
The Minnesota Chemist

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Greetings from the Chair

Hello Everyone,
I hope your summer has been enjoyable so far. There will be announcements about the fall schedule shortly. It should be a fun fall! Enjoy the rest of the rapidly disappearing summer!

I hope to see you at our upcoming meetings.

Nick Schlotter
nschlotter@hamline.edu



MN ACS Meeting – Thursday, September 14, 2017

Title: 3M Tape ... Making the sticky come alive!

Speakers: Dr. Ramesh Kumar and Dr. Sarah Mullins, 3M Company

Location: Macalester College

Schedule:

5:00-6:00 pm – Executive Committee Meeting, 205 Olin-Rice Science Hall

6:00-7:15 pm – Social and Dinner, Smail Gallery Olin-Rice Science Hall

7:30-9:00 pm – Lecture, Davis Lecture Hall, Campus Center

Cost: TBD

Menu: TBD

Meal Ticket: When the cost is finalized, go to the "[Web Store](#)" link on the [MNACS](#) page to purchase meal reservations through PayPal.

Deadline: TBD

Abstract: Dr. Sarah Mullins will describe briefly construction of various kinds of sticky (pressure sensitive adhesive) tapes and their uses in industry, construction, automotive, health and consumer areas. Dr. Ramesh Kumar will describe various chemistries and chemical processes used in making pressure sensitive adhesives and release materials to unwind a sticky tape.

Speaker Bios:

Dr. Ramesh Kumar

Academic Record: Ph.D. in Inorganic Chemistry, Panjab University, Chandigarh (India), 1978; Ph.D. in Fluorine Chemistry with Dr. Jean'ne Shreeve, University of Idaho, 1981.

Professional Employment: 2015 American Chemical Society Fellow. A member of prestigious 3M Carlton Society (In the 113-year history of 3M, there have only been 179 scientists and engineers appointed to this group). 3M Corporate Scientist, highest technical position at 3M (2010 – present), Senior Division Scientist (2004 – 2010), Division Scientist (2000 – 2004), Senior Chemical Specialist (1994 - 2000), Research Specialist (1989 - 94), Senior Research Chemist (1987 - 89), Materials Resource Division, 3M. Assistant Professor of Chemistry (1981-87), Baldwin-Wallace University, Berea, Ohio.

Technical Contributions: My technical expertise is in the area of low surface energy materials used for Low Adhesion Backsizes for tapes and release liners. My contributions encompass silicone, hydrocarbon, and aqueous-based chemistries. The families of materials which I have developed provide unique differentiation to a large number of 3M's iconic pressure sensitive adhesive-based product platforms. Author of 55+ issued U.S. patents protecting these contributions and published 27 journal articles.

Volunteer Service to the ACS Community: Committee on patents and related matters and subcommittees (2012 – present), Local MN – ACS Awards Chair (2012 – present), Councilor and Alternate Councilor (2002 – present), MN- ACS nomination committee and Chair, MN –ACS student affiliate and student mentor (1997 – present), MN-ACS Chair, MN –ACS Executive Committee (1998- 2014).

My wife Kanta and I enjoy walking and hiking together and have hiked in China (17,000 ft.) and Machu Pichu (9500 ft.) and have vacationed in several places around the globe including Brazil, Peru, Alaska, and Caribbean.

Dr. Sarah Mullins

Academic Record: Ph.D. Chemistry, University of California, Berkeley (2001); B.A. Chemistry, Northwestern University

Professional Employment: 2017 American Chemical Society Fellow. 3M Company: Advanced Research Specialist (2015 – present), Research Specialist (2008 – 2015), Senior Research Scientist (2001-2008).

Technical Contributions: My technical expertise is inorganic synthesis, reaction kinetics and inorganic materials development. My academic work focused on design of organometallic compounds to control reaction mechanisms with small organic molecules. At 3M, I have worked on catalysts for adhesives, development of new inorganic materials used in a broad set of applications, including nanocomposites, biomedical detection, and abrasives.

Volunteer Service to the ACS Community: MN -ACS Councilor (2006 – present). MN-ACS Project SEED Coordinator (2011- present), ACS Committee on Minority Affairs (2017), ACS Committee on Chemistry and Public Affairs (2006-2016), ACS Committee on Communications and Public Relations (2011-2016), MN ACS Chair Government Affairs Committee (2004-2010), MN –ACS Executive Committee (2003- present).



May 2017 Award Banquet

2017 Minnesota Award Dr. Steven S. Hecht

Wallin Land Grant Professor of Cancer Prevention Steven S. Hecht of the Department of Laboratory Medicine and Pathology at the University of Minnesota-Twin Cities has been identified as the 2017 Minnesota Award recipient from the Minnesota Section of the American Chemical Society. Steve, who has been established at the University of Minnesota since 1996, is an outstanding Professor in the Masonic Cancer Center, holds professorial appointments in

the departments of Pharmacology and Medicine and Pathology and is a Graduate Faculty member of the Department of Medicinal Chemistry.

He received his B.S. degree in chemistry from Duke University in 1964. He subsequently did his Ph.D. and postdoctoral work at MIT with the later on mass spectrometry under Professor Klaus Biemann. He subsequently served appointments at Haverford College, the USDA and the American Health Foundation where he was appointed director of research in 1987. In 1996 he moved to Minnesota to head the Carcinogenesis and Chemoprevention program at the University of Minnesota cancer center.

His productive career has produced over 540 research papers and 240 book chapters. His collaborators have included dozens of Ph.D. students, visiting scientists, postdoctoral associates, laboratory technicians, undergraduate students, and numerous faculty colleagues. The careers of many toxicologists, medicinal chemists, mass spectrometrists, and cancer researchers have led through Dr. Hecht's labs.

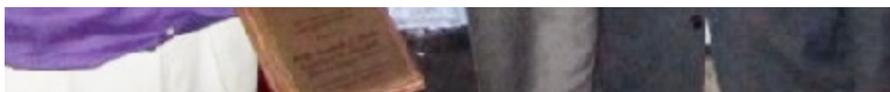
Steve is always pushing the boundaries of detection limits by using state of the art mass spectrometric techniques to analyze urine, blood, or DNA. His group is responsible for discovering many of the biomarkers that are currently used to assess exposure to tobacco-specific nitrosamines, poly aromatic hydrocarbons, and aldehydes. This includes being the first to discover acrolein and crotonaldehyde-derived DNA adducts and the nitrosamines NNN and NNK. The state of the art methods of detection coupled with the battery of biomarkers that Steve has discovered has led to powerful clinical and epidemiologic studies assessing the relevance to cancer risk in patients, both smokers and non-smokers alike. His contributions to carcinogenesis greatly impact those in and out of the field. The work that he did examining tobacco-specific nitrosamine levels in the urine of non-smokers exposed to secondhand smoke contributed to the legislation that led to the clean indoor air that we all enjoy now.

Steve is widely regarded as an expert in tobacco carcinogenesis. He served on many U.S. and W.H.O. committees evaluating various aspects of the tobacco and cancer problem, and has contributed to multiple U.S. Surgeon General Reports on tobacco and cancer. His reviews and book chapters in this capacity are considered the primary resources to understanding this science.

Steve has been very active in the ACS Division of Chemical Toxicology. This included serving as the division's chair and on the division's nomination committee. Currently he serves as the editor in chief of the ACS journal Chemical Research in Toxicology. He was elected as an ACS fellow in 2009 and an American Association for the Advancement of Science fellow in 2014.

In view of his productive scientific career at the University of Minnesota, it is most fitting that Steven S. Hecht be chosen as the recipient of the 2014 Minnesota Award by the Minnesota Section of the American Chemical Society. Congratulations Steve.





On the left, Dr. Stephen Hecht receives the 2017 Minnesota Award from Dr. James Wollack and Dr. Ramesh Kumar.

2017 Lyle Hall Senior Chemist Award

Judith L. Benham

Judith L. Benham has been chosen for the 2017 Lyle Hall Senior Chemist Award. Lyle Hall was a long-time Faculty member at 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 professionally and/or volunteer work since formal retirement.

Judy is a 1969 graduate of the University of Rochester and received a Ph.D. from the University of Wisconsin-Madison, where she collaborated with Professor Robert West. Her interest in polymer chemistry brought her to the 3M Company in 1976, where she started in R&D on dyes and organic material in photoconductors. Later she moved into polymeric materials. Having 3 patents, 3M recognized her talents as a supervisor, with an appointment as Research Supervisor in 1982. She later became a Research Manager, Technical Manager, and Laboratory Manager in the Specialty Chemicals Division and Technical Director in the Industrial Tape Division. Other Management positions as Technical Director or Business Director followed in the Divisions of Masking and Packaging, and Industrial Services and Solutions-- the latter from which she retired in October, 2003. She supervised operations which supported over \$1 Billion global sales. The 3M Human Resources initiatives and policies in which she focused include increasing diversity, career growth and advancement, and issues affecting employees and women.

Not surprisingly, 3M encouraged her participation in ACS activities. Early in her career, she became active with the ACS Division of Polymer Chemistry, of which she became Chair in 1990. Also, she served a term as Alternate Councilor from the Minnesota Section. At national ACS meetings, she organized and chaired two Symposia on *Chemical Reactions on Polymers* and a Workshop on *Materials Technology for Competitive Advantage*. From 1998 to 2010, Judy was connected with the Society Committee on Budget and Finance, serving as Chair from 2007-09. She was elected to the Board of Directors from Division V from 2004-09 and served as Chair of the Board for the latter two years. While on the Board, she was active in numerous committees including International Activities and Program Reviews. Among the significant accomplishments were the establishment of ACS International Chemical Sciences Chapters and the ACS International Center.

She received a Special Service Award from the Division of Polymer Chemistry and in 2010, she was made an ACS Fellow.

Since retirement, Judy has continued some activities with national ACS including teaching in an ACS Short Course on *Leadership in Science: Managerial and Technical Skills*. Locally, she has become a leader in the women-led ARCS (Achievement Rewards for College Scientists) organization, both in the Minnesota Chapter and the Foundation (<https://Minnesota.arcs.foundation.org/>). This group raises funds each year to support graduate and undergraduate students in STEM studies at top-ranked departments of leading institutions.

It is most appropriate that Dr. Judith Benham be recognized for her outstanding long-term volunteer work with her professional science organizations as the 2017 Lyle Hall Senior Chemist Awardee.





On the right, Dr. Judy Benham receives the Lyle Hall Senior Chemist award from Dr. Ramesh Kumar.

2017 Janet Tarino Volunteer Award David W. Blackburn

David Blackburn has been chosen for the 2017 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 years (2002-2009) membership with 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.

David is a 1985 graduate of Carleton College and received his Ph.D. in Inorganic Chemistry with Professor John Ellis at the University of Minnesota in 1992. During his graduate work, he was the recipient of a National Science Foundation Graduate Fellowship. He was a sabbatical replacement at Allegheny College for two years, and subsequently taught at Macalester College, Hamline University, North Hennepin Community College, Anoka-Ramsey Community College, Metropolitan State University, and Concordia University. Since 2008, he has been part of the Chemistry Department at Century College.

He is coauthor of six refereed papers on highly-reduced compounds of Group IV transition metals and several posters and oral presentations on synthesis of Ionic Liquids. A favorite talk is one on *Tripods, Piano Stools, and Sandwiches: Some Organometallic Chemistry of the Group IV Metals*. He is especially interested in Green Chemistry and development of new experiments for General and Organic Chemistry courses.

David is one of the more active volunteers in the Minnesota Section, being one of the most frequent participants in the Chemists in the Library (CIL) program-with over 70 of these monthly programs since 2005. In addition, he and Wayne Haag (1st Janet Tarino Award recipient) stock and store the CIL materials at Century College and see that supplies are delivered to the Library of the Month. He has also served on the Executive Committee on the MN ACS Section.

Outside of ACS, David has been very active with Girls in Engineering, Math, and Science (GEMS) and a similar program GISE, after-school programs in the Minneapolis public school district. He continues with these activities even though his two daughters are past Middle School. The annual Century College Chemistry Magic Show features David as one of the key demonstrators at this performance of chemical demonstrations laced with audience participation, silly music, and many jokes. In his "spare time", he volunteers with the Hennepin County Fix-It Clinic, and assists with a number of social causes.

In recognition of David Blackburn's extensive volunteer work with the MN ACS Section and other STEM-related functions, it is most appropriate that he receive the Janet Tarino Volunteer Award.



On the right, Dr. David Blackburn receives the Janet Tarino Volunteer Award from Dr. Wayne Wolsey.

2017 50 and 60 Year Members



On the left, the 50/60 year members receive their awards : from the left they are Dr. Richard Duerst, 50 years, (and Dr. Marilyn Duerst), Dr. John Stofko (50 years), Dr. Todd Williams (50 years), Mr. Thomas Hartzell (60 years) and Dr. Rod Olsen (50 years).



Chemistry with Kids



Arianna (Kooyman) Ahl

An event specially put on for parents who are also chemists to share their love of chemistry with their children while networking with other moms, dads, and professionals in chemistry!

Enjoy a fun filled afternoon with your children, grandchildren, nieces and nephews, or any other children in your life. The event will give both children and adults the chance to experience chemistry on both the micro and macro scale. The afternoon will have many fun and safe demos and activities your children can do on their own or with some help. There will be kids as atoms, **SLIME**, magic sand, *chemistry art projects*, a pool of *obleck*, **SNOW IN SEPTEMBER**, and **much more!** For a break, liquid nitrogen ice cream will be made and used to test the kids' knowledge of what they have learned. The event will close with a raffle for science related prizes so that the fun can continue at home!

When: Saturday, September 9th, 2017

1:00 – 1:10 pm: Arrival/Sign In

1:10 – 1:40 pm: Kids Activities and demos

1:40 – 2:00 pm: Liquid Nitrogen ice cream

2:00 – 2:30 pm: Kids Activities and demos

2:30 – 3:00 pm: Closing demo, future events announcement, and raffle

Where: Mendakota Park Picnic Shelter, 2171 Dodd Road, Mendota Heights, MN 55120

Ages: Target age: around 2-12 years old

Cost: Free

RSVP: Please email Arianna Ahl at amkooyman@gmail.com with the number of adults and children attending or with any questions by September 7th. Volunteers are needed and welcome!



**Volunteer
Opportunities**

Upcoming Chemists-in-the-Library Events

Philippe Buhlmann

August 26th, 1:30 PM at North East Library

September 16th, 1:30 PM at North Regional Library

October 21st, 1:30 PM at Minneapolis Central Library

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

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