

The Chemical Bulletin

A publication of the Chicago Section of the American Chemical Society



ACS Local Section
Chicago

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CHICAGO SECTION MEETING HOLIDAY PARTY with IOTA SIGMA PI FRIDAY, DECEMBER 13, 2019

Benedictine University / Lisle, IL

**5:30 - 9:00 p.m. | Student Poster Session
followed by Pre-Dinner Presentation,
Buffet Dinner and Main Lecture**

"APPLICABLE CHEMISTRY OF CHOCOLATE"

MELISSA TISONCIK

Director of R & D

Blommer Chocolate Company

Lecture Abstract: Melissa Tisoncik will bring us a "sweet" (and hopefully interactive) presentation about chocolate. The evening promises to be fun and informative.

PROGRAM

Benedictine University
5700 College Road, Lisle, IL 60532
(630) 829-6000 | www.ben.edu

Goodwin Hall, Room GN-411

- 5:30 - 6:15 Registration, Social Hour*,
and Poster Session
- 6:15 - 6:30 Pre-Dinner Presentation
(Benedictine student speaker)
- 6:30 - 7:15 Buffet Dinner
- 7:15 - 7:20 Introductory remarks
- 7:20 - 7:35 Iota Sigma Pi raffle results and
distribution of door prizes
- 7:35 - 7:40 Presentation of the Chair's
gavel to incoming 2020 Chair
- 7:40 - 8:30 Main Presentation

**Cash bar will be open 5:30-7:30*

Dinner Registration Deadline:
12:00 Noon on Tuesday, December 10

Lecture-only Registration Deadline:
12:00 noon on Thursday, December 12

Register at: <https://chicagoacs.org/meetinginfo.php?id=149&ts=1574378814>

\$30 - DINNER / \$15 for students

There is no charge for poster viewing or to attend the pre-dinner talk or lecture (without dinner)

Buffet Dinner Menu

Dinner Rolls, Garden Salad, Ice Water, Lemonade,
 Sliced Marinated Grilled, Flank Steak, Poached
 Salmon, Garlic Mashed Potatoes, Chef's Choice
 Seasonal Vegetable, Chocolate Sheet Cake

QUESTIONS OR NON-WEB RESERVATIONS?

Please contact the Section Office via phone (847-391-9091) or email (info@chicagoacs.org)

Check for updates at: <https://chicagoacs.org/meetinginfo.php?id=149&ts=1574378814>

Presenter Biosketch

Melissa Tisoncik is the R&D Director at Blommer Chocolate Company. She manages a national team that provides technical services and product development support for Blommer in North America, Canada and China. She received a B.S. in chemistry from Illinois Wesleyan University and a M.S. in food science from the University of Illinois. Her research centered on the impact of emulsifiers on fat bloom formation and sensory qualities in dark chocolate formulations. Additionally, Melissa has developed and taught courses on the chemistry of chocolate throughout Illinois to high school/adult levels with the Illinois Science Council. She is the AACT Chicago chapter chairperson, an alumna of the Student Outreach PMCA Program, a member on the NCA Young Professional Board, and a recipient of the NCA Future Leadership Award. She is passionate about chocolate, Chicago, cats, fitness and her family.

**** STUDENT POSTER REGISTRATION ****

Did you present a poster at a recent conference? Bring it out and present it again! Undergraduates can present posters describing their research, and the best one will win a prize! **** Register your poster here ****
http://chicagoacs.org/form.php?form_id=55&c=1

PARKING / Map & Directions

Goodwin Hall, Room GN-411

Benedictine University

5700 College Road, Lisle, IL 60532

A campus map can be found here: <http://www.ben.edu/about/upload/MapUpdate1016-web.pdf>
 Goodwin Hall is building 8 on the map. Parking is right next door in the garage marked building 7.

Off-Site Streaming of the 7:40 p.m. presentation will take place at **Purdue University Northwest**, Gyte Building, Room 240, 2200 169th Street, Hammond, IN 46323 (free parking). http://chicagoacs.org/images/downloads/Maps_of_venues/purduenw_map.pdf

TEACHERS! All K-12 Educators Can Receive Continuing Education Credits For Attending Our Meetings. Obtain Your CE Form at Registration Desk.

Chemical Reactivity is NOT Unexpected!

A "SAFETY FIRST" MINUTE

At its heart, the "Safety First" series of reports in *The Chemical Bulletin* is about sharing—sharing stories so as to increase safety awareness and promote and maintain a culture of safety as a core value of the American Chemical Society. Sharing stories can help us learn from one another and may even prevent injury, damage or harm from unexpected chemical incidents. Today's story was provided by a Chicago Section board member at last month's meeting. The board member forwarded an article that had recently appeared in [Chemical and Engineering News](#) (C&EN) concerning the risk of explosion when working with sodium hydride in polar, aprotic solvents such as dimethylformamide (DMF) and dimethyl sulfoxide (DMSO).

What was perhaps most "unexpected" (pun intended) about the C&EN article is that the hazards and risks in these reactions of sodium hydride are neither unknown NOR unexpected. Despite literature reports of runaway heat and gas generation, as well as explosions, dating back more than 50 years, chemists continue to publish procedures using these reagent and solvent combinations **without** mentioning the known hazards.

The C&EN article raises important questions. When exploring either new OR familiar examples of chemical reactivity in the lab, what resources are available to

warn us of the dangers of "unexpected" reactions that may, in fact, be well known? Published procedures may NOT be sufficient! Due diligence requires **independent** hazard and risk assessment.

Safety Data Sheets (SDS) are, of course, an obvious starting point—Section 10 in any SDS, "Stability and Reactivity," summarizes key information for further research. The information in this section, however, is usually just a summary or, indeed, a list of incompatible classes of chemicals, and seldom provides either the context or details needed to predict when extra vigilance or special precautions may be required.

[PubChem](#), a public, open, easily searchable database maintained by the National Institutes of Health (NIH),



provides comprehensive information, **with references**, concerning the properties, reactivity, toxicity, safety, and uses of thousands of chemical compounds. Information in the PubChem system has been collated from a wide variety of authoritative chemistry safety resources, including:

- [Bretherick's Handbook of Reactive Chemical Hazards](#), now in its 8th edition
- [Sax's Dangerous Properties of Industrial Materials](#)
- [CAMEO Chemicals](#), a compendium of emergency management information supported by the National Oceanic and Atmospheric Administration (NOAA), and the
- [Pistoia Chemical Safety Library](#).

Make PubChem your first stop when preparing a hazard and risk analysis for any planned experiments!

The success of "Safety First" depends on all of us and on our willingness to share stories of our achievements as well as any unexpected incidents or failures. Please continue to support this outreach effort of your local ACS Chicago Section.

Respectfully submitted,

Irene Cesa

Know Your Hazard (Pictograms)

Shown are pictograms for explosion and flammability hazards, from the Globally Harmonized Classification (GHS) and Labeling of Chemicals developed by the United Nations.



A Message from the Chair

Greetings to everyone from Chicago ACS! Thus far this has been a very eventful year for us, and I would like to take this opportunity to inform the Chicagoland chemistry community of recent successes and developments.

The number of folks serving on our Board of Directors and various committees is expanding, and we are proud to have recruited a dozen new volunteers who are serving in associated roles to bring fresh perspective and new energy. In doing so, we have purposefully reached out to women chemists in the Chicago ACS community, and this initiative has diversified us considerably as women constitute the majority of our new volunteers. To aid in orientation and retention on our board and committees and to spread an aura of welcome, folks new to our operations have each been assigned a personal mentor who is a veteran, senior member of the board. These mentors engage our new volunteers in explaining policies and procedures and informing them about our annual cycle of activities.

In the May, 2019 issue of The Chemical Bulletin, I stated the following: "We have made it a goal for 2019 to engage in much needed strategic planning to ensure that Chicago ACS can best fulfill its long-term mission - to encourage the advancement of the chemical sciences and their practitioners. Our sincere hope is that in doing so we will be even better situated to partner with local industrial and academic institutions to support the Chicagoland chemistry community and to develop a culture that gives back to our young chemistry students, while promoting diversity, inclusion, safety, and ethics in all we do."

In this spirit, at our November 14 board meeting, a new modernized and streamlined board structure was unanimously approved by the board, along with the associated changes to our Policy Declarations. Five divisions will now compose the Chicago ACS board - Administration, Communication, Education & Outreach, Membership, and Science. Our various committees have been grouped within this division structure where common themes, goals, and purposes align. Within this structure, we have eliminated "committees of 1," where

goals are tough to achieve due to a deficiency of people assigned to them. We have purposefully included a means for succession planning for our Committee Chair and Division Chair roles and a mentoring strategy for the people working within them. This was the result of many months of diligent discussions by our Strategic Planning Team - Susan Shih, Sherri Rukes, Paul Brandt, Bernie Santarsiero, Josh Kurutz, Ken Fivizzani, Mark Cesa, Mike Koehler, and Russ Johnson. This new structure will be instituted in January of 2020, hopefully bringing us newfound efficiency, impact, and effectiveness.

Under the leadership of our Chair of the Environmental and Lab Safety Committee, Irene Cesa, we have adopted a new culture to promote laboratory safety using a "Safety First Minute." This entails a very brief presentation at all our board meetings and program meetings that educates on a safety-related item. The information contained in these presentations has been included each month in The Chemical Bulletin. Considering that ACS advocates for the safe practice of chemistry across disciplines, at every age, and in every organization, we are delighted by the positive reception from the Chicago ACS community regarding the Safety First Minute.

We continue to maintain a record of accomplishments that demonstrates our impact. We are honored to be the recipients of two ChemLuminary Awards in 2019 for Most Innovative New Activity or Program and Local Section Government Affairs. Many thanks go to Josh Kurutz and Mike Koehler, who have been the primary drivers behind earning this recognition. Josh started our creative new "Who Is This?" column in the Chemical Bulletin and activity at program meetings to identify individuals in the photographic archives of the section. Mike collaborated with the Chemical Industry Council of Illinois in a state advocacy workshop to represent the interests of the chemical industry in the state of Illinois. This was followed by legislator meetings.

Our monthly program events have been well attended and we have been blessed by a variety of excellent program speakers. We are thankful to all of

the institutions who have kindly hosted our meetings. We especially thank Northwestern University for hosting our National Chemistry Week activities, in which many volunteers from a variety of organizations - academic, industrial, and government - came together for an excellent public outreach event around the theme "Marvelous Metals." Sherri Rukes, Co-Chair of our High School Education Committee, took on the lion's share of the work in devising a brilliant array of family-friendly chemistry demos to exhibit.

As I will always gladly state, all of our events are excellent networking opportunities and give exposure to a vibrant Chicago chemistry community. I highly encourage any Chicago ACS members to attend one of our monthly programming events. In particular, we are always reaching out for participation by faculty and student teams from our regional colleges and universities. We hold monthly student poster sessions, and students have the opportunity to serve as presenters in brief pre-dinner talks.

As always, please consider joining one of our many committees, whose work includes educational outreach at all levels, promotion of diversity, interaction with government officials, implementation of technology to promote chemistry, community activities and more. A full list of our committees and their descriptions can be found at <https://chicagoacs.org/>. None of our work could be possible without the energy of our volunteers and willingness of our partner organizations, and fresh ideas are always most welcome. I highly encourage you to contact me directly at tmarin@ben.edu if you would like us to work with you or even have your institution host a monthly meeting.

Tim Marin, Chicago Section Chair

Meet the Protectors of Vacuum Pumps, Systems and the Environment!



Oil Mist Eliminators



Vacuum Inlet Traps



Oil Filtration Systems

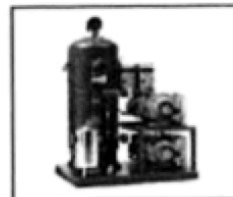
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- ☐ MV vacuum inlet traps protect your vacuum pump from corrosive and abrasive elements and can be tailored to your specific application requirements.
- ☐ Oil filtration systems remove acids, corrosives, and contaminants from pump fluids thus reducing maintenance costs and prolonging pump life.

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SIDNEY HARRIS CARTOON

Cartoons often have many possible levels of interpretation and extrapolation. As I look at this Sidney Harris cartoon, I see many possibilities. One is as follows: The cartoon shows a department chair (far right) accompanying the university provost (far left) of international fame for his analysis of the humor in Anton Chekhov's short stories,

presenting a plaque to a chemistry professor in recognition of her election to the National Academy of Sciences. The citation reads "In recognition of her seminal computational studies on the rheological properties of elastic polymers under stress: Why bubblegum bubbles break." The department chair wonders if he will be recognized for the elaborate custom apparatus that he designed to confirm the computational studies.

~Yvonne Connolly Martin
Abbott (retired)



Funded by the ACS Innovative Grant Program and hosted by the Division of History of Chemistry, eminent cartoonist Sidney Harris has agreed to provide 12 previously unpublished cartoons to ACS Local Sections for use in their news-letters and web pages beginning in January 2019. Many of his cartoons are available in the book "EUREKA! DETAILS TO FOLLOW - Cartoons on Chemistry" (2018), Sidney Harris Publisher.



From the Editor's Desk

Dear Readers,

I hope you enjoy this last issue of The Chemical Bulletin for calendar year 2019. Contributors to these pages include Irene Cesa, Tim Marin, Paul Brandt, Fran Kravitz, Monica Busza, Yvonne Connolly Martin, Sidney Harris, Melissa Tisoncik, Andrea Twiss-Brooks and the program team, our bulletin advertisers. My thanks also to Gail Wilkening who manages the Chicago Section office and keeps communications flowing.

With the new year approaching, it might be a good time to send me your comments or questions about the bulletin, in the spirit of continual improvement and focusing on what is important to our readership. For example, one professor mentioned to me recently that he misses having a printed copy to read, as the monthly email messages containing the bulletin can all too easily slip down into the abyss of one's inbox, not to be found again! And who knows, perhaps we could feature letters to the editor as in years past.

Wishing everyone a safe and enjoyable holiday season! Margaret (Peggy) Schott

Remembering Charles Earl Cannon

January 30, 1946 - October 31, 2019

Charles Cannon, my dear friend, a long time Chicago Section ACS member, brilliant chemist/professor and a very gentle soul passed away on Thursday, October 31. He will be missed by all that knew him, and it will be difficult to fill the void he has left. Charles was active in his professional life up to the day of his death.

Charles was born in Sylacauga, Alabama which is where the nearest hospital was to Vincent, Alabama where his family lived. He was the second eldest in a family of six children, two girls and four boys.

Dr. Cannon was the first in his immediate family to go into science. Charles was always interested in science and mathematics as a child and was engaged in school science fairs. The study of science was reinforced by his first cousin. Charles earned his bachelors in chemistry with great honors at Alabama A&M University in 1968. He went on to study at the graduate level at Vanderbilt University from 1968 to 1969, working in the area of carbohydrate chemistry. In 1969, he left Vanderbilt and enrolled at the University of Wisconsin in Milwaukee, where he earned his Ph.D. in Physical Organic Chemistry in 1974.

Charles went to work in 1974 for Amoco Research Center in Naperville as a Research Chemist in the Petroleum Additives Research Laboratory. He rose to rank of Lab Supervisor of the Micro-Chemistry Analytical Lab. In 1985, he left Amoco and went to work for the West Aurora School District 129. This was the start of Dr. Cannon's career as an educator. During that year, he joined Nobel Laureate Leon Lederman as one of 12 founding faculty members of the Illinois Mathematics and Science Academy (IMSA). He remained at the IMSA until 1992 and then went on to teach at Columbia College in Chicago. Dr. Cannon was chair of the Science and Mathematics Department at Columbia until 2006. He was a Professor of Distinction at Columbia College until his retirement last year.

In 2018, Charles celebrated his 50-year anniversary as an ACS member. He joined ACS as a student affiliate under the advisement of his organic

chemistry professor, Dr. Richard Evans. Dr. Cannon is an ACS Fellow (class of 2013), was one of the ten Chicago Section Councilors, and was Chair of the Minority Affairs and Senior Chemist Committees

until his death. His activities in the Chicago Section included roles as Vice Chair, Secretary, Director, Alternate Councilor, Chair of the College Education, Gibbs Awards, Employment, Policy, Tellers, House, Awards, Nominating, Hospitality and Safety Committees. Charles was Chair of the Chicago Section from 1982-83. He was very active on the steering committee of the Illinois Sections of the American Chemical Society State Fair project, inviting and organizing University/College chemistry departments throughout the state to have their students participate in the hands-on activities and demonstrations in Section's tent.

Active at the national level, Charles served on the Committee on Economic & Professional Affairs (Survey Subcommittee) and on the Local Section Activities Committee. He was elected to the Committee on Nominations and Elections at the last National ACS meeting. Dr. Cannon was also an ACS Career Consultant and Career Workshop Presenter. Besides the ACS, he was active with American Association of University Administrators, American Association of Higher Education, and National Association for the Advancement of Black Chemists and Chemical Engineers.

Dr. Cannon was extremely active in volunteering and serving in leadership positions for his undergraduate institution's alumni association in his free time. He was also very involved in music, both in his church choir and with the National Association of Negro Musicians. Charles never married but his family of over 16 nieces and nephews and their children was the most important thing in his life.

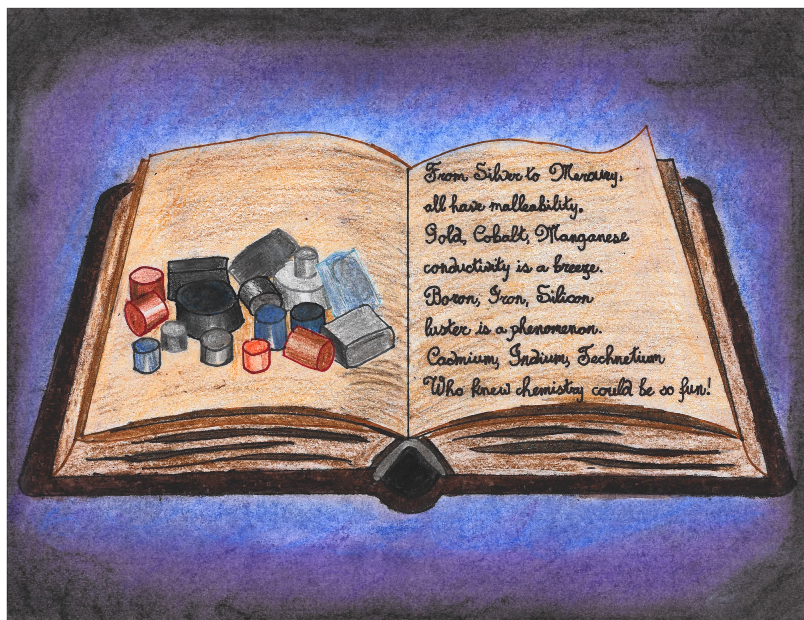
Fran Kravitz



Celebrating Chemistry through Art and Poetry

As part of National Chemistry Week (NCW) each year, ACS sponsors an Illustrated Poem Contest for K-12 students. This year's theme was "marvelous metals". The original artwork and poetry shown here are the creation of **Monica Busza**, a senior at Lyons Township High School. Monica's colorful contribution was selected as the winning entry in the high school division in the Chicago area. Monica is a National Merit Commended Student and also participated as a member of the Lyons HS team at the Illinois Science Olympiad. Congratulations Monica!

For national winners see: <https://www.acs.org/content/acs/en/education/outreach/ncw/plan-an-event/illustrated-poem-contest/winners.html>



From Silver to Mercury,
all have malleability.
Gold, Cobalt, Manganese
conductivity is a breeze.
Boron, Iron, Silicon
luster is a phenomenon.
Cadmium, Indium, Technetium
Who knew chemistry could be so fun!

Bulletin Information

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NOTICE TO TEACHERS

The Chicago Section of ACS is an ISBE provider for professional development units for Illinois teachers. Teachers who register for monthly meetings will have the opportunity to earn CPDU's.



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From the Bulletin archive: December 1918

WOMAN'S PLACE IN CHEMISTRY

The great conflict whose close we are witnessing has revealed woman as a potent force in chemical lines.

It is for women, however, to indicate in what capacities they can best serve their country. The problems confronting them will be many. Will they wish to be known as lady chemists? Will they accept the same ethical code in employment as the man? Do they desire to become and remain analysts or will they show a special aptitude for research? Is the teaching of chemistry to be their forte?

These and kindred questions need solution. The place for discussion of these matters is in the American Chemical Society. A start will be made at the December meeting.

From the Bulletin archive: March 1919

MAJORITY RULE

We all believe in the rule of the majority. Many of us will go even further and subscribe to the principle that not only should the majority rule, but that there should be no usurpation of power by a minority when the majority is too gentle to exercise its suffrage rights in the protection of its own interests.

Smoking at the monthly meetings of the Chicago Section of the American Chemical Society is a distinct usurpation of power by a minority, generously and patiently tolerated by a large majority. The attendance at our meetings is steadily growing. The careful work of the past years in building up the interest in chemistry is beginning to bear real fruit. We no longer are anxious lest a speaker at our monthly meetings be greeted with empty chairs. Why then should we undo this work by trying to "smoke 'em out"?

Let us resolve, each and every one as individuals, to abolish smoking at monthly meetings of the Chicago Section. Let us not wait until conditions become so bad that legislation is imperative.

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The mission of the
Chicago Section of
the ACS is to
advance the
chemical sciences
and their
practitioners for the
benefit of Earth and
its peoples.



2019 FOOD AND TOY DRIVE

We will be collecting nonperishable food items (no glass containers) for charity at the **December Holiday Party** once again. The food will be donated to the local **Loaves and Fishes Community Pantry** for distribution. Loaves & Fishes Community Pantry is a community-based, non-profit organization established to provide food and personal care essentials to residents in need.

CASH AND CHECKS ARE WELCOME TOO!

For every \$1.00 donated the pantry purchases \$10.00 worth of food.

We will also continue our toy drive to collect children's toys for toddlers to 12 year olds. The toys will be donated to the Adoption Center of Illinois at Family Resource Center in Chicago, an adoption agency providing services for couples seeking to adopt children in the US or overseas. They also provide services for birth parents and foster children. The toys are used for birth mothers who have placed children for adoption or who are considering a placement and are often raising other children. These toys provide joy to children whose birth parents are struggling and do not have extra money for the holidays.

Please open your heart to these two programs and bring a nonperishable food item and a new toy to the holiday party. Please, do NOT donate any clothing. Thank you for your generosity.

UPCOMING ACS SECTION EVENTS

FRIDAY, DECEMBER 13

Monthly Chicago ACS Section Meeting
Holiday Meeting on Chocolate Science & Technology to be held at Benedictine University.
Interactive Presentation by Melissa Tisoncik,
Director of R&D at Blommer Chocolate Co.

PROPOSED CHICAGO ACS SECTION MONTHLY MEETING DATES FOR 2020

FRIDAY, JANUARY 24
FRIDAY, FEBRUARY 21
THURSDAY, MARCH 19
FRIDAY, APRIL 24
FRIDAY, MAY 15
FRIDAY, JUNE 26

OTHER EVENTS

Sunday, February 9, 2020 - Family Open House at Fermilab

Friday, February 22, 2020 - DuPage Area STEM Expo
10:30 am - 3:30 pm at Illinois Tech Rice Campus

March 1-5, 2020 - PITTCOON at McCormick Place

MARCH 22-26, 2020 - National Meeting in Philadelphia

APRIL 19-25, 2020 - Chemists Celebrate Earth Week 2020