

Chesapeake Chemist

Maryland Section
American Chemical
Society

ISSUE
August/
September

Local Section Newsletter
August 15, 2020

ACS Maryland

Articles, Commentaries & Opinions

KATHERINE SELEY-RADTKE

Will it be vaccines or pills
that finally control COVID?

P.4

"THE WHOLE IS MORE THAN THE
SUM OF ITS PARTS" [Aristotle](#)

CHEMISTRY
LITERATURE
SPOTLIGHT
P.12

 ACS Local Section
Maryland

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Newsletter

Editor in chief: Beatrice Salazar

Policy

Pumtiwitt McCarthy, Chair-2020
Sarah Zimmerman, Web Master
Jennifer Schmitt, Social Media Liaison

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Cover:

Illustration: by Beatrice Salazar
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“TEAMWORK ...”

I have invited all Maryland ACS members to write short articles for the Chesapeake Chemist. That invitation is a standing invitation. This issue contains a perspective on the potential control of the COVID-19 Pandemic by Professor Dr. [Katherine Seley-Radtke](#) from UMBC (p 4) and a review article on green chemistry by Dr. [Sara Narayan](#) from Stevenson University (p 7). We also have a link to a video on research by students at McDaniel's College in Dr. [Dana Ferraris](#) research group. See the article (p 16-18).

This issue of the Chesapeake Chemist includes two new sections. The first, “*Books*” will be a list of 3-6 books by a local chemist that he/she feels have had an influence in his/her career. The first section of “*Books*” is by Dr. Lee Lefkowitz who kindly is sharing with us books that have been important to him (p11). The other new section, “*Chemistry Literature Spotlight*” will be an effort to make newsletter readers aware of new articles in the chemistry literature that in the view of a local chemist are of general interest or simply a joy to read. The first “*Chemistry Literature Spotlight*” by Dr. Camilo Rojas calls attention to a recent Chemical Reviews Thematic Issue on nitrogen reactivity (p 12). I'm inviting all Maryland ACS members to make contributions to this section.

We welcome new members of the ACS Maryland Local Section Executive Committee and look forward to their contributions. Dr. Lee Lefkowitz, one of the new members, shares with us his reasons for volunteering (p 15). There are also the usual sections on future events (p 16) and new employment opportunities (p 18). Don't forget to have a little fun with our chemistry jokes (p 13).

The Chesapeake Chemist newsletter is a product of *Teamwork* since its first issue in September 1945. I am thankful to all collaborators for their support. The topics are of general interest to the chemistry community. The idea is to promote scientific discourse that in turn improves our appreciation of a variety of topics in chemistry. Of course, articles and commentaries express personal opinions. If you have comments or would like to contribute an article to the Chesapeake Chemist Newsletter, please contact me.



Beatrice Salazar

Editor -in-Chief, ACS Maryland Section
Member since 2010 [See more from Beatrice Salazar](#)

CHAIR'S MESSAGE



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Dear members,

Uncertainty still abounds and times continue to be stressful, yet there are glimmers of hope. The race is on to find vaccines and therapeutics that will slow the spread of COVID19. Biotech companies, government laboratories and academic institutions across Maryland are making significant progress on these fronts. Chemists are key players in the fight. In this issue, some of our own Maryland ACS members, (Immediate Past-Chair Dr. Dana Ferraris and Professor Katherine Seley-Radtke) share their research that is contributing to this very important work. Hopefully we will soon enter the post-COVID19 era.

The Maryland Section of the ACS strives to be an inclusive community where all voices are acknowledged and heard. Diverse perspectives can only enrich the chemistry community and we hope that you interact with the section through our events, social media accounts and our newsletter. All the recent submissions to our newsletter have been amazing and much appreciated. We encourage our members to continue to express themselves through submission of chemistry-related articles to our newsletter.

I wish you safety and good physical and mental health during these challenging times. ACS National has a [webpage](#) that outlines some initiatives and free resources during COVID-19. ACS Publications has also outlined some steps they will be taking to help combat racial [biases](#). Please also see some resources provided by the CDC to [help cope with stress](#) during COVID-19.

Stay safe and well,

Pumtiwitt McCarthy

Will it be vaccines or pills that finally control COVID?



Professor Katherine L. Seley-Radtke, Ph.D.

Professor, Chemistry & Biochemistry
University of Maryland, Baltimore County (UMBC)
President-Elect, International Society for Antiviral Research (ISAR)
Secretary (& Past President), Int'l Society of Nucleosides,
Nucleotides & Nucleic Acids
Associate Editor, *Antiviral Chemistry & Chemotherapy*;
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<https://www.mdpi.com/journal/molecules>
Co-Chair, Nucleosides, Nucleotides and Oligonucleotides Gordon
Research Conference, June 2021

A PERSPECTIVE ON THE PANDEMIC FROM PROFESSOR KATHIE SELEY-RADTKE, 2016 MARYLAND CHEMIST OF THE YEAR

Beware of the hype. Even preliminary results, such as the generation of an immune response from an experimental vaccine, are enough to send the stock market rocketing higher, as if this bit of information somehow means that life will return to normal.

Although the development of an effective coronavirus vaccine would be a monumental achievement by any measure, this is very far from a done deal. Yet, based on news reports one would reasonably conclude that it's only a matter of time until you'll be rolling up your sleeve and this global nightmare will come to an end. But it's not that simple, not even close.

TTrue, we have many of the finest minds in science working around the clock using a variety of sophisticated techniques, any one of which could result in an effective vaccine. Or, it could all amount to nothing. Such is the unpredictable nature of vaccine science.

Despite four decades and countless attempts, there is no vaccine for HIV/AIDS and there are none in sight. The situation is similar for hepatitis C – a dangerous infection of the liver that now infects three percent of the world. Over a two-decade period all attempts to develop a vaccine have failed, even though there is a very effective vaccine for hepatitis B, an unrelated virus that, like hepatitis C (HCV), infects the liver causing long-term, irreversible damage as well as liver cancer. Although not nearly as serious, herpes simplex (HSV), oral, genital, or both has infected an estimated [90 percent of the people on earth](#). As with HCV and HIV, despite considerable research, there is no vaccine to prevent or treat HSV.

These three viral infections have something else in common; all three can be cured or controlled by small-molecule drugs that inhibit replication of the viruses.

HIV/AIDS drugs are so good that when used properly have turned a sure killer into a treatable chronic conditions, much like diabetes. Hepatitis C drugs are so powerful that they can now cure 98% of patients with a, eight-week course – something that was pure fantasy only a decade ago. Although drugs for herpes do not produce such dramatic effects, they are still effective in limiting the number and severity of outbreaks of both oral and genital herpes.

HIV
AIDS
HCV
HSV
Hepatitis C
Hepatitis B
Diabetes
COVID
Remdesivir
Humira
Herceptin
Interferon
Sofosbuvir
Tenofovir
Valcyclovir

A small-molecule drug is just what the name implies. They are usually pills, which are absorbed from the gut into the bloodstream. To put it simply, “small” means that the molecule contains a limited number of atoms, which limits both the size and molecular weight of the drug. The typical range of molecular weight of drugs (the mass of all atoms in the molecule added together) is 200-600. For example, the molecular weights of sofosbuvir (HCV), Tenofovir disoproxil (HIV) and valacyclovir (HSV) have molecular weight of 529, 519, and 324, respectively.

At the other end of the size spectrum are biologics – antibodies, vaccines, proteins, to name a few. Some common biologics and their molecular weights include Humira (autoimmune diseases,14,800), Herceptin (breast cancer, 14,800), and Interferon beta-1a (MS, 22,500). Not only are these

biologics far too large to be absorbed, they are also proteins, which are rapidly degraded in the stomach. This is why biologics must be given by injection.

Although it is better to prevent an infection than treat it, the reality that we may have no choice, at least in the short term. But this may not be a problem. For example, Remdesivir, the only approved COVID drug so far, operates by a well known mechanism that has tamed

other viruses – inhibition of viral RNA synthesis. This is also how sofosbuvir, tenofovir and valcyclovir work – they stop the growth of the virus by interrupting a key enzyme in a virus’s life cycle.

In addition, there are other classes of drugs that are under investigation that stop other steps in the virus’s life cycle, and this will be important as the most successful antiviral treatments have been combination therapies, i.e. several drugs in one pill, or a drug cocktail. This is important because it is almost impossible to shut down a virus’s growth with only one inhibitor because the virus finds a way to get around it by mutating. This is

known as drug resistance. When a virus mutates, the virus is now resistant to treatment and the drug no longer works. If you combine several different drugs into one pill, that not only greatly increases your chances of shutting down the virus completely, it also stops the development of resistance.

As a result, given the proven successes over decades for small molecule antiviral drugs, I believe that ultimately small molecule drugs will be the pathway to overcoming this pandemic, as well as new viruses that will undoubtedly emerge in the coming days. ■



Biography

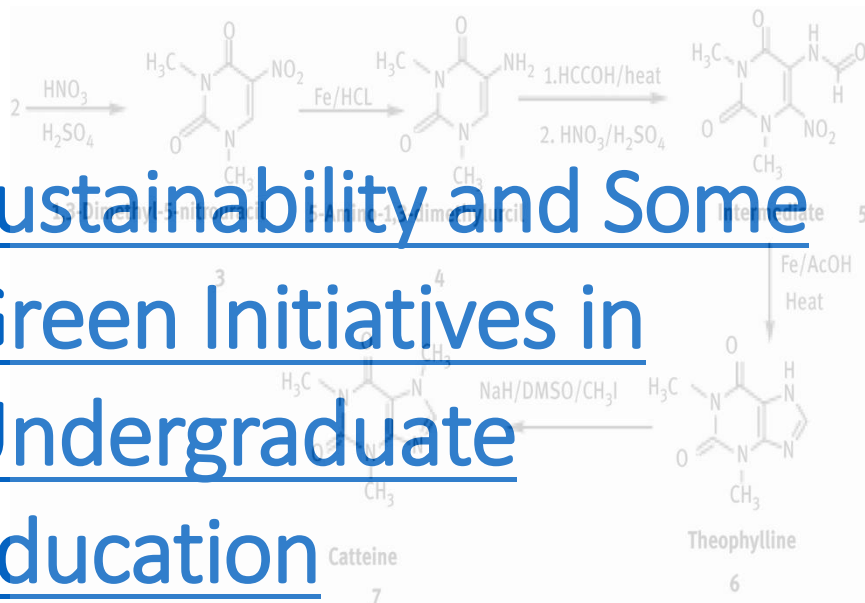
[Prof. Kathie Seley-Radtke](#), the ACS Maryland Chapter’s 2016 Chemist of the Year, is a Professor of Chemistry and Biochemistry at the University of Maryland, Baltimore County (UMBC). Her research involves using a medicinal chemistry approach to nucleoside/tide drug discovery and development.

Current projects include targeting SARS-CoV-2, Ebola, MERS-CoV, Dengue, Zika and Yellow Fever viruses, among other emerging infectious diseases using her nucleos(t)ide “fleximers”. She is currently the Co-Chair of the 2021 Gordon Research Conference on Nucleosides, Nucleotides & Oligonucleotides. Prof. Seley-Radtke was recently elected as the next President-Elect of the International Society for Antiviral Research (ICAR) and Secretary (and Past President) of the International Society for Nucleosides, Nucleotides & Nucleic Acids (IS3NA). Most notably, she has been heavily involved in mentoring junior colleagues, and as part of this, when she was President of IS3NA, she initiated the Chu Family Foundation Awards for Early Career Women for both IS3NA and ISAR. Kathie has also served on numerous NIH and other federal funding agency review panels, and is the Co-Chair of the NIH “Exploration of Antimicrobial Resistant Microbes and Therapeutics” panel. Most recently, Prof. Seley-Radtke was awarded the 2020 ISAR Antonín Holy Memorial Award for her outstanding accomplishments and demonstrated service to the antiviral and medicinal chemistry field.

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Sustainability and Some Green Initiatives in Undergraduate Education



Review Article by

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Green Chemistry

is a current chemical topic of scientific research. The main objective is preservation of resources, learn how to control pollution and understand the chemistry behind in order to modify traditional chemistry if necessary. This review is based on 12 Green Chemistry principles used in a variety of laboratory experiments and its application to real life and sustainability. Green chemistry presents a modern version of the traditional chemistry curriculum. Uses less to non-toxic chemicals, safer experiments and less expensive materials and equipment. As a result, Green Chemistry experiments produce less toxic waste disposal which gives students an opportunity to participate in meaningful research projects.



Professor Narayan's research group from left to right: Jennifer Bundra, Wendy Diehl, Dr. S. Narayan, Matthew Zajac and Hollie Zajac Stevenson University. Photo courtesy of Sara Narayan.

Review Article

Abstract

Green Chemistry is also known as sustainable chemistry or benign chemistry. It is concerned with developing processes and products that reduce or eliminate the use of and generation of hazardous substance. In the 21st century today's students are particularly interested in matters that affect their health and well-being of the planet. To deal with such challenges of students the concept of Green and Sustainable Chemistry not only offers an excellent opportunity to address some of these concerns, but also provides us with a useful way to advance the way we do chemistry. Green chemistry is an ideal focus for undergraduate science education. A strong laboratory component is at the heart of many science courses. In this chapter some of the green chemistry principles and methodologies used to device certain undergraduate laboratory experiments and research are discussed.



[Professor Saraswathi Narayan](#)
Stevenson University

Physical Sciences Review: June 2020 issue.

<https://doi.org/10.1515/psr-2020-0004>.

This article will also appear in Green Chemical Process Series

Dr. Saraswathi Narayan is a Professor of chemistry at Stevenson University, Stevenson Maryland for the past 25 years. She currently teaches nursing chemistry and does research on Green Chemistry. She has taught several courses in other disciplines: Organic, Medicinal, General and Physical chemistry. In addition to Green Chemistry, Dr. Narayan's current research includes drug design of anti-HIV drugs using computational techniques.

[Learn more about Dr. Sara Narayan at "My Research"](#)

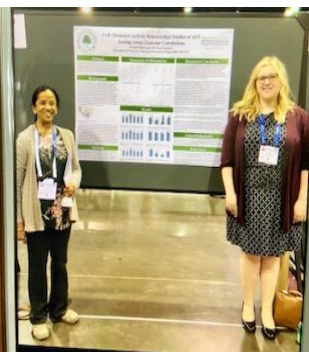
Contact: Dr. S, Narayan, Professor of Chemistry at Email: snarayan@stevenson.edu



1_ Lemane Namara, S. Narayan, and Sara Bonfils. Students Spring semester - 2020



2_ Corina Carter, ACS Student Award recipient and S. Narayan



3_ S. Narayan and Kendel Quirk at MARM Meeting - 2019



4_ Tyler Craig and S. Narayan

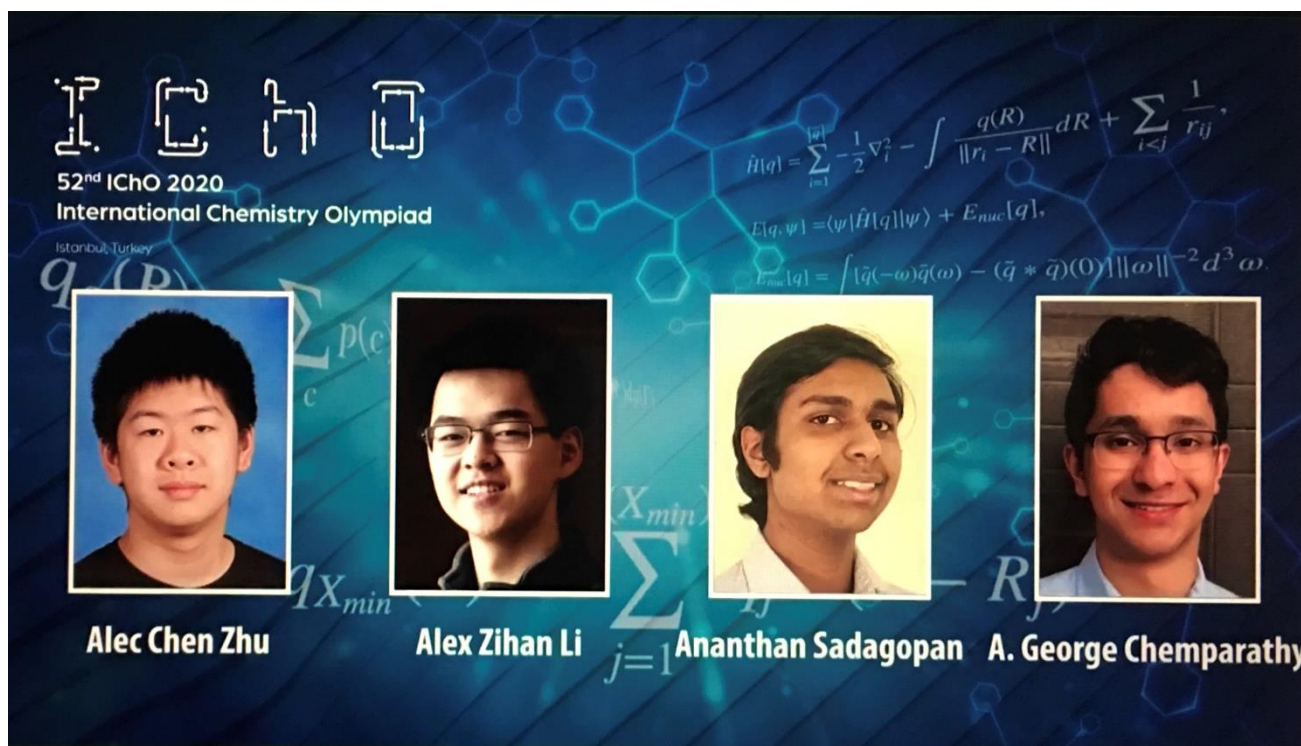
Team USA Wins Top Gold and 4 gold medals at the 52nd IChO

We are proud to announce that all four students who participated in the International Chemistry Olympiad won gold medals, and one of them was the overall top scorer out of 235 Olympians, representing 60 countries!



Alex Li, Lexington High School, MA, Northeastern Local Section – Top Gold

Please join us in congratulating **Team USA!**
 Thank you for your commitment and support to the Chemistry Olympiad program.
www.acs.org/olympiad



Alec Zhu, Lexington High School, MA, Northeastern Local Section
Ananthan Sadagopan, Westborough High School, MA, Central Massachusetts Local Section
Anugrah George Chemparathy, Dougherty Valley High School, CA, California Local Section

HISTORY CORNER...



2020 Makes History: The First-Time Ever Virtual International Chemistry Olympiad, IChO

52nd IChO 2020 in Istanbul, Turkey

By Beatrice Salazar, USA Chemistry Olympiad Coordinator Maryland Local Section

International Chemistry Olympiad

IChO is an annual academic competition for high school students. Up to 4 students for each national team compete around July in both a theoretical and experimental sections, with about half of the participants being awarded medals.

- 1968 - The first IChO was held in Prague, [Czechoslovakia](#). This year the political situation in Czechoslovakia was very turbulent. The country was in an economic reform. Groups of intellectuals strove after a “socialism with a human face”. The smell of independence in the air brought many new ideas one of them was to organize an International Chemical Olympiad (They started with 3 teams, and 18 competitors - Czechoslovakia, Poland, Hungary)
- 1971 – The only year IChO was not held. The delegations that attended the first events were mostly countries of the former Eastern bloc until 1980
- 1980 - The 12th annual IChO event was held in Austria outside of “the socialist bloc” (13 Teams, 52 competitors)
- 2012 - The 44th IChO was held in Washington, D.C., United States, July 21–30 (72 teams, 283 competitors)
- 2020 – First time IChO is held virtually (the same for USA National Chemistry Olympiad, USNCO) due to COVID-19 restrictions. (60 Teams, 235 competitors)



Gold Medal
Winners

video USNCO/IChO

<https://www.facebook.com/tubitak/videos/2657145447948373/>



See press releases and an article in C&EN and ACS website.

BOOKS...



Dr. Lee J. Lefkowitz is a senior scientist with extensive experience across the chemical and biological sciences (more on Dr. Lefkowitz p15)

“I was influenced by so many of the textbooks that I studied. These three are at the top of my list of influential textbooks:

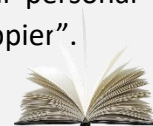
- **Biochemistry** by Lubert Stryer,
- **Protein Purification: Principles and Practice** by Robert K. Scopes
- **Biochemistry of Lipids, Lipoproteins and Membranes** by D.E. Vance and J.E. Vance.”

The books that influenced me the most as a scientist:

Racing for the Bomb: General Leslie R. Groves, the Manhattan Project's Indispensable Man by Robert S. Norris. Lieutenant General Groves is best known for overseeing the construction of the Pentagon and leading the Manhattan Project. Today, it seems inconceivable that one person could lead and complete such massive projects in such a short amount of time. This biography provides insight into Lieutenant General Groves' leadership and management styles. He is by far, my favorite science and technology manager.

Fritz Haber: Chemist, Nobel Laureate, German, Jew by Dietrich Stoltzenberg. I spent a significant amount of my military career developing countermeasures to chemical warfare agents and reading Fritz Haber's biography is virtually required reading. While Haber was a brilliant chemist, he was considered by many to be a war criminal, and his personal life reads like a Greek tragedy. While many of us will never achieve Haber's chemical accomplishments, we will all lead more successful lives.

Getting Things Done: The Art of Stress-free Productivity by David Allen. I read this book while I had a particularly demanding job. It is filled with excellent advice to improve your personal productivity. If you follow the advice in this book, you will be more productive and a lot happier”.



Acknowledgements

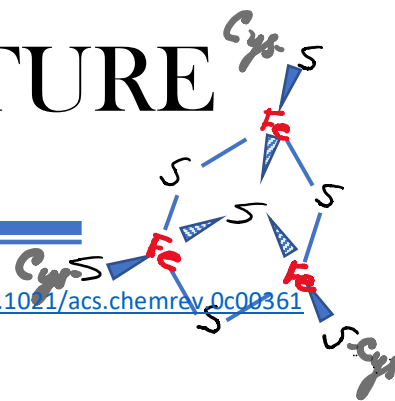
Special thanks to Local Section member Dr. Paul Smith for his suggestion to include articles by Professor Katherine L. Seley-Radtke, Ph.D. see cover story article on page 4.

Contact Dr. P. Smith at Email: **Paul Smith** <pjsmith@umbc.edu>

CHEMISTRY LITERATURE SPOTLIGHT

By Camilo Rojas

<https://pubs.acs.org/doi/pdf/10.1021/acs.chemrev.0c00361>



Nitrogen fixation, the conversion of nitrogen in the atmosphere to ammonia is both, crucial and remarkable. It is crucial because nitrogen in ammonia is subsequently assimilated into biomolecules essential to life. It is remarkable because molecular nitrogen is notoriously unreactive or at least it seems to be. The six electron reduction of molecular nitrogen to ammonia is carried out by nitrogenases, enzymes present in specialized bacteria. The question is: how are nitrogenases able to get molecular nitrogen to get off its... ground state? The short answer: Fe-S clusters. These are remarkable cofactors, that along

How are nitrogenases able to get molecular nitrogen to get off its... ground state?

with the rest of the protein, make the six electron reduction happen in what amounts to an electrochemical process. IMHO this enzyme-catalyzed reaction is up there with Shakespeare's writings and other paragons of beauty. Ever since WWI, conversion of nitrogen to ammonia has not been the sole domain of nitrogenases. Fritz Haber, a German scientist and Nobel Laureate, developed an industrial process using metal catalysis, high temperature and pressure to convert nitrogen to ammonia. Haber won the 1918 Nobel prize "for the synthesis of ammonia from its elements". This process was refined by Bosch into the Haber-Bosch process. Ammonia was converted to nitric acid through catalytic oxidation to manufacture explosives that helped Germany in its war effort. A less controversial use of the Haber-Bosch process has been the preparation of synthetic nitrogen fertilizers that support the feeding of one third to one half of the human population. Even though the enzymological and industrial processes occur in

“Reactivity of Nitrogen from the Ground to the Atmosphere”

comparable amounts, nitrogenases do a cleaner job (no need for fossil fuels among other advantages) under gentler conditions.

Chemical Reviews has just published (*Chem Rev* 2020, 120, 4919-5794) a thematic Issue containing comprehensive scholarly reviews that cover nitrogenases and the Haber-Bosch process as part of a larger subject: nitrogen reactivity. The issue is titled: “Reactivity of Nitrogen from the Ground to the Atmosphere”. The issue is introduced by Patrick Holland, a Professor of Chemistry at Yale University (*Chem. Rev.* 2020, 120, 4919-4020). Professor Holland provides a bird's eye view that serves as guide to up-to-date

articles on subjects that we may already be interested or that will motivate us to foray into related areas. If nitrogen reactivity is not your area of interest, I still recommend that you read the two-page introduction. You have nothing to lose; if this introduction doesn't excite you, nothing will. Just kidding; when this issue came to light I had been fixated to the area through an article on the assembly of Fe-S clusters (*Biochemistry*, 2004, 43, 133-139) where the first author was Patrick Bilder, a young friend who recently passed away.

The articles in the *Chemical Reviews* issue fall in roughly three categories. The first has to do

with nitrogenases; this includes reviews on how nitrogenases are generated, their structure and the reduction mechanism. Reaction mechanisms are covered by several complementary reviews that focus on the use of spectroscopy to elucidate mechanism, the different substrates used by nitrogenases (nitrogenases also process other small nitrogen and carbon-containing compounds), differences in reactivity among various nitrogenases, movement of electrons during the reduction process and finally, model systems used to illuminate our thoughts on mechanism. The second category will appeal to those with an eye on practical applications. The elephant in the room is the use of

alternative sources of energy. Among other articles, there is one on nitrogen-based fuel schemes and another on capturing energy from nitrogen during the electrochemical reduction to ammonia. The final category includes two articles that, according to professor Holland, a thematic issue on nitrogen would not be complete without them. I will not tell you what they are because I want to instigate you to check this review issue by yourself. Thanks to Professor Holland, the review authors, the anonymous reviewers and the *Chemical Reviews* editors for the amazing job they have done. ■

Camilo Rojas, PhD, is a retired biochemist living in Baltimore.



Laugh a Little...



- Discussing food and chemistry:
 - A hamburger has less energy than steak. Why? Because it is in the ground state.
 - Is there any difference between chemistry and cooking? In chemistry one should never lick the spoon!
 - How many atoms in a guacamole? Avocado's number.
 - Cole's Law: thin sliced cabbage
- Did you hear about the chemist who was reading a book about Helium? **He** just couldn't put it down.

The Executive Committee Meeting

Summary of Minutes

The Executive Committee of the Maryland Section met virtually on April 15, 2020. The topics considered included three of most importance:

1. The use of the METT grant equipment, Computers, TV Camera and related audio and video equipment arrived in 2019 to Dr. Kelly Elkins, Towson University to be used by the local section on projects and regular activities.
2. The use of the Pro-Zoom virtual application that was donated by ACS to the local section to maintain communication with all members and hold virtual meetings and workshops. It accommodates 250 people at each meeting with a duration of 24 hours.
3. The newsletter, The CHESAPEAKE CHEMIST, will be continued under the guidance of the editorial committee composed of Editor in Chief, Web Master, Social Media coordinator and 2020-Local Section Chairman.

For complete minutes of the April 15th meeting minutes, please refer to ACS Maryland website at <https://ascmaryland.org> or contact [Dr. Louise Hellwig](#), Local Section Secretary.

NOMINATIONS SOLICITED

The deadline will be September 14th, 2020

THE MARYLAND CHEMIST OF THE YEAR AWARD

[HTTPS://ACSMARYLAND.ORG/MARYLAND-CHEMIST-OF-THE-YEAR/](https://acsmaryland.org/maryland-chemist-of-the-year/)

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Why I chose ACS Maryland Local Section

Lee J. Lefkowitz, Ph.D.

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I think it's very important for chemists to be members of the American Chemical Society and once they are members, I think it is very important that they join their local section and participate in local events to network and advance the profession. Throughout my career, I moved fairly frequently. I lived in New Jersey, Pennsylvania, California, Texas, Maryland, Washington, D.C. and even spent a year in the Republic of Korea. I always tried to ensure that my local section membership matched my current address. Between life and work, most chemists that I know are busy people. It is not always easy to carve out a few evenings to attend local section events, but it is incredibly rewarding. At local events, I always meet interesting people, learn a few new things, and hopefully pass along some of my knowledge.

BIOGRAPHY



Meet Dr. Lee J. Lefkowitz

Lee J. Lefkowitz is a senior scientist with extensive experience across the chemical and biological sciences with particular interest in lipid enzymology, pharmacology, toxicology, public health, and laboratory informatics. Following the completion of his doctorate in biochemistry at the University of California, San Diego, he served as a Medical Service

Corps officer in the U.S. Army for twenty years and retired in July 2019. He spent half of his military career working on medical countermeasures against chemical and biological warfare agents and the other half of his military career was devoted to leading public health laboratories. In the fall semester of 2019, he worked as an Adjunct Professor of Chemistry at Towson University. Lee is a member of the Department of Defense Acquisition Workforce and he currently works as a Test Manager at the U.S. Army Evaluation Center at Aberdeen Proving Ground where he ensures the safety of new products for soldiers and coordinates testing events for new military products at various federal proving grounds, ranges, and laboratories. (See more of Dr. Lefkowitz on page 11)

Career change from the pharmaceutical industry to academia



Photo by David Sinclair, McDaniel College

by McDaniel College Associate Professor Dana Ferraris

I spent the first 15 years of my career as a medicinal chemist cutting my teeth on some of the most difficult projects in biotech. Namely, discovering drugs for diseases of the central nervous system including stroke, schizophrenia and neuropathic pain. Along the way I gained a perspective that every medicinal chemist must understand – your job is incredibly difficult, failure is so often the norm and not the exception. The best medicinal chemists often employ strategies to combat this reality and by doing so become some of the most pragmatic problem solvers in the whole drug discovery

process. My mantra was simply to contribute in some way to **just one** approved drug, and by doing so, potentially help thousands of people. In many ways this is the perspective that

drug and for the past 5 years, my research has focused on making the tools necessary to validate some fringe, high risk drug discovery targets and bring them to the attention of those companies that have the financial ability to progress them further.



[Photo Courtesy of WBAL- 11 News - See page 18 for video](#)

I took into my research group when I changed careers from a medicinal chemist to a college professor. I realized in short order that there are many ways to contribute to that one

This year, much of that changed as I witnessed the coronavirus, SARS-CoV2, ravage the world at an unprecedented level. I understood that the world needs an effective treatment for this virus

perhaps more so than any other disease in my lifetime. Indeed, many scientists around the planet understand that we are in this pandemic together and are sharing data at an

unprecedented level, providing starting points for many medicinal chemistry groups like my own with the understanding that there are many people on this planet that can make a difference. I understood that as a medicinal chemist, I could not simply watch this disaster unfold from the sidelines. The idea of starting a coronavirus research project with my undergraduate research group was just the beginning. Several factors had to align much like a perfect storm: 1) My wife and family had to support this effort by managing our family business, Kismet Café, without my help in a time where

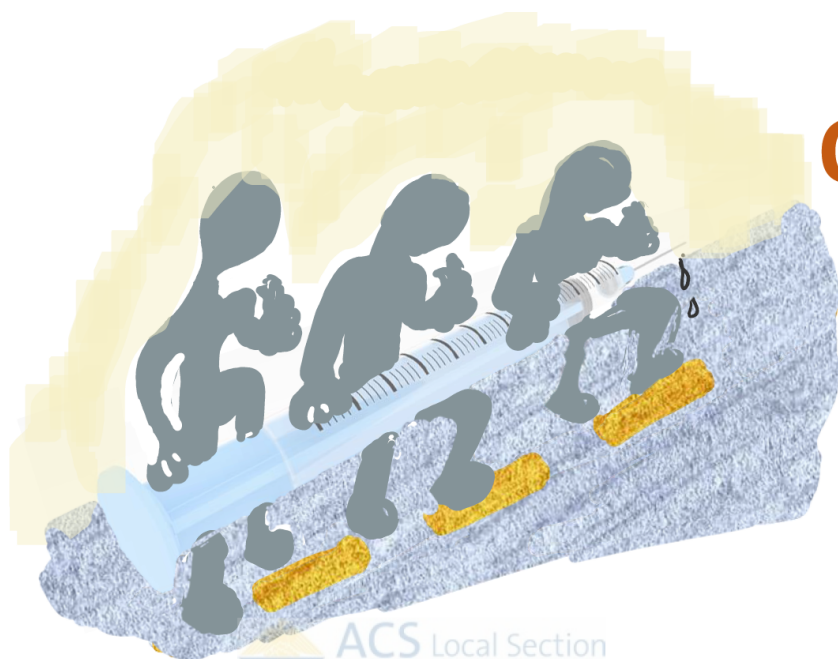
restaurants and small businesses have been pummeled, no small task; 2) My administration at McDaniel College had to be willing to support this effort by putting regulations in place to make it a safe work environment; 3) Several of our department's biggest financial supporters, our donors, had to allow my group to use endowed funds for research purposes; 4) I had to convince my research group to actually do the work in the middle of a quarantine. I feel tremendously fortunate that each of these obstacles was overcome in a relatively short period of time. My wife and

staff at the café are the best on the planet all of them are rock stars. My administration came together in short order with the funds and policies needed to create the safe work environment. And finally, my students are the real heroes, treating this experience like a full-time job (without much of a financial incentive). I have no doubt that their hard work will contribute to the field and to the discovery of a coronavirus antiviral. ■

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The race is on...



OR



ACS Local Section
Cartoon designed by Beatrice Salazar ®

Future Events sponsored by ACS Maryland Local Section

See Chesapeake Chemist future issues:
October, November and December 2020 respectively



“A great clip about our colleague on WBAL”

<https://youtu.be/rSGiztfKQZM>



[WBAL-TV 11 Baltimore](#)

Thanks to ACS Maryland Local Section member,
[Louise Hellwig](#) for providing this information



“By inhibiting this one protein, we're hoping to stop the viral life cycle and knock down the viral load and basically cure you,”
[Ferraris](#) said. Photo and comment from Youtube/ WBAL

The 37th annual meeting of the Mid Atlantic Plant Molecular Biology Society

Will be held on a free virtual zoom setting on August 19, 2020. Join us!
<http://wp.towson.edu/mapmbs>

Contact:

Dr. James A. Saunders

Treasurer,

Mid Atlantic Plant Molecular Biology Society

14590 Triadelphia Mill Road

Dayton, MD 21036

jsaunders@towson.edu

443-386-4695



As you may understand, due to the world health situation we will be holding the upcoming 37th annual meeting of the Mid Atlantic Plant Molecular Biology Society on a free virtual zoom setting on August 19, 2020. About 60 of you friends and colleagues have already signed up to participate from the safety and comfort of their own computers for this meeting that features a student friendly atmosphere where academic, government, and industry scientists can hear top rated invited research presentations, participate poster sessions, and network with your scientific community. There is no registration fee for the meeting however you must fill out a short registration form to be emailed a

Zoom invitation on the society website at <http://wp.towson.edu/mapmbs>. The scope of the presentations includes plant, microbial, and viral molecular biology, biochemistry, genomics, and bioinformatics. A brochure including the invited speakers and registration information is attached. We will once again be offering an awards and \$100 cash prize for the best poster presentation by a undergraduate or graduate student, technician or postdoc each in their own categories. Information on details of abstracts for posters is on the website. Please pass this information on to your faculty and colleagues that might be interested and register soon so you receive the zoom invitation. The deadline for poster abstracts is July 31, 2020. Visit the website for meeting information and a history of previous programs <http://wp.towson.edu/mapmbs>.

**Share/Promote
the Virtual ACS
Kids Zone with
Miss America
and More...**

Information provided by ACS Maryland

Local Section member:

Rose A. Pesce-Rodriguez

CIV USARMY CCDC ARL (USA)

The virtual ACS Kids Zone event will take place on Saturday, August 15, 2020 from 3-5pm Eastern

Host: Horwitz, David

<D_Horwitz@acs.org>

Contact: Outreach <Outreach@acs.org>

TO: CCEW/NCW Coordinators and ACS Maryland Members

It is with great excitement today that ACS announces a Virtual Kids Zone event taking place on Saturday, August 15 from 3-5pm Eastern. Host Bibiana Campos Seijo, Editor-in-Chief of Chemical & Engineering News, will lead viewers through four activities from experienced science educators, like: Miss America and biochemist, Miss Camille Schrier: <https://www.today.com/video/here-she-is-miss-america-2020-biochemist-camille-schrier-of-virginia-75427397949>, Chemistry teacher recently featured on local/national media, Jonte Lee:

<https://www.goodmorningamerica.com/living/story/science-teacher-turned-kitchen-chemistry-lab-students-70508048>, and other distinguished guests. The event will be offered in English (3pm Eastern) and Spanish (4pm Eastern). See email below for more information.

A full list of presenters, activities, and resources will be available in the coming weeks on the ACS Kids Zone web page. In the meantime, please share the message below, the website www.acs.org/kidszone - <http://www.acs.org/kidszone>, and the Facebook event www.facebook.com/events/1622001711311663/ - <http://www.facebook.com/events/1622001711311663/> with everyone and anyone who may be interested in registering to attend.

Also, consider attending yourself, and inviting your co-coordinators, chemistry students, and other volunteers to watch as we provide an example of what virtual chemistry programming might look like for you this Fall.

Let me know if you have any questions! Thanks, David

PS/ edited

“Hopefully none of the future events will be cancelled!
Let’s go virtual, just in case...”

“We are looking forward to find out about this one ‘protein’
[Dr. Ferraris](#) mentioned”

“We like the direction of the Chesapeake Chemist, the articles are fun, informative and enjoyable. In particular, the article from the last issue on environmental contaminants from Professor Lee Blaney at UMBC was remarkably interesting”



Useful Link:

<https://www.editage.com/insights/a-young-researchers-guide-to-perspective-commentary-and-opinion-articles>

It has been wonderful to have these many contributors, please continue sending more articles, comments, opinions reviews etc. I don’t mind going through all the paperwork in fact, it has been fun!

It is back!

**2020 National Chemistry
Virtual Week Programs**

Ages 7 & up; 60 min. Registration required.

Howard County Library:

Elkridge Branch: Saturday, September 19, 2-3 p.m.

Miller Branch: Saturday, September 26, 2-3 p.m.

Contact: [Rose A. Pesce-Rodriguez](#)



JOBS

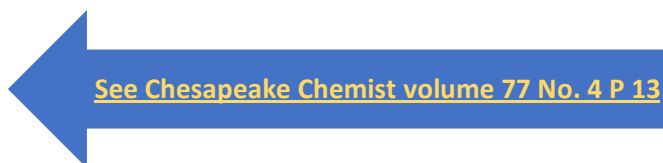
To advertise in the Chesapeake Chemist-JOBS section, please contact Beatrice Salazar via e-mail at CCNLclassifieds@gmail.com or leave a message at 443-801-0582.



**GOVERNMENT
POSITIONS**



US Army Combat Capabilities Development Command (CCDC)- Army Research Laboratory



Events Contact

The U.S. National Chemistry Olympiad

USNCO MARYLAND URL:

<http://www.beatricesalazarusncocoordinator.webs.com>

Jan - April

Student Travel Awards

<https://acsmaryland.org/travel-awards/>

Email: Louise Hellwig <Louise.Hellwig@morgan.edu>

Jan – March

Student Award <https://acsmaryland.org/student-awards/>

Email: George Farrant, gfarrant@yahoo.com

Chemists Celebrate Earth Day

April

Senior Awards

Email: Merle Eiss, meiss32@aol.com

Email: Linda Gonzalez <linda_gonzalez@mccormick.com>

May

National Chemistry Week Events

<http://www.beatricesalazarusncocoordinator.webs.com>

Beer Tours: Louise Hellwig <Louise.Hellwig@morgan.edu>&

Michele Foss <foss.michele@gmail.com>

May to Sept.

Braude Award

<https://acsmaryland.org/braude-award/>

Email: Louise Hellwig <Louise.Hellwig@morgan.edu>

Oct.

The Remsen Award

<https://acsmaryland.org/remsen-award/>

Email: Dana Ferraris (dferraris@mcdaniel.edu)

<dferraris@mcdaniel.edu>

Nov.

The Maryland Chemist of the Year Award

<https://acsmaryland.org/maryland-chemist-of-the-year/>

Email: Angela Sherman, asherman@ndm.edu and

Jennifer Schmitt, jen@rapafusyn.com

Dec.



Nominations Solicited:

The deadline will be
September 14th, 2020.

2020 ADMINISTRATION OFFICERS

2020 SECTION OFFICERS

- Chair 2020..... Pumtiwitt McCarthy, Morgan State University, pumtiwitt.mccarthy@morgan.edu
Vice-Chair 2020..... Eric C. Cotton, Community College, of Baltimore County, cccotton2@ccbcmd.edu
Chair-Elect (Chair 2022).... Sarah Zimmerman, Web Master, Chair of Member Assistance Committee scatzim@gmail.com
Secretary 2020..... Louise Hellwig, Morgan State University, louise.hellwig@morgan.edu
Treasurer 2020..... Angela Sherman, Notre Dame of Maryland University, asherman@ndm.edu
Past Chair (2019)..... Dana Ferraris, McDaniel College, dferraris@mcdaniel.edu

2020 SECTION COMMITTEE ON NOMINATIONS and ELECTIONS

- Chair of the Committee on Nominations..... James Saunders, jsaunders@towson.edu
Additional 4 members: Dana Ferraris, Chair-2019, dferraris@mcdaniel.edu
..... Pumtiwitt McCarthy, Vice Chair-2019, pumtiwitt.mccarthy@morgan.edu
..... Beatrice Salazar, Chair-2018, beatricesalazar1@gmail.com
..... Sara Narayan, Stevenson University, SNARAYAN@stevenson.edu

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1. 2020-2022 Kelly Elkins Member of the ACS Ethics Committee, Kmelkins@towson.edu
2. 2018-2020 Dana Ferraris Chair of the Section Program Committee (McDaniel College), dferraris@mcdaniel.edu
3. 2018-2020 Jan Kolakowski Member of the ACS Committee on Technician Affairs, CTA jek6042@gmail.com
4. 2018-2020 Stephanie Watson ACS Committee on Committees member (ConC) NIST), stephanie.watson@nist.gov

ALTERNATE COUNCILORS/COMMITTEES

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3. 2018-2020 Michele Foss foss.michele@gmail.com
4. 2018-2020 Sarah Zimmerman Web Master, scatzim@gmail.com

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Chesapeake Chemist Editor-in-Chief... Beatrice Salazar, beatricesalazar1@gmail.com

Social Media Liaison..... Jennifer Schmitt, Jen@rapafusyn.com

CONTACT US: acsmarylandsection10@gmail.com

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- **Contacting the National ACS membership division: 800-333-9511 (US only) or service@acs.org**

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