

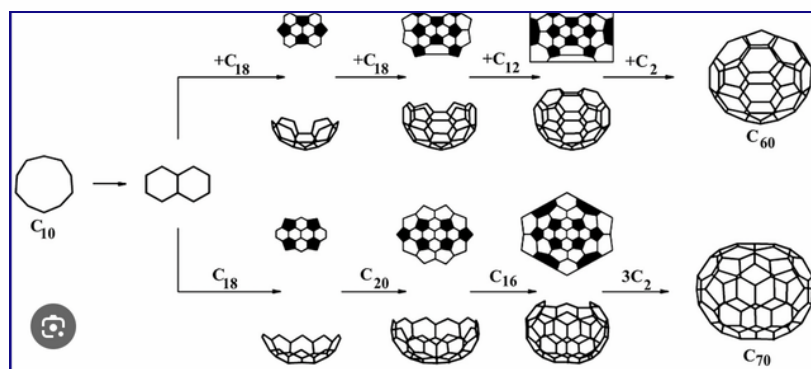
# Mid Hudson Chemist



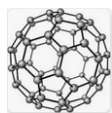
ACS Local Section  
Mid-Hudson

THE OFFICIAL NEWSLETTER OF THE MID-HUDSON ACS

## Mechanism Of The Month



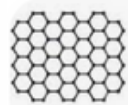
<https://onlinelibrary.wiley.com/doi/abs/10.1002/poc.3121raph>



Fullerene



Diamond



Graphene



Carbon Nanotube

### Fullerene Chemistry

Fullerenes are synthesized from the arc method from fullerene containing soot. It is based on the Huffman Kratschmer method. Fullerenes are isolated from soot formed when a strong electric current is used to produce an arc between two graphite electrodes.

Fullerenes are an allotrope of carbon molecules that consist of carbon connected by single and double bonds in order to form a closed mesh of fused rings. Each ring is five to seven atoms in size. The molecules can form tubes, hollow spheres, ellipsoids or other shapes

## In This Edition

February Technical Talk

Dr. Michael Tunick  
Molecules to Mozzarella

April Technical Talk

Dr. William Istone  
Introduction to Astrochemistry

Earth Day Hike/Bike Ride

Woman Chemist Committee Luncheon

Milestone Awards

## Important Notes

High School Chemistry Teacher  
Nominations

Deadline: March 14, 2024

Poetry Contest Submissions

Deadline: April 28, 2024

Undergraduate Research Symposium  
Submissions

Deadline: April 1, 2024

Earth Day Hike/Bike Ride

Deadline: April 15, 2024

# Mid Hudson Chemist



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Mid-Hudson

## Call For Nominations

### Mid-Hudson Section Award for

#### Excellence in High School Chemistry Teaching

The Mid-Hudson Section of the American Chemical Society is seeking nominations for the AWARD FOR EXCELLENCE IN HIGH SCHOOL CHEMISTRY TEACHING. The purpose of this prestigious award is to encourage and reward career excellence in chemistry teaching and the promotion of the field of chemistry.

#### Selection Criteria

- Nominee must be actively engaged teaching chemistry in a chemical science in high school (grades 9-12) at least half time. The high school must be within one of the following counties in New York State: Dutchess, Orange, Putnam, Sullivan or Ulster.

#### Consideration will be given to:

Active involvement in extracurricular activities in chemistry that stimulate the interest of their students in chemistry or related fields, such as participation in science fairs, science clubs, Chemistry Olympiad, etc.

- Willingness to be abreast of new developments in the field and expand self-skills. This can be accomplished as evidenced by the pursuit of a higher degree in chemistry or a chemical science, enrollment in refresher courses and summer institutes, regular attendance at scientific meetings, membership in professional organizations, etc.
- The recipient of this award will be recognized at our Undergraduate Research Symposium and will receive a plaque, monetary gift and a one-year subscription to The Journal of Chemical Education  
NEW FOR 2024: We will also award \$200 to the Chemistry Department at the recipient's high school.

We invite your nominations of outstanding chemistry teachers for this award. Note: Self-nominations will not be accepted. The nomination will be judged on the selection criteria.

If you have any questions or to obtain the nomination form, please contact

Patti Cusatis via e-mail ([patti.cusatis@basf.com](mailto:patti.cusatis@basf.com)).

The nominations must be submitted no later than March 14, 2024.

# Mid Hudson Chemist



ACS Local Section  
Mid-Hudson

## February Technical Talk

Molecules to Mozzarella: The Chemistry of Cheese

Speaker: Dr. Michael H. Tunick, Drexel University

Date: Monday, February 26, 2024 @ 7:00 pm



Michael H. Tunick had 40 years of experience as a chemist and research chemist at the United States Department of Agriculture after serving there as a student trainee. He planned and conducted research aimed at creating new dairy products and expanding marketability of existing products. He also led and executed his research unit's effort on basic and applied aspects of rheology of dairy commodities. Dr. Tunick has expertise in thermal analysis using differential scanning calorimetry, microstructural analysis using scanning and transmission electron microscopy, microbiology of bacteria, and rheology of materials using texture profile analysis and small amplitude oscillatory shear analysis. He was also an adjunct faculty member at Drexel University, teaching food chemistry and

related courses, until he started at Drexel full-time in September 2017 upon retiring from the USDA. He teaches Food Chemistry, Food Microbiology lecture and laboratory, Food Composition & Behavior, Microbial Food Safety & Sanitation lecture and laboratory, Food Preservation Processes, Food Analysis, and Dairy Science. He also mentors students in the M.S. in Food Science program. Dr. Tunick has authored or coauthored over 140 publications, has coedited ten books, and has co-chaired over 20 symposia in the Division of Agricultural & Food Chemistry in ACS. He served on the ACS Speaker Service with more than 50 presentations at universities and at ACS local sections. ACS has asked him to present webinars to their membership on the chemistry of both cheese and chocolate. He served as AGFD Chair in 2001, Secretary from 2003 to 2018, and Councilor starting in 2019. He became an ACS Fellow in 2011 and Oxford University Press published his book "The Science of Cheese" in 2013.

Continue on page 4

# Mid Hudson Chemist



ACS Local Section  
Mid-Hudson

## February Technical Talk

Molecules to Mozzarella: The Chemistry of Cheese  
Speaker: Dr. Michael H. Tunick

### Abstract of Talk:

Around fourteen billion pounds of cheese are produced in the US each year, and chemistry is involved in every step of the manufacturing process. The milk coagulates into a curd when starter culture bacteria digest lactose and rennet enzyme destabilizes casein micelles. Cooking and piling the curd forces out whey and fuses the micelles into a matrix, addition of salt helps control microbial growth, and aging leads to protein and fat breakdown by enzymes added to the milk and produced by microorganisms, generating characteristic textures and flavors. Changes in the physical chemistry of cheese may be monitored by electron microscopy and rheology, and chromatographic techniques allow flavor compounds to be identified. Differences in cheesemaking procedures lead to a wide range of varieties, which chemists study in order to provide products that are more acceptable to consumers.

Format: Virtual

[Click glassware for link](#)

Join Zoom Meeting:



Meeting ID: 845 437 7350

Passcode: chemistry

# Mid Hudson Chemist



ACS Local Section  
Mid-Hudson

## April Technical Talk



Dr. William Istone has a B.A. in Chemistry from LaSalle University and a Ph.D. in Chemistry from the University of Pittsburgh. He has worked for nearly 50 years as a research chemist, chemistry teacher, and chemistry and astronomy professor. In addition, he is an amateur astronomer who has done some basic astrochemistry.

## WHAT IS THE CHEMICAL COMPOSITION OF OUTER SPACE?

### AN INTRODUCTION TO ASTROCHEMISTRY

*A Lecture & Discussion By  
William Istone, Ph.D.*

Adjunct Professor of Science, Engineering and Architecture at SUNY Orange

**THURSDAY, APRIL 25, 2024 AT 7:00 PM**

**Gerry Forum 010  
Rowley Center for Science and Engineering  
Middletown Campus**

Parking: Parking Lot #1 on Grandview Ave

You read on the Internet that the atmosphere of Pluto consists of nitrogen with small amounts of methane and carbon monoxide. How did scientists determine this given that Pluto is 3.3 billion miles from Earth and it takes a spacecraft about nine years to travel there? The short answer is astrochemistry. Beginning at Harvard in the late 1900's, scientists have developed a number of spectroscopic techniques that allow them to determine the chemical composition of objects in outer space. We will discuss a brief history of astrochemistry and a few of the techniques that are commonly utilized.

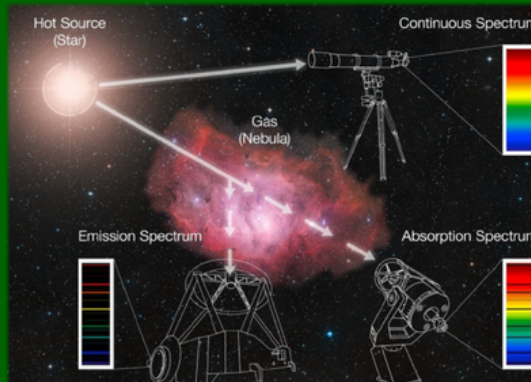


Photo Credit: European Southern Observatory

# Mid Hudson Chemist



**ACS** Local Section  
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## Earth Day Hike and Bike Ride Event

### 2024 EARTH DAY HIKE & BIKE CELEBRATION

Hosted by:



**ACS** Local Section  
Mid-Hudson



**When?** Saturday, April 20, 2024

**Rain Date:** Sunday April 21, 2024

**What?** Earth Day Hike and/or Bike

**Where?** Meet at Tony Williams Parking Lot on the Rail Trail at 113 South Riverside Rd, Highland, NY 12528

**This part of the rail trail is handicap accessible and has plenty of parking!**

Refreshments / Snacks / ACS "SWAG" will be handed out at **10:30 am SHARP** and then off we go!

Plan to **arrive by 10:15 am** to park and gather your equipment...

#### Hiker Checklist of things to bring:

1. Comfortable walking shoes
2. Sun hat
3. Sunblock or sunscreen
4. Light jacket
5. Water bottle
6. Small pack
7. Personal affects
8. Well-behaved dogs on lead are permitted (bring baggies!)
9. Signed Waiver & Photo Release

Hiking Group Leader: Michelle Rissolo

#### Biker Checklist of things to bring:

1. Bike that is tuned and ready to go
2. Bike shoes or sneakers
3. Helmet
4. Sunblock or sunscreen
5. Light jacket
6. Water bottle
7. Small pack
8. Personal affects
9. Signed Waiver & Photo Release

Biking Group Leader: Elizabeth Harper

Join Us ! Registration is only \$10

Continue on page 7

# Mid Hudson Chemist



ACS Local Section  
Mid-Hudson

## Earth Day Hike and Bike Ride Event

Hikers will walk the rail trail east for 3.6 miles to the Walkway Over The Hudson, those needing a rest will wait at the Ranger Station while the group crosses the Hudson for 1.3 miles and return, and then all will head west and return to Tony Williams Park. The short loop will be about 7.2 miles. The long loop will be about 9.8 miles. This is a quicker than comfortable pace on flat and rolling terrain that is paved and will take about 2.5-3 hours.

Bikers will ride the rail trail east to the Walkway Over The Hudson, cross the Hudson and ride across Poughkeepsie on the rail trail for a total of 10 miles, and then turning around and head west to cross the Hudson and return to Tony Williams Park. The loop will be about 20 miles. This is a casual ride on a paved rail trail with rolling terrain and will take about 2.5-3 hours.



[Click cyclers for link](#)

Must sign waiver and photo release. Please have a printed copy when attending the event



Buckminster Fuller promoted a concept called ephemeralization. Ephemeralization is based on doing more with less.



Don't forget to print and sign the waiver. Bring a copy of the day of the hike.

[Click cyclist for link to waiver](#)

# Mid Hudson Chemist



ACS Local Section  
Mid-Hudson

## 2024 Poetry Contest



### Theme: Get a Charge Out Of Chemistry 2024 CCEW Illustrated Poem Contest

The Mid-Hudson Local Section of the American Chemical Society (ACS) is sponsoring an illustrated poem contest for students in kindergarten through 12th grade.

**Contest Deadline: Sunday, April 28, 2024**

**Submit Entries To: Dr. Lynn Maelia, Mount Saint Mary College, 330 Powell Ave, Newburgh, NY 12550**

**Prizes will be awarded to top entries**

Winners of the Mid-Hudson Local Section's Illustrated Poem Contest will advance to the National Illustrated Poem Contest for a chance to be featured on the ACS website and to win prizes!

Write and illustrate a poem using the CCEW theme, **"Get a Charge Out of Chemistry."**  
Your poem must be **no more** than 40 words and in the following styles to be considered:

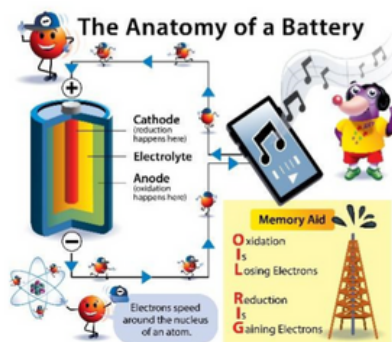
**HAIKU - LIMERICK - ODE - ABC POEM - FREE VERSE - END RHYME - BLANK VERSE**

#### Possible topics related to the battery theme include:

- Alkaline batteries
- Disposable batteries
- Anode
- Electrons
- Atoms
- Rechargeable batteries
- Cathode
- Renewable energy

#### Entries will be judged based upon:

Artistic Merit - use of color, quality of drawing, design, and layout  
Poem Message - fun, motivational, inspiring about yearly theme  
Originality Creativity - unique, clever and/or creative design  
Neatness - free of spelling and grammatical errors



#### Contest rules:

All poems must be no more than 40 words, and in one of the following styles to be considered: Haiku, Limerick, Ode, ABC poem, Free verse, End rhyme, and Blank verse.  
Entries are judged based upon relevance to and incorporation of the CCEW theme, word choice and imagery, colorful artwork, adherence to poem style, originality and creativity, and overall presentation.  
All entries must be original works without aid from others. Poems may be submitted by hand on an unlined sheet of paper not larger than 11" by 14" or scanned and sent via email. Illustrations may be created using crayons, watercolors, other types of paint, colored pencils, or markers. The illustration may also be electronically created by using a digital painting and drawing app on a computer, tablet, or mobile device.

The text of the poem should be easy-to-read and may be typed before the hand-drawn or digital illustration is added, or the poem may be written on lined paper, which is cut out and pasted onto the unlined paper with the illustration.  
No clipart or unoriginal images can be used.  
Only one entry per student will be accepted; all entries must include an entry form.  
If the illustration is created using a digital painting or drawing app, the name of the program must be included on the entry form (No AI).  
Acceptance of prizes constitutes consent to use winners' first name and last initial, along with the name of the ACS Local Section, on the ACS web pages and in the magazine, Chemical & Engineering News



# Mid Hudson Chemist



ACS Local Section  
Mid-Hudson

## 2024 Poetry Contest



### Chemists Celebrate Earth Week (CCEW) Illustrated Poem Contest ENTRY FORM

Please fill out this form and attach it after the poem. All fields are required. Incomplete forms will invalidate the entry.

The deadline for the Mid-Hudson Local Section Contest is April 28.

Submit poems to Lynn Maelia, Mount Saint Mary College, 330 Powell Ave, Newburgh, NY 12550 or via e-mail.

Student and Organization Information			
Student Name:			
Student Grade:			
Parent/Guardian Name:			
Parent/Guardian Email:			
Parent/Guardian Address:			
Parent/Guardian City:	State:	Zip:	
School or Sponsoring Group (e.g. Boys and Girls Club or Scout Troop, 4-H, etc.):			
Teacher Name:			
Teacher Email:			
School Address:			
School Address 2:			
School City:	State:	Zip:	
Please send any follow up for the student to the parent <input type="radio"/> or school <input type="radio"/> address.			
Illustration Type (Check one)			
Hand-drawn art <input type="radio"/>		Digitally created art <input type="radio"/>	
If the poem was digitally created, please name the software used in the box below:			
Judging Category by Grade (Check one)			
K-2 <input type="radio"/>	3-5 <input type="radio"/>	6-8 <input type="radio"/>	9-12 <input type="radio"/>
FOR LOCAL SECTION USE ONLY			
Local Section Name:	Mid-Hudson		
CCEW Coordinator Name:	Lynn Maelia		
CCEW Coordinator Email/Phone:	lynn.maelia@msmc.edu/ 845-569-3131		

More information is available at [www.acs.org/ccew](http://www.acs.org/ccew).

# Mid Hudson Chemist



ACS Local Section  
Mid-Hudson

## Undergraduate Research Symposium

### Call for Applications for 2024 Undergraduate Student Research Awards

Submissions due Monday, April 1, 2024

The Mid-Hudson Section of the American Chemical Society (ACS) invites applications for the 2024 Mid-Hudson ACS Undergraduate Student Research Awards from student researchers who plan to present their work at the 2024 Undergraduate Research Symposium (URS). Outstanding submissions will be selected to receive a monetary award. This is a separate application and is not required of all students presenting posters. Only students who wish to be considered for this prestigious award need apply.

#### *Rationale*

The Mid-Hudson Section wishes to reward undergraduate students who choose to write a short summary about their research and scholarship activities. The paper is to be written for a general scientific audience with a background in the chemical sciences without familiarity of the specific research effort.

#### *Criteria*

Research work should be completed by a student currently enrolled (2023-2024 academic year) as an undergraduate at one of colleges in the Mid-Hudson ACS area. Students must also present their work at the 2024 Mid-Hudson ACS URS held at State University of New York (SUNY) at New Paltz on April 19, 2024.

#### *Application Format and Procedure:*

All papers submitted must be primarily chemistry, not biology or physics.

Format: The paper must be written in Microsoft Word with a font type of New Times Roman and a font size of 12. Margins should be set to the Narrow setting under page layout/margins in Word. The description part of the paper may not be longer than two pages. Acknowledgments and references sections may exceed the two page limit. **Papers longer than two pages will not be considered.**

In writing the research paper, it is very important to consider that your paper will be evaluated by chemists who may not have a background in your specific area of research. Therefore, you need to communicate your research in terms that can be understood by a broad scientific audience. This is the most important aspect of the paper for reviewers.

# Mid Hudson Chemist



ACS Local Section  
Mid-Hudson

## Undergraduate Research Symposium

### 2024 Mid-Hudson ACS Undergraduate Student Research Award

The paper should be written in a scientific format and divided into sections in the following order:

- 1) **Title with authors:** The title of the paper should be at the top with the authors' names underneath. The student submitting the paper for the award must be clearly indicated by bolding and underlining that author's name.
- 2) **Introduction:** In communicating the research to an audience from a range of chemical backgrounds, you will want to clearly outline what you studied and why you studied that topic.
- 3) **Experimental:** Provide a brief review of your experimental design and data.
- 4) **Results and Discussion:** This is your chance to WOW the reviewers with your fabulous work. Remember that reviewers will not be familiar with your work, so you must educate them. After years of learning and studying, this is your opportunity to educate others. Make sure you include all relevant chemical structures, equations and reactions. Although you have spent hours dedicated to your research and are familiar with the reactions and chemicals involved, this information is new to the reviewers. The better the reviewers understand what you are doing and what you have accomplished, the better your chances of being recognized.
- 5) **Conclusion:** This needs to be consistent with the previous sections of the paper and should summarize what your research has accomplished and if applicable, address future research efforts.
- 6) **Acknowledgments and References:** These sections may exceed the two page limit and should be as extensive and comprehensive as needed.

In summary, it is important to remember that reviewers are not experts in your area of research. Your job is to educate them on your research and impress upon them how exciting and interesting your research is. This does not mean you have to be overly technical in your writing. You should include all the relevant chemistry involved in the project (e.g. important chemical structures and reactions), while making sure that the paper is readable, and the information is cohesive. Reviewers must be able to understand what you have accomplished.

#### *Submission procedure:*

Submissions should be sent by e-mail as an attached Word document to Dr. Chi Nguyen at [chi.nguyen@westpoint.edu](mailto:chi.nguyen@westpoint.edu) by Monday, April 1, 2024. The subject line of the e-mail should clearly indicate that you are submitting an application for the URS Student Research Award.

# *Mid Hudson Chemist*



**ACS** Local Section  
Mid-Hudson

## Milestone Anniversary Awards

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### Congratulations on 50 years with the American Chemical Society

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The Milestone Anniversary members will be honored at the  
Undergraduate Research Symposium on  
April 19, 2024 at SUNY New Paltz

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Dr. Robert. E. Davis

Dr. Greesh C. Goyal

Mr. Laurence G. Hoard

Mr. William K. Istone

Mr. Arthur D. Jung

Dr. Benjamin J. Kaufman

Dr. Louis Rosenfeld

Mr. Richard Skrobanski

# Mid Hudson Chemist



ACS Local Section  
Mid-Hudson

## Woman Chemist Committee

### Come Join Us for a Luncheon

Join us on our next planning meeting for the 2024  
activities

When: Saturday March 2, 2024 at 12pm

Where: Hudson Taco located by the waterfront in Newburgh,  
New York at 27 South Water Street

Why: To gather for a lunch to discuss and plan the 2024  
activities. Of course to have fun and hang out with fellow  
chemists.

Cost: Cover your own tab, but the excitement is on us

RSVP: before February 29, 2024

Contact Michelle Rissolo at (845) 399-1985 or  
RissoloM@outlook.com

# Mid Hudson Chemist



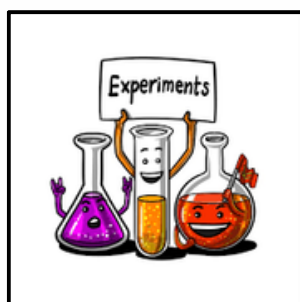
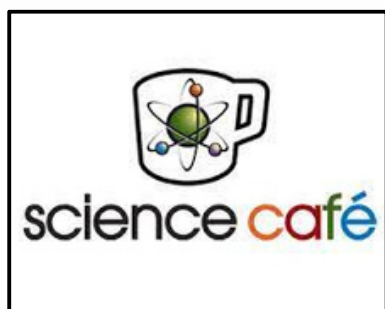
ACS Local Section  
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## The Hudson Valley Science Café

The Hudson Valley Science Café is a monthly gathering open to the public. The essence of a Science Café is informality between the presenters and members of the community.

Meetings are usually on the 4th Wednesday of the month.

Check the website for any upcoming presentations



For information, or to suggest a speaker, please contact  
Dr. Toby Rossman at [tobyrossman@yahoo.com](mailto:tobyrossman@yahoo.com)

Please check our page  
<https://www.facebook.com/hudsonvalleysciencecafe>  
for more information

# Mid Hudson Chemist



ACS Local Section  
Mid-Hudson

## 2024 Executive Board Members

Chair: Patti Cusatis

Chair-Elect: Ken McDonald

Past Chair: Michelle Rissolo

Treasurer: Joan Skinner

Secretary: Josh Frey

Councilor: Lynn Robinson

Alternate Councilor:  
Dawn Riegner

Members-at-Large:  
Ines E. Augie, Ashu Sharma and  
Lynn Maelia

Co-Awards Chairs:  
Patti Cusatis and Lynn Maelia

DCRSF: Noline Kiwiet

Membership Chair:  
Maryellen Sinclair

Earth Day Hike: Michelle  
Rissolo

SCC Chair: Glenn Roy

NCW Chair: Chi Nguyen

USNCO Chair: Joe Tanski

Publicity: Maryellen Sinclair

Earth Day Local Section  
Coordinator:  
Joan Skinner

WCC Chair: Lynn Robinson

URS Chair: Chris LaFratta

Webmaster: Patti Cusatis

Mid-Hudson Chemist  
Editor/Publisher:  
Maryellen Sinclair

YCC Chair: TBA

# Mid Hudson Chemist



ACS Local Section  
Mid-Hudson

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Get Involved and Connect With Us

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Connect with us at:

Facebook:

[www.facebook.com/MidhudsonACS](http://www.facebook.com/MidhudsonACS)

Join us on the Web and sign up for our  
list serve:

[www.midhudsonacs.org](http://www.midhudsonacs.org)

Get involved at our monthly  
board meetings.

Our next meeting is  
Tuesday March 12, 2024 at 7 pm via Zoom  
Contact our Chair Patrice Cusatis  
[patti.cusatic@basf.com](mailto:patti.cusatic@basf.com)