

The Detroit Chemist



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You are invited to join the Executive Committee!

Did you know that the executive committee is now meeting monthly via Zoom? It is now easier than ever to get more involved with the Detroit Local Section as you now can participate from your living room. The executive committee meets the second Tuesday of the month. All local section members are welcome to attend our executive committee meetings. We do plan on meeting in person again once it is safe to do so but will continue to use Zoom once in-person meetings resume. For the Zoom details please reach out to our Section Chair, Amy Hamlin (amy.m.hamlin@gmail.com).

2021 General Members Meeting

Have you been considering getting more involved with the ACS? Do you want to learn more about what is going on in the local section? Our 2021 General Members meeting will be held via Zoom on May 11th. Come learn about events we are planning and how you can get more involved! All local section members are welcome to attend. For the Zoom details please reach out to our Section Chair, Amy Hamlin (amy.m.hamlin@gmail.com).



ACS Local Section
Detroit

Cassie Ward, Editor
ward@wayne.edu



American Chemical Society – Detroit Local Section – Younger Chemists Committee Presents:

Brewing Chemistry

Detroit, Michigan

Brewing Chemistry is a monthly lectures series. These informal talks are designed to make science fun and accessible for all.

ATTENTION - This is a Zoom presentation!

You must pre-register to attend.*

To register, please contact

Meghann at [313.993.1259](tel:313.993.1259) or meghann@brewingchemistry.com

Tuesday, May 18th, 2021 at 7 PM

The Science of Toilet Paper

Presented by: Tori Beckett, Vice President, Great Lakes Tissue, Cheboygan, MI

Great Lakes Tissue is a 100% recycle tissue production operation specializing in a de-poly pulping process from plastic coated raw materials and providing parent roll and converted products. Tori will be giving an overview of markets, raw materials, mechanical processing, energy, and environmental aspects of the papermaking process.

About:

Tori Beckett is an MSU Alumnus with a BS in Zoology, a BS from LSSU in Fisheries and Wildlife Management, and a Masters from Ferris in Business Management. She is the Vice President at Great Lakes Tissue, a producer of 100% recycled toilet paper and tissue products.

www.brewingchemistry.com



Facebook: Brewing Chemistry
Instagram: @BrewingChemistry
Twitter: @Brewingchem

NOMINATIONS FOR 2022 SECTION OFFICERS AND COUNCILORS

The Section's Nominating Committee has selected a slate of candidates to run for the Detroit Local Section 2022 officer election.

Slate of Nominees for Fall 2021 Election (2022 Officers)

Chair:	Matt Smith (current Chair-Elect)
Chair-Elect:	Sue White
Treasurer:	Sean Hickey
Secretary:	(vacant)
Councilor:	Mary Kay Heidtke
Alt. Councilor:	Denise Grimsley

Nominations may also be made by petition. Section members interested in running for an office can submit a Petition to the current Section Secretary (ward@wayne.edu) stating the office for which they wish to run. The Petition must be endorsed by 1% of the Section Membership (i.e., 13 members) and sent to the Section Chair, Amy Hamlin, postmarked on or before July 31, 2021. For more information or for help in obtaining the necessary endorsements, please E-mail the Section Chair, Amy Hamlin at her E-mail address: amy.m.hamlin@gmail.com.

2021 U.S. National Chemistry Olympiad Detroit Local Section Competition

On Saturday, March 27, 116 students representing 21 area high schools completed the virtual Local Section exam for the US National Chemistry Olympiad. The two-hour exam is the first step in the process of selecting the four-person team to represent the United States in the International Chemistry Olympiad (IChO). The challenging exam consists of sixty multiple-choice questions covering a wide range of topics.

The top eleven students on the Local Section exam were selected as Nominees of the Detroit Section; the next nine students were named as Runners-up. Through the generosity of the Detroit Section the Nominees received cash prizes of \$150 and the Runners-up received \$75. The complete list of Nominees and Runners-up appears below. The high scorer on this year's exam was William Meng of Novi High School. Detroit Country Day School (Marc Drougel, Chemistry

teacher) was recognized with the 2021 Olympiad Achievement Award for having compiled the highest average score on the Local Section exam.

The eleven nominees joined one thousand other students nationwide for Part I (multiple choice) of the online National Exam on April 17. The top 200 subsequently completed Part II (free response) of the National Exam on April 24. As of this writing scores on Part I and Part II have not been released. Based on their results on the two parts of the National Exam, 20 students will be chosen to attend the virtual Olympiad Study Camp to prepare for the IChO.

The Chemistry Olympiad program is organized nationally by Education Division of the American Chemical Society, and locally by Dr. Mark DeCamp of the University of Michigan-Dearborn.

NOMINEES

Name	Hometown	High School	Teacher
Brian Ankrapp	Royal Oak	Univ. of Detroit Jesuit H.S.	Priscilla Oshikiri
Alex de la Iglesia ⁺⁺	Howell	Howell High School	Angie Kynast
Austin Feng	Troy	Cranbrook Kingswood	Allwyn Cole
Samuel Lee	Novi	Novi High School	Rand Helmkamp
Jiaxu Liu	Troy	Detroit Country Day School	Marc Drougel
William Meng	Novi	Novi High School	Rand Helmkamp
Atharv Relekar ^{##}	Troy	International Academy-East	Roger Winn
Alex Xu ⁺	Troy	Troy High School	Hevel/Moore
Sonnet Xu	Troy	Troy High School	Hevel/Moore
Himani Yarlagadda	Northville	Detroit Country Day School	Marc Drougel
Arthur Zhao	Northville	Northville High School	Richard Cole

RUNNERS-UP

Name	Hometown	High School	Teacher
Emily Chen	Troy	Troy High School	Hevel/Moore
Nikhil Daniel	Novi	Novi High School	Rand Helmkamp
Poulomi Dey	Troy	Athens High School	E.
Beregszaszy			
Riya Dutta	Troy	Troy High School	Hevel/Moore
Nicholas Frieler	Farmington Hills	Detroit Country Day School	Marc Drougel
Asim Handy	Bloomfield Hills	Detroit Country Day School	Marc Drougel
Faraz Rahman	Troy	Detroit Country Day School	Marc Drougel
Zaid Siddiqui	Bloomfield Hills	Detroit Country Day School	Marc Drougel
Wenbo Xu	Novi	Novi High School	Rand Helmkamp

^{##} Nominee 2019, 2020

⁺⁺ Runner-up 2019, Nominee 2020

⁺ Runner-up, 2019

Nominees and Runners-up were selected based on their score on a sixty-question multiple choice exam. National Rule #4: No more than two students per teacher or per high school may be nominated to take the National Exam.

2021 Virtual International Awards Event

When: Thursday, May 27, 2021

Time: 6:30

Speaker: Cathy Cobb, PhD
"Those Marvelous Ladies of Science"

RSVP: Contact Amy Hamlin at amy.m.hamlin@gmail.com for the Zoom link

American Chemical Society – Detroit Local Section and the Chemical Institute of Canada – Essex-Kent Local Section will be honoring students and members during the Virtual International Awards Event. We will recognize Chemical Institute of Canada Student Awards, Detroit Section Undergraduate Student Awards, and our ACS 50, 60, and 70 year ACS members. Please join us for a presentation by Cathy Cobb prior to the award ceremony.



Thursday, May 27th, 2021 at 6:30 PM Those Marvelous Ladies of Science

Presented by: Cathy Cobb, PhD

Women are never far from the action in science; in fact, they often form the front lines. In this hour-long survey I begin with En Hudu' Anna, mathematician and astronomer, whose name was carved in stone ca. 2300 BCE and then highlight the contributions of ancient Greek, African, and Asian female artisans, scholars, and healers. I move rapidly to the female proto-scientists of the European Middle Ages – the witches and alchemists – and then dwell a bit on these fascinating, indomitable souls before I bring women of technical talent out of the shadows of history – Kepler's mother; Galileo's daughter; Lavoisier's, Galvani's, and Maxwell's wives – and even Voltaire's lover. I end with a summary of modern European, American, and Asian Nobel-prize winning women and women who perhaps should have won. I conclude that – recognized or not – women of dedication and perseverance always were, and always will be, present in science. These women pursue science – even at social and physical peril – not for gain or glory, but because they can do no other.

Cathy Cobb is the author of two histories of chemistry—*Creations of Fire* and *Magick, Mayhem, and Mavericks* and three elucidations of chemistry—*Joy of Chemistry*, *Crime Scene Chemistry*, and *The Chemistry of Alchemy*.

Letter from our Speaker!

Greetings! My name is Cathy Cobb, and I am a chemist. I received my undergraduate degree from Reed College, Portland, Oregon, and my graduate training at UC Santa Barbara, California. I taught at California State University, Los Angeles, before moving to South Carolina with my husband and our first son. I worked at Savannah River National Lab until I found I needed more flexibility with our then *three* sons, at which point I moved to Augusta State University. While at ASU I enjoyed a lively, well-funded research program based on a previously unreported oscillating reaction.

However, when my sons entered middle school, I found I needed even more focused time at home; yet, I wanted to preserve my professional life while keeping the home fires burning. Fortunately, I had enjoyed some success in fiction writing, so I decided to try nonfiction. My first book, written with Harold Goldwhite of CSULA, was well received, and I was off and running.

Ultimately I produced two histories of chemistry—*Creations of Fire* and *Magick, Mayhem, and Mavericks*—and three elucidations of chemistry for the lay reader, complete with demonstrations: *Joy of Chemistry*, *Crime Scene Chemistry*, and *The Chemistry of Alchemy* (perhaps my favorite to date). Based on these works I have been invited to deliver talks at ACS national, ACS locals, Sigma Xi, Royal Society of Chemistry, and other meetings in over dozen different states and have asked to give talks on topics as diverse as writing for a nontechnical audience, forensic science for authors, heroes of the quantum weird, and, of course, my adventures as an alchemist.

Therefore, I am delighted to (virtually) come to Detroit to speak on a favorite topic of mine – *Those Marvelous Ladies of Science*. And they *are* marvelous. These dauntless women stand as symbols of courage, truth, and determination for us all.

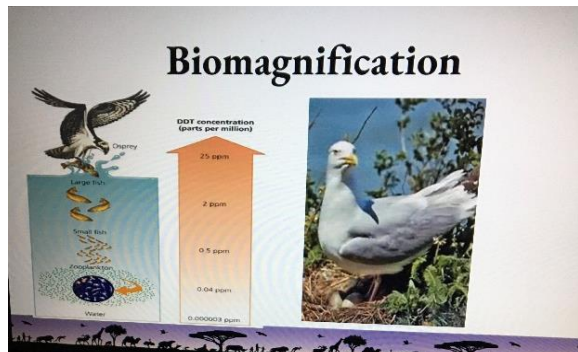
And, oh yes, my sons turned out fine.

Cathy Cobb

cathyc@usca.edu

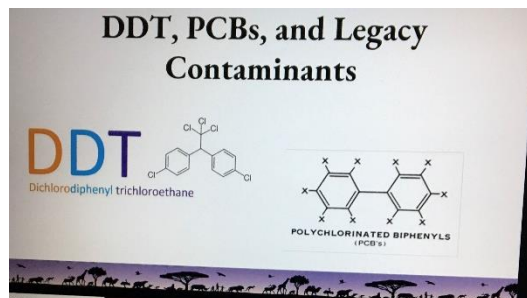
Brewing Chemistry: Reflections

With the pandemic lasting longer than any of us ever thought, normal social gatherings had to become virtual events. Brewing Chemistry quickly moved to the Zoom platform, an adjustment for many speakers and attendees. However, the events have been met with high attendance and sparked many interesting conversations on a variety of topics. We would like to reflect on the last two events.



Taking Action for Birds

- Reduce or eliminate pesticide use in your backyard and garden
- Purchase plants that are labeled pesticide and neonicotinoid free
- Eliminate the use of rodenticides and seek alternative sources for rodent management



March's Brewing Chemistry lecture, *Beyond DDT: Pesticides, Pollinators, and Population Declines*, was presented by Erin Parker of the Field Conservation Office and Nature Centers Manager of the Detroit Zoological Society. The presentation was about how chemicals that help humans end up hurting birds and other systems of life. She was informative and truly passionate about her work. I loved how she ended the talk with preventative actions we can take at home.

Changes in Marihuana Laws in Michigan

Metro Detroit Forensic Laboratory
Controlled Substances Unit

Kimberly Venuk

April's Brewing Chemistry presentation, *Legislation of Marihuana*, was presented by Kimberly Z. Venuk who is a forensic scientist with the Michigan State Police. She has 18 years of experience and has also worked as a crime scene photographer.

Controlled substances are ranked in decreasing order from 1 to 4 on their potential for dependency and abuse. Marihuana is still considered a schedule 1 controlled substance according to the state of Michigan and the federal government. Michigan's laws passed by its voters regulate how much plants or plant


materials one can legally possess. Additionally, now recreational plants can be combined with caregiver status (medical), thus increasing the number of legally allowed plants.

Prior to some of these laws, the testing was all qualitative: to confirm the drug suspected was indeed a controlled substance. Now, the Michigan State Police quantifies the drug, as the DEA has always done. This is because THC in CBD products must be $< 0.3\%$. The Michigan State Police follow a semi-quantifiable method that was validated. After watching this presentation, it is easy to see that the legislation was ahead of the development for testing.

Controlled Substances Unit

Analyze samples for the presence or absence of controlled substances

- Marihuana, cocaine/crack, heroin, pharmaceutical/ clandestine tablets and steroids, etc.




Perform wet chemistry

- Microcrystalline test
- Color test

Further analyze utilizing instrumentation and reference materials

- Gas Chromatograph – Mass Spectrometer (GC-MS)
- Fourier Transform – Infrared Spectrophotometry (FTIR)
- GC/IR
- TruNarc



Semi-Quant Method

- Why not quantify THC to exactness?
- We only need to test for marihuana not hemp.
- The method used provides for a yes or inconclusive answer.
- Difficult matrix: moisture in plant material, age of plant, freshness, mold, insects
- Representative sample of leaves, stems, flowers.
- Uncertainty of measurement for balances and pipettes.
- Conversion of THCA to THC and CBD interference (>20%)

Upcoming Events

DATE	PROGRAM	PRESENTER(S)	LOCATION	TIME
MAY 18 TH	Brewing Chemistry	Tori Beckett	Virtual	7 PM
MAY 27 TH	International Awards Event	Cathy Cobb	Virtual	6:30 PM
JUNE 6 TH -9 TH	Great Lakes Regional Meeting		Virtual	
NOVEMBER 4 TH	Anachem	Various Speakers	Livonia, MI	TBD
NOVEMBER 13 TH	Girl Scouts Chemistry Day	Southeast Girl Scout Troops	TBD	TBD