



# The Minnesota Chemist

Official Publication of the Minnesota Section of the American Chemical Society

Issue 4, July - August 2015



## Greetings from the Chair

Dear Minnesota Chemists,

I hope everyone is enjoying a beautiful summer. We have been busy preparing a fun, exciting, and educational MN ACS meeting series for this fall. We hope that this fall offers something for everyone – scientific lecture, career fair, socials, etc. This year will be our 4th annual November MN ACS Job Fair. For those of you not job hunting, please note that there will also be a regular section meeting in November.

This fall we also have the unique opportunity of hosting a Leadership Development Course in Minnesota. These courses are typically offered at ACS National Meetings, but through support from a National ACS grant, we are bringing one of these courses to you. Please see below for additional information regarding the course and registration. Space is limited so if you are interested, please register as soon as possible.

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

## Save the Date – Fall Meeting Schedule

### September 8th:

Speaker TBA  
DeGidio's Restaurant and Bar, 425 7th St W, St. Paul  
Dinner at 6 pm. Speaker at 7 pm.

### October 13th:

Julie Miller Jones, "Nutrition Potpourri: Everything you wanted to know about chemistry in nutrition but were afraid to ask."  
Bent Brewstillery, 1744 Terrance Drive, Roseville  
Dinner at 6 pm. Speaker at 7 pm.



**November 5th:**

Dr. Stephen Hecht, "Metabolism and DNA Interactions of Carcinogenic Tobacco-Specific Nitrosamines"

University of MN Cancer and Cardiovascular Research Building, 2231 6th St SE, Mpls.

Dinner at 6 pm. Speaker at 7 pm

**November 10th:**

MN-ACS Career Fair

St. Catherine University, 2004 Randolph Ave., St. Paul

4-6 pm recruiters available. Career panel at 6 pm.

**December 16th:**

Holiday Social.

Mancinni's Charhouse, 531 7th St W, St. Paul

Networking 5:30 pm. Dinner and program 6:30 pm.

Check the MN ACS website for updates: <http://www.mnacs.org/>



## September 19 – Leadership Development Course

### Fostering Innovation

Facilitator: Dr. David Harwell, Assistant Director of Industry Member Programs at ACS

The advancements in chemically based products, technology, and science are happening at the speed of light. Every individual and organization is required to continually improve, generate new ideas, and develop advanced systems. To meet these expectations means knowing how to tap into our creativity and challenge existing approaches. Yet, it is not easy to change perspectives and break free to create something new.

Imagine what you could accomplish, if you could:

- Draw on our own imagination to create new ideas.
- Eliminate personal and organization barriers that inhibit your ability to think more innovatively.
- Have access to a systematic approach to help create innovative ideas.

We are all capable of creative thinking, especially with the help of a process to think outside the box and get over the inhibitions that sometimes make us unwilling to challenge conventional thinking. Whatever the reasons that get in the way, the goal is to gain the tools to stretch your ability to develop new ideas.

In this four-hour interactive course you will learn that innovation doesn't happen by chance, but can be managed. The understanding and tools you acquire will help you learn about your own innovation style and others'. You will learn:

- The barriers to innovation and how to manage them
- The different ways in which people are innovative.
- Four approaches to generating ideas.

- How to stimulate innovative thinking, challenge traditional approaches and encourage diverse perspectives.

**When:** Saturday, September 19, 2015 from 8 am – noon

**Where:** Hamline University, Anderson Center Room 305  
774 Snelling Avenue North, Saint Paul, MN 55104

**Cost:** **Free!**

Funding for this course provided by a ACS Leadership Development System™ Grant

**To register send an email with your name and contact information to Becky Guza at [becky.guza@hbfuller.com](mailto:becky.guza@hbfuller.com) by August 21.**

\*Space is limited to the first 20 people that register.



## May Awards Banquet – St. Olaf College

Wayne C. Wolsey

### 2015 Brasted Award

#### Gary L. Miessler

The Brasted Award is given every three years by the Minnesota Section of the American Chemical Society in memory of Professor Robert Brasted, who was on the Faculty of the University of Minnesota from 1947-1986, for outstanding contributions to undergraduate chemistry education.

The 2015 recipient is Professor Gary L. Miessler of St. Olaf College, an Inorganic Chemist, like Robert Brasted. He is a graduate of the University of Tulsa and, after some service with the U.S. Army in the early 1970s, received his Ph.D. from the University of Minnesota in 1978 under Professor Louis Pignolet, and joined the chemistry department at St. Olaf College that same year.

Miessler has been creative in his teaching and co-developed a sophomore course in organometallic chemistry course and a non-majors course. Both of these courses were shared with the greater chemical education community through publications in the Journal of Chemical Education. In addition, he has a keen interest in developing laboratory experiences with polymers in the physical chemistry curriculum.

He has received two Dreyfus Foundation Grants and was designated as the *Edolph A. Larson and Truman E. Anderson, Sr. Professor of Chemistry* for two five year terms at St. Olaf.

Supporters of this nomination have said that "Gary virtually exudes care for his students' well-being,"

“He excels in teaching at every level,” “The attention he gives to his research students is phenomenal,” “I learned the value of persistence in the face of inevitable stumbling blocks and obstacles in research,” and “Gary has been a trendsetter in chemical education.”

In numerous institutions, Miessler’s name is synonymous with “Inorganic Chemistry.” The first edition of the text, *Inorganic Chemistry*, coauthored with his late colleague Donald Tarr, appeared in 1991. With its emphases upon modern bonding descriptions and mechanisms, the five editions (the fifth in 2014 with Paul Fischer) has had a major impact upon the teaching of the Advanced Inorganic Course throughout the world, with translations into twelve languages.

*Organometallic Chemistry*, coauthored with Gary Spessard, is the title of a second book, appearing in 1997. The third edition of this text is currently being prepared. This text is used at several of the leading higher education institutions in the country.

Miessler has also been involved extensively with the ACS Division of Chemical Education Examinations Institute, serving for many years on the Committees for the General Chemistry course and the Advanced Inorganic Course.

He has also made numerous contributions to organometallic chemistry via his research efforts, and has involved undergraduates as coauthors. He coauthored a key review article on the use of Mo-95 NMR in structural studies, and while on sabbatical at with Robert Angelici at Iowa State University investigated dioxycarbene complexes of rhenium.

A superb writer, Miessler has headed up writing activities both within the chemistry department as well as being a leader within the St. Olaf First-Year Writing program.

It is clearly evident that Gary Miessler is a consummate teacher, a leading curriculum writer, and a professor who had dedicated the past 37 years to instilling positive attributes to thousands of students. He is the ideal recipient of the 2015 Brasted Award.

## **2015 Janet Tarino Volunteer Award Marilyn D. Duerst**

Marilyn Duerst has been chosen for the Janet Tarino Volunteer Award of the Minnesota Section of the American Chemical Society. Janet Tarino, a retiree from the Mansfield campus of The Ohio State University, was an extraordinary volunteer in her seven year (2002-2009) membership in the MN ACS Section, before moving to California, where she passed away in 2012. She was a co-founder of the Chemists in the Library group, demonstrator at the Science Museum of Minnesota and with the Kids and Chemistry activity, participant with the Chemistry Olympiad, and frequent judge at Science Fairs.

Marilyn is a 1963 graduate of St. Olaf College and received an M.S. from the University of California-Berkeley. She has long been an active volunteer in science-related activities. She has been National Chemistry Week Chair for the MN Section for many years, served as Section Chair in 2001 and has been a Councilor since 2008. She was the recipient of the Volunteer Award in 2007. At the national ACS level, she has been on the Committee

on Community Affairs since 2006 and for several years has helped plan National Chemistry Week themes and activities. She is the National Theme Team Chair for National Chemistry Week 2015, *Chemistry Colors Our World*.

In 1981, she started teaching as an adjunct at the University of Wisconsin—River Falls. Currently she is *Distinguished Lecturer of Chemistry*. She has taught various General Chemistry courses and a popular non-majors course as well as graduate level courses in the Master of Science Education program. In addition she has collaborated with Professor Emeritus John Hill in revisions of chapters in the 14<sup>th</sup> edition of *Chemistry for Changing Times*. The UWRF general chemistry laboratory manual has been edited by her for several years.

Marilyn has many outreach venues in which she shares her enthusiasm for chemistry. At UWRF she received NSF grants which facilitated a Summer Science Institute for Elementary Teachers and a Physical Science Institute for K-3 Teachers. Additionally she taught summer courses for kids such as “Solving Mysteries with Chemistry” and “Adventures in Chemistry.” Her “Mrs. Wizard’s UV Light Show” was taken to over 240 Wisconsin and Minnesota classrooms. Like the MN ACS Chemists in the Library group, she has led science-based activities in several western Wisconsin small town libraries as part of their summer reading programs. Frequently she makes presentations and helps with chemistry programs with Boy Scouts, Girl Scouts, and 4-H clubs. It is estimated that she has made presentations to over 8,000 children over 3 decades. In 2012, she taught a Hudson, WI class for senior citizens, “Grandma and Grandpa’s Science Experiments.”

She has published and given presentations in the areas of Infrared Spectroscopy, Elementary School-University Interactions, Chemistry of Slime, and Designing a Chemistry Course for Elementary Education Majors. She is also the coauthor, with John Hill, of a children’s book, *The Crimecracker Kids and the Bake Shop Break-in*.

With her phenomenal efforts in science outreach, Marilyn D. Duerst is a most worthy recipient of the 2015 Minnesota ACS Section Janet Tarino Volunteer Award.

## **2015 Lyle Hall Senior Chemist Award Lynn G. Hartshorn**

Dr. Lynn Hartshorn has been chosen as the 2015 recipient of the Lyle Hall Senior Chemist Award of the Minnesota Section of the American Chemical Society. Lyle Hall was a long-time Faculty member in the Chemistry Department of the University of Wisconsin—River Falls, as well as an active member of the MN-ACS Section. For over 20 years, he served as Co-Chair of the Senior Chemists committee and was active in selecting retired chemists for this honor; a criterion for the award being active professional and/or volunteer involvement since formal retirement.

Lynn Hartshorn, a native of England, received her B.Sc. (1964) and Ph.D. (1973) from the University of Exeter. After additional research experiences in England and the U.S., she joined her husband, Dick, in the Twin Cities and began looking for an academic position. Following teaching at Hamline University for a year, she joined the Faculty at the

University of St. Thomas in 1984, becoming Professor Emeritus in 2010. She taught classes in physical chemistry, general chemistry, environmental chemistry, and non-majors courses. She has published and given conference presentations in the areas of gas-phase kinetics, electrochemistry, classroom activities in general chemistry, and summer school workshops for elementary teachers.

While at St. Thomas, she was extensively involved with, and was a leader, in their outreach programs in science education, and was the co-recipient of grants from the Eisenhower Mathematics and Science Act, the Fund for the Improvement of Post-Secondary Education, and Sci-Math<sup>MN</sup>. She helped establish a new major in Science and Mathematics for Elementary Education.

Lynn has given much time to her service work with the MN-ACS Section. She served as Chair of the Education Committee from 1988-99, Section Chair in 2000-2001, and has been a Councilor since 1988

At the national ACS level, she has served on the Local Section Activities committee, and currently serves on the Meetings and Expositions committee and the Senior Chemists committee. She is the co-editor of the Senior Chemists Newsletter. She has also been active with the Minnesota Academy of Science, focusing on student activities—especially with the Winchell Undergraduate Research Symposium and Science Fair Judging.

Over the past year, Lynn has worked on reactivating the Minnesota Section Senior Chemistry group, with the aid of a small grant from the national office. That group now meets in alternate months over lunch. She is currently in dialogue with St. Paul School personnel in promoting the Science Coaches program for retirees who are interested in volunteer work with a high school chemistry teacher.

It is most appropriate that Dr. Lynn G. Hartshorn be recognized as the 2015 Lyle Hall Senior Chemist Awardee.

## Chemistry Olympiad

Jerry Kersten



On March 6<sup>th</sup> or 7<sup>th</sup>, 50 high school students from our section took the preliminary Local Chemistry Olympiad Exam. They were joined by over 15,000 students from the United States. From our 50 students, 14 were selected by their score to take the National Chemistry Olympiad Exam on April 18<sup>th</sup>. These 14 were among the 1010 students nationwide who took the 3-part exam which included two laboratory experiments.

The top twenty scorers in the National Exam were invited to a 2-week Study Camp at the Air Force Academy to prepare for the International competition. Shre Kapoor, a senior at Eastview High School in Apple Valley was one of those attending the camp. Only four of the students from the study camp were selected to represent the US at the International Chemistry Olympiad in Baku, Azerbaijan. Kapoor was not in that group.

Another Minnesota Section student, Merrick Pierson-Smela, The Blake School, received a certificate for High Honors for being in the top fifty students in the National Exam.

The following Chemistry Olympiad students were selected by their score to take the National Chemistry Olympiad Exam and were recognized at the May Awards Banquet: Shre Kapoor and Bryan Joung from Eastview HS in Apple Valley, Jenny Zhang and Michael Tang from Edina HS, Daniel Ibeling Home Schooled, Jackie Chen from Hutchinson HS, Nikhil Marda from John Marshall HS in Rochester, Isabella Rischall and Grant Halvorson from Lakeville South HS, Andrew Walker from Minnetonka HS, Chinmaey Kelkar and Merrick Pierson-Smela from The Blake School, and Leighton Zhao and Max Sigal from Wayzata HS.



## Winchell Symposium

### 2015 Report on MN-ACS Co-Sponsorship of Winchell Undergraduate Research Symposium

Wayne C. Wolsey, Liaison with Minnesota Academy of Science

The Minnesota ACS Section was a co-sponsor, with the Minnesota Academy of Science (MAS) of the Winchell Undergraduate Science Research Symposium held on the campus of the University of North-Western (St. Paul) on April 25, 2015. The ACS Section paid the registration fees of \$1800 for 18 undergraduates who displayed posters or made oral presentations.

All presentations were judged by a set of MAS-selected judges, and the following were recognized as particularly outstanding.

#### Best of Session Oral Presentation

Meaghan Bruening and Daron E. Janzen (Advisor), *Cyclometallated Palladium(II) Complexes with Fluxional Thiocrown Ligands*, St. Catherine University

#### Lee I. Smith Awards for Excellence in Chemistry

Sarah N. Elliott and Rollin A. King (Advisor), *Atomistic Interpretations of Optical Activity*, Bethel University

Matthew Henley and George Barany (Advisor), *Mechanistic Insights into the Zurcher-Weiss-Kuhle Synthesis of Dithiasuccinoyl (Dts)-Protected Amines*, University of Minnesota -Twin Cities

Estelle Tachago, Brontae Berkhoel, and Lyudmyla Stackpool (Advisor), *Synthesis and Crystal Structure of  $PB_{(8-x)}NA_2REE_x(VO_4)_6O_{(x/2)}$* , Minnesota State University-Mankato

#### Hiram E. Essex Awards for Excellence in Organismal and Physiological Sciences

Carl Anderson and Grant Anderson (Advisor), *Matrix Metalloprotease Expression in the Iron-Deficient Neonatal Rat Brain*, University of Minnesota-Duluth

Beshoy J. Botros, Sophia R. Larson, and Bruce M. Simat (Advisor), *Mercury Distribution in Eleven Organs in Neonatal Rat Pups Born to Treated Mothers*, University of Northwestern-St. Paul

MN-ACS Awards were presented in the May MINNESOTA CHEMIST.



## Mark Your Calendars for the Senior Chemists' September Lunch

Lynn Hartshorn

The September Senior Chemists' Lunch will be held Wednesday, September 16th at 11:30 am at the Green Mill Restaurant on Grand Avenue and Hamline, in the private room. All senior chemists are welcome. Non-seniors are welcome also, as well as guests. Come and join us if you were not able to attend one of these lunches in the spring. We are hoping for a 20 minute informal talk at this lunch to be given by Fred Gustafson. The title is "Dry Erase 101" and it will include demonstrations. This talk will be confirmed later. I would appreciate hearing from other seniors who would like to give short talks. Just send me an email to [lghartshorn@stthomas.edu](mailto:lghartshorn@stthomas.edu). I look forward to seeing you in September.



## Augsburg College – Chemistry Lab Manager

### Job Description

The Chemistry Lab Manager is responsible for the preparation and monitoring of all activities necessary for the safe and efficient operation of Chemistry laboratories, including development of laboratory curriculum. This position will regularly serve as a general chemistry and organic chemistry laboratory instructor, and works closely and collaboratively with the other chemistry faculty.

### Primary Responsibilities:

- Organize and maintain a safe and functional environment in the chemistry stockrooms and laboratories;
- Order chemicals, and maintain an organized and up-to-date chemical inventory with SDS records;
- Maintain a safe working environment and compliance with all state and federal safety regulations; conduct regular lab safety training for faculty and students; Serve as Chemical Hygiene Officer for the Chemistry dept, managing the hazardous waste, including packing, labeling, profiling, storing and coordinating the pick-up of materials;
- Oversee and document safety training of faculty and any students engaged in paid laboratory work for the Chemistry and Biology departments;
- Perform routine regular inspections of safety equipment and keep records of all inspections; write and submit all required OSHA reports;
- Help with set-up and operation of various basic instruments in the department; ensure all equipment is regularly serviced and any maintenance issues are handled in a timely manner;
- Set up and take down general chemistry experiments each week;
- Manage student workers in the Chemistry Department who assist with lab preparations and housekeeping;
- Teach some lab courses (depending on candidate credentials);
- Develop new experiments as needed; optimize existing experiments for safety, educational value, and minimize waste production.

### Required Skills



- Possess the ability to function independently and effectively resolve problems, meet deadlines, and produce quality work with attention to detail.
- Must have adequate knowledge of state and federal regulations pertaining to the collection, storage, and disposition of chemical wastes.
- Must possess adequate knowledge of state and federal safety regulations.
- Must have excellent communication skills and personal qualities for effective collaboration with faculty, staff, and students.
- Ability to work effectively and collaboratively in a diverse work environment.
- Be highly organized; Possess strong computer skills using Word and Excel.

#### **Required Experience**

- Bachelor's degree in Chemistry or related field required; Master's degree or PhD in chemistry preferred.
- Minimum of three (3) years of experience in either industrial or academic facilities, in analytical or organic chemistry
- Previous teaching experience preferred.

Augsburg College is an Affirmative Action/Equal Opportunity Employer. We welcome job applications from qualified individuals without regard to race, color, religion, sex, national origin, age, disability, ancestry, family care status, veteran status, marital status, or any other lawfully protected status. Minorities, women, disabled persons, and veterans are encouraged to apply. If you need a reasonable accommodation to complete our application process, please contact Augsburg College's Human Resources.

#### **Job Location**

Minneapolis, Minnesota, United States

#### **Position Type**

Full-Time/Regular

## **Chrom Tech, Inc. – Chromatography Technical Specialist**

#### **Company Description**

For over 30 years, Chrom Tech has been distributing chromatography instrumentation and supplies throughout the United States. Chrom Tech is an authorized distributor for leading chromatography manufacturers, including: Agilent, Hamilton, IDEX H&S (Upchurch and Rheodyne), Parker Balston, Sigma, Thermo Scientific, and many others.

#### **Chromatography Technical Specialist Overview**

The successful candidate will have a strong technical competence, theoretical and practical experience in liquid and gas chromatography. Customer contact is integral to the role and good customer relationship building skills, combined with a flair for communication are equally important. The chromatography technical specialist will respond to technical inquiries as well as develop a business plan to increase sales volume within existing accounts and increase market share by winning competitive accounts.

**Responsibilities:**

- Increase sales volume within existing accounts and market share by winning competitive accounts.
- Responding to technical queries, offering technical support, recommendation and quoting of products, advice in all areas of chromatography.
- Providing excellent technical support to our worldwide customer base, including: product support, quotes, samples.
- Maintaining excellent relations with our customers and suppliers at a technical and brand level.
- Maintaining current knowledge of new products from all suppliers.
- Assistance of marketing of key product brands and working to ensure their continued success.
- Representation of the company at trade shows
- Organize seminars at customer sites
- Maintaining CRM

**Qualifications:**

- Bachelor's degree in Chemistry, Biochemistry or related scientific field of study
- At least 3 years of experience in a laboratory environment working with HPLC, SPE, and/or Capillary GC. Hands-on method development experience is preferred. MS experience is a plus.
- Excellent teamwork and communication skills

**Location:**

Apple Valley, MN

**Salary:** Negotiable

To apply for the Chromatography Technical Specialist position, contact  
Michelle Iverson  
Chrom Tech, Inc.  
President  
michelle@chromtech.com  
952/431-6000 phone  
952/431-6345 fax

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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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