications to Cancer Prevention*

Speaker: **Stephen S. Hecht**, Ph.D., Masonic Cancer Center and Dept. of Laboratory Medicine and Pathology, University of Minnesota

Location: DeGidio's, 425 7th Street West, St. Paul, MN 55102, (651) 291-7105, Map at <http://tinyurl.com/len6ezf>

Time: 5:00 pm - business meeting; 6:00 pm - Dinner; 7:00 pm - Presentation

Cost: \$20 member / \$5 student

Menu: APPETIZER: Stromboli, SALAD: Italian, PASTA: Mostaccioli with Classic Tomato Sauce & Cheese Tortelloni with Bolognese Sauce, MEAT: Italian Sausage & Peppers, DOLCI: Assorted Dessert Bars

Meal Ticket: Go to the "[Web Store](#)" link on the [MNACS](#) page to purchase meal reservations through PayPal.

Deadline: May 2, 2017

Abstract: I am delighted to receive the 2017 Minnesota Award from the Minnesota Section of the ACS, joining the company of some very distinguished chemists previously honored. I have been so fortunate to work with many incredibly smart and dedicated colleagues who made our progress possible. In this lecture, I will briefly sketch the evolution of our research, following the philosophy of the late Richard N. Loepky: "Let the molecules lead the way!" Then I will summarize some ongoing research projects focusing on chemical mechanisms and prevention of tobacco-induced cancer including studies on metabolically formed urinary biomarkers and DNA adducts crucial to an understanding of carcinogenesis.

Bio: Stephen S. Hecht, Ph.D., Wallin Professor of Cancer Prevention, American Cancer Society Professor, University of Minnesota. Dr. Hecht is an internationally recognized expert on carcinogens in tobacco products and their mechanisms of action. He is the co-discoverer of tobacco-specific nitrosamines, important causative agents for tobacco-induced cancer. His laboratory developed the NNAL biomarker of tobacco carcinogen exposure, crucial in establishing secondhand smoke as a lung carcinogen in non-smokers. His current research focuses on the relationship of human carcinogen and toxicant metabolites and DNA adducts to cancer risk.

He has a B.S. in chemistry (Duke University) and a Ph.D. in organic chemistry (MIT). Prior to moving to the University of Minnesota in 1996, he conducted research at the American Health Foundation in Valhalla, NY, where he was Director of Research from 1987-1996.

He received the AACR Award for Excellence in Cancer Prevention Research in 2006, and the Founders Award from the Division of Chemical Toxicology, American Chemical Society in 2009. He was elected an American Chemical Society Fellow in 2009, a Fellow of the American Association for the Advancement of Science in 2014, and selected as the Editor-in-Chief of *Chemical Research in Toxicology* in 2012. He has been the recipient of a Merit Award and an Outstanding Investigator Grant from the National Cancer Institute, and an American Cancer Society Research Professorship.

He has published over 800 papers in the scientific literature.

MN ACS Summer Social – Tuesday, June 13, 2017

Our summer social will be a picnic at Minnehaha Park. We are currently planning the event and more details will be posted on the website soon: <http://mnacs.sites.acs.org/13june2017.htm>



Report from Councilors

James Wollack



The Council selected Bonnie A. Charpentier and Willie E. May as candidates for 2018 President-Elect.

A procedure to remove councilors and alternate councilors failed. This was likely due to how a board would be set up to review removal case. This will likely come up again at a future meeting.

Member dues for 2018 were set at \$171.

The Council approved the recommendation of the Committee on Committees that the Committee on Project SEED be continued; and that the committees on Chemists with Disabilities, on Public Relations and Communications, and on Women Chemists be continued contingent on approval of the Board of Directors.

On the recommendation of the Committee on Membership Affairs, the Council voted to extend the provision of \$15 commissions to International Chemical Sciences Chapters which recruit new members.

On the recommendation of the Committee on Divisional Activities, the Council approved a formula for allocating dues funds to divisions, effective with allocations for 2017 division performance.

In 2016, ACS generated a Net from Operations of \$23.8 million, which was \$7.2 million higher than 2015. Total revenues were \$526.8 million, increasing 2.9% or \$15 million over 2015. Expenses ended the year at \$503 million, which was \$7.8 million or 1.6% higher than prior year. This was attributable to a continued emphasis on expense management across the organization. The Society's financial position strengthened in 2016, with Unrestricted Net Assets, or reserves, increasing from \$163.3 million at December 31, 2015 to \$206.5 million at year-end 2016.

As of December 31, 2016, the ACS membership was 156,129, which is 0.5% less than on the same date in 2015. The number of new members who joined in 2016 is 23,700. The Society's overall retention rate is 83.5%. The Committee on Membership Affairs also reported that the number of international members has increased to 27,388, exceeding the committee's target by 5%. Retention of graduate students increased by 2% to 76.2%.

San Francisco meeting attendance was 18,850

The Board is developing a statement based on the Society's Core Value of diversity and inclusion in response to the repeal of the North Carolina law known as House Bill 2 ('bathroom bill') and similar proposed legislation in Texas, and is assembling a representative group of stakeholders to advise it on actions relating to the location of Society meetings. There is pressure being put to move the ACS national meeting in San Antonio from several groups of members. This move may cost the ACS loss of deposits for the meeting.



Supplemental Report from Councilors – Items of Interest to Minnesota Section, April 6, 2017

Wayne Wolsey, Macalester College (wolsey@macalester.edu)

Councilors are asked to serve on National ACS Committees, in addition to their expectation in attending the Council Meetings at each National ACS Meeting. Current Councilors are Marilyn Duerst, Lynn Hartshorn, Sarah Mullins, James Wollack, and Wayne Wolsey.

Marilyn Duerst (retired from University of Wisconsin, River Falls) maxed out (reached limit of years of service) from the Committee on Community Activities (CCA). She is the author of two sections of the **2017 Chemists Celebrate Earth Day—Chemistry Helps Feed the World** publication: "N, K, and P, More than Letters of the Alphabet" and "Glue from Milk" (with Richard Rogers). Marilyn now serves on the Committee on Science (COMSCI).

Lynn Hartshorn (retired from the University of St. Thomas) currently serves on the Senior Chemists Committee (SCC).

Sarah Mullins (3M Company) maxed out from the Committee on Chemistry and Public Affairs (CCPA) and now serves on the Committee on Minority Affairs (CMA)/ Project SEED Committee (SEED).

James Wollack (St. Catherine University) is in his first year as a Councilor.

Wayne Wolsey (retired from Macalester College) serves on the Committee on Analytical Reagents (CAR) and the Committee on Nomenclature, Terminology, and Symbols (NTS).

Former Councilor **Danaè Quirk Dorr** (Minnesota State University-Mankato) serves on the Society Committee on Chemical Education (SOCED).

Former Councilor **Ramesh Kumar** (3M Company) serves on the Committee on Patents and Related Matters (CP&RM).

Lee Penn (University of Minnesota) serves on the Committee on Chemists with Disabilities (CWD).

Edgar Arriaga (University of Minnesota) and **Ronald Brisbois** (Macalester College) serve on the Committee on Professional Training (CPT).

Diana Gerbi (3M Company) serves on the Committee on Science (COMSCI).

Jane Wissinger (University of Minnesota) serves on the Committee on Environmental Improvement (CEI).



38th Annual MN Chromatography Forum Spring Symposium

May 9 - 11, 2017
Earle Brown Heritage Center
Minneapolis, MN

Deadlines

Symposium Early Registration Deadline: April 1, 2017
Short Course Early Registration Deadline: April 1, 2017
Abstract Submission Deadline for a Technical Presentation: April 9, 2017
Short Course Final Registration Deadline: May 2, 2017
Symposium Pre-Registration Deadline: May 2, 2017
Symposium On-Site Registration: May 9-11, 2017

May 9-10
Short Courses: May 9-10

- Advanced HPLC & UHPLC Method Development
- Comprehensive GC & GC-MS Troubleshooting
- Analytical Sampling and Sample Prep for Chromatography

May 10 (1pm)
Complimentary Open House

- Equipment Exhibition
- Vendor Seminars
- Refreshments

May 11
Keynote Presentation: Dr. Paul Mahaffy, NASA
"Exploration of Martian Habitability with the Curiosity Rover"
Technical Presentations
Equipment Exhibition

For further information and online registration information visit: www.minnchrom.com



Post-doc and Graduate Student Travel Grant Recipients

Letitia Yao

Megan Fieser was the recipient of the post-doc travel grant to attend the National ACS meeting in San Francisco. Megan will be giving a short (5-min) presentation at the MN ACS Awards meeting in May.

Authors: Megan E. Fieser, Alex John, Lauren A. Mitchell, Brooke Benson, Levi T. Hogan, Anne M. LaPointe, Geoffrey W. Coates, Marc A. Hillmyer, William B. Tolman

Title: Catalytic decarbonylation of fatty acid esters

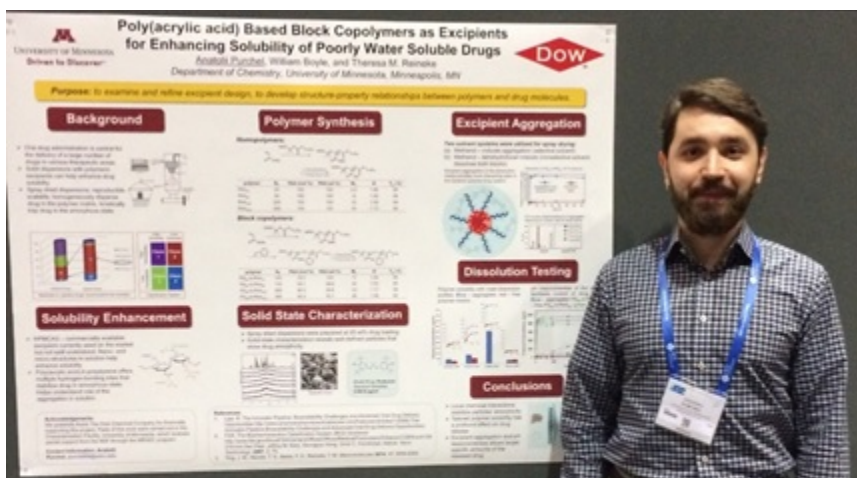
Abstract: Many strategies are being developed to convert biofeedstocks to degradable plastics that can be substituted for petroleum-based plastics. Not all petroleum-based plastics have been substituted at this time, therefore it is important to be able to make these plastics even after petroleum sources eventually run out. Strategies are being explored to convert biofeedstocks to common petroleum-based monomers, particularly α -olefins. Fatty acid esters are particularly prominent in biofeedstocks and could be a useful source to generate olefins, however the acyl-O bonds of many esters are difficult to activate. Homogeneous catalytic decarbonylation of fatty acid esters to form the corresponding olefins is extremely rare in the literature. In this study, high throughput screening studies were used to identify promising catalysts and ligands for homogeneous decarbonylation of fatty acid esters. The results of this screening study will be discussed.

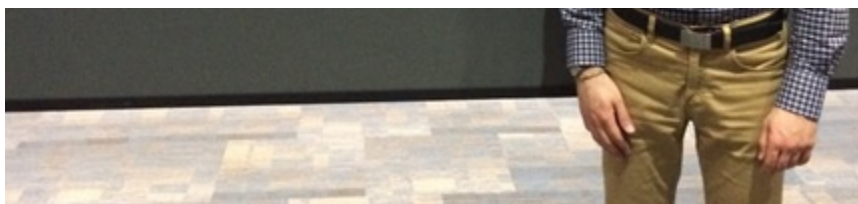
Anatolii Purchel and Alexander Johnson are the graduate student travel grant recipients. The students attended the National ACS meeting in San Francisco.

Anatolii Purchel: The 253rd ACS National Meeting and Exposition I attended presented a lot of useful topics on material science and technology, industry and education. Since my research is focused on the polymer chemistry and its application in the drug delivery, this conference provided me with a great opportunity to share my results and to extend my professional network.

This conference was attended by more than 19,000 participants from all over the world. Record breaking attendance allowed me to meet a lot of representatives from industry as well as my peers with whom I was happy to share my research results during the Division of Polymer Chemistry poster session. It was very exciting to interact with people who were interested in the polymeric excipients for enhancing drugs solubility that I developed in the Professor Reineke lab.

All in all, I am grateful for the support of the Minnesota Section of the ACS that allowed me to attend ACS National Meeting. It was unforgettable experience with a positive impact on my future career development.





Anatolii Purchel at National ACS Meeting in San Francisco. POLY Poster Session on Tuesday, April 4, 2017.



Alexander Johnson at National ACS meeting in San Francisco.



2017 Report of MN ACS Co-Sponsorship of Winchell Undergraduate Research Symposium

Wayne Wolsey, Macalester College (wolsey@macalester.edu)

The Minnesota ACS Section was a co-sponsor, with the Minnesota Academy of Science (MAS), of the 30th annual Winchell Undergraduate Science Symposium, held on the campus of Macalester College on April 22, 2017. The ACS Section paid for the registration fees of \$2,175 and \$300 co-sponsorship fee for 29 chemistry/biochemistry undergraduate presenters who displayed posters or made oral presentations. Some students were also able to participate in the Minnesota March for Science on the same date at the State Capitol. Participants were not judged this year.

Students participating were from Bemidji State University, Bethel University, Hamline University, Macalester College, Minnesota State University—Mankato, Rochester Community and Technical College, St. Catherine University, St. Olaf College, University of St. Thomas, and Winona State University.



2017 Report on MN ACS Prizes at Regional Science Fairs

Wayne Wolsey, Macalester College (wolsey@macalester.edu)

Each year, MN-ACS awards a cash prize of \$50.00 to a top Chemistry/Biochemistry High School Project at each of the four Regional Science Fairs held within its territory boundaries. The awardees this year follow:

Mankato (Southern) Region

Alyssa Compton (Kasota), "A Novel Approach to Minimize Road Salt Contamination of both Terrestrial and Aquatic Ecology", Loyola Catholic School-Mankato, 12th grade, adv. Sue Goebel

Rochester Region

Yuxuan Geng, "Peels to Plastic: Biodegradable Plastic Alternative", Mayo High School-Rochester, 10th grade, adv. Christine Stegena

St. Cloud (Central) Region

Yacob Mohammed (Brooklyn Park), "Electrolytic Conductivity", Al Amal School-Brooklyn Center, 9th grade, adv. Hala Bazzi

Twin Cities Region

Kerni Vang (Eden Prairie), "Effects of pH on Polyvinyl Alcohol Behavior in Aqueous Solutions", Valley View Middle School-Edina, 9th grade, adv. Caroline Ylitalo
Thanks to the MN ACS members who judged at these Regional Science Fairs.



2017 MN ACS Section Awards at Minnesota State Science Fair

Wayne Wolsey, Macalester College (wolsey@macalester.edu)

High School Awards

Top Award (\$100)

Austin Weatherhead, "Folic Acid-Coated Magnetic Nanoparticles as a Potential Anticancer Drug-Delivery System for the Targeted Release of Cisplatin", Winona High School, 11th grade, adv. Jon Feldhake

Honorable Mention Awards*

Emmarah Qureshi (Blaine), "Beta-Carotene: The Natural and Effective Way of Getting Vitamin A", Al-Amal School, Brooklyn Center, 9th grade, adv. Hala Bazzi

Emma Wells, "Quack, Quack, What's in my Water? What effect does the level of Salicylic Acid (aspirin) have on the growth of Lemna minor (duckweed) and Lumbriculus variegatus (sediment worm) survival and reproduction rate while under the stress of glyphosate (®Roundup)?", Cloquet High School, 10th grade, adv. Cynthia Welsh

Kerui Yang (Eden Prairie), "Effects of pH on Polyvinyl Alcohol Behavior in Aqueous Solution", Valley View Middle School –Edina, 9th grade, adv. Caroline Ylitalo

Junior High Awards

Top Award (\$50)

Rikhil Seshadri (St. Paul), "Low Cost Supercapacitors for Energy Storage", Math & Science Academy-Woodbury, 7th grade, adv. Kannan Seshadri

Honorable Mention Awards*

Mary Jane Eagle (Cloquet), "What effect does oil contamination of soil (oil with and without leaves) in different climate situations (today compared to 100 year climate change temperature increase prediction (70 and 74 degrees F) have on the decomposition of a green teabag", Fond Du Lac Ojibwe School , 6th grade, adv. Cynthia Welsh

Alivia Moser, "The Brilliant Blue Glow of Luminol", Friedell Middle School-Rochester 8th grade, adv. Joanne Michet

Benjamin VanSchaick, "Electrifying Electrolytes", Franklin Middle School-Thief River Falls, 7th grade, adv. Amber Murry

*All Honorable Mention Awardees will receive a one-year subscription to ChemMatters—ACS publication for students.

Thanks to Diane Amell, Todd Williams, and Wayne Wolsey for serving as judges.



Senior Chemists Lunch Meeting on May 17th

Lynn Hartshorn

Please mark your calendars for a special event for the Senior Chemist's group of the Minnesota Section. On Wednesday, May 17th we will be visiting the 3M Innovation Center at 2350 Minnehaha Avenue, Maplewood, 55119 ([map](#)) from 12 noon to 1pm, and then lunching at the 5-8 Tavern and Grill, located at the intersection of Minnehaha Avenue and McKnight Road (self-paying). The group will meet in the lobby of the 3M Innovation Center, where there is plenty of free parking. Reservations are **ESSENTIAL** for this meeting, since 3M requires a name badge for every visitor and they need a list of names a few days before to do this. Also the restaurant needs to know how many of us will be going in order to have adequate staffing. **RSVP to Joe McGrath (joemmcgrath@yahoo.com) by Sunday, May 15th at 6pm.**

Many thanks to one of our members, Joe McGrath, for arranging this event!

All are welcome, including guests and new members.



Loss of a Colleague – John Walter Ring

John Ring age 91, of Falcon Heights Passed on March 8, 2017. Preceded in death by beloved wife Loretta Jane in 2015. Survived by son Steven Ring (Molly Redmond), daughter Sue Ring-Jarvi (Roland), grandsons Ross Ring-Jarvi and Mike Ring (Flannery Clark), brother James (Maren) and sister Hazel Voss. John was born and raised in Faribault with 10 brothers and sisters. He went into the army directly after high school graduation, and was deployed to Belgium, where he was seriously wounded in the Battle of the Bulge. His long recovery took him to England, then a hospital in Iowa. There he met his match—the lovely young nurse, Loretta Jane Yourd. John went to college on the GI Bill to become a science teacher, graduating from Macalester College in 1951. His was a life full of joy, friends, and outreach. Some highlights: High school science teacher for 38 years (mostly in St. Paul), sponsored women's hockey teams, made incredible cinnamon rolls. Coordinated Odyssey of the Mind/ Destination Imagination for 30+ years. Led his Scout troop in making fiberglass canoes (don't try to lift one!). Quietly helped many kids go to college. Active in professional associations. Got a PhD, crazy about mountains, was a great bridge player. Built two lake cottages. Believed in giving back to the community. Traveled to China, Australia, and Alaska. Loved family gatherings, especially with pie. Could fix or build darn near anything—ie, that dubious cement mixer from a trashcan and a washing machine motor. Was a great neighbor. Johnny Cash fan. Impossible to go out to dinner with him in St. Paul area without former students coming up to greet "Doc Ring!" Loved Macalester College, taught there a year or so, and was a persistently active alumnus. We celebrate him, and the way he lived his life! A memorial service, followed by a reception, will be held at the Macalester College Weyerhauser Chapel at 1:30 PM on March 26. Memorials should go to Macalester College.

Published in Pioneer Press on Mar. 19, 2017



**Volunteer
Opportunities**

Upcoming Chemists-in-the-Library Events

Philippe Buhlmann

June 3 at 1:30 PM – Hayden Heights
July 29 at 1:30 PM – Rice Street
August 26 at 1:30 PM – North East Library

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

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