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Distinguished Professor Alison Butler  
2022 William H. Nichols Medalist

*See page 10*



ACS Local Section  
New York



ACS Local Section  
North Jersey

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***THIS MONTH IN CHEMICAL HISTORY***

Harold Goldwhite, California State University, Los Angeles • [hgoldwh@calstatela.edu](mailto:hgoldwh@calstatela.edu)

In this month's column I will continue to look back a century and examine what was new in the chemical world in 1922. I will be scanning the pages of the "Annual Reports of the Progress of Chemistry for 1922" issued by The Chemical Society (of London; now the Royal Society of Chemistry) in 1923. This is the 19<sup>th</sup>. Volume of this valuable series.

I start with inorganic chemistry. Many of us have a one-shot view of the achievements of Bohr in the realm of atomic theory – the Bohr hydrogen atom model. We overlook the industrious and insightful way in which Bohr's approach to the electronic theory of atoms was extended over many years. In 1922 he published on a dynamic theory of heavier elements including non-circular eccentric orbits for some outer electrons that consequently cannot be assigned to a single energy level. He asserts that his refined theory accounts for paramagnetism; colored compounds; and complex spectra; and calls on recent X-ray spectral measurements to support his new approach.

Controversial, in retrospect, are those reports of the intensity of reflections of X-rays from sodium chloride crystals, by William Bragg and his associates, that indicate, counting from the nucleus outwards, shells of 7 and 3 electrons in the sodium ion, and 10, 5, and 3 electrons in the chloride ion. These numbers agree with Bohr's new ideas but completely disagree with the predictions of the L-L (Lewis-Langmuir) theory, since the Bragg interpretation sees no octets of electrons. Meanwhile Oliver Lodge urges consideration of the possibility that chemical bonding might be more accurately explained not by considering electrical forces but rather by the "interlacing of the stationary magnetic fields which must accompany rapidly revolving electrons." The debate rages on.

In more mundane but essential work the atomic weight of what was then called glucinum – our beryllium – was re-determined by the analysis of purified glucinum dichloride and precipitation and weighing of the chloride as silver chloride. A new atomic weight of 9.018 was calculated, lower than the 9.1 accepted at the time. The currently accepted value is 9.0122, so they pretty well nailed it in 1922. Boron is an element for which the mixture of isotopes can vary considerably depending on the source. The modern atomic weight value is usually given as 10.811 – with the caveat already stated. In 1922 determinations based on highly purified samples of boron trichloride and tribromide which then gave silver halides led to a value of 10.83, which was considered more reliable than an earlier value of 10.90.

One of my favorite reports in this section is on the work of H.B. Baker, a respected physical chemist and former President of The Chemical Society, on the subject of "intensive drying". Baker reported that by sealing liquids for extended periods (up to many years in most cases) in contact with the drying agent phosphorus pentoxide their physical properties changed markedly. Bromine dried for 8 years had its boiling point raised by 55 degrees! Ether dried for 9 years now boiled at 83 degrees rather than 35 degrees! After this tantalizing glimpse into an unusual facet of chemistry perhaps you'll be tempted to read a fuller account in "Intensive Drying: Anomaly and the Chemical Community" by Harold Goldwhite, *Journal of Chemical Education*, 1987, 64, 657. (Now you see why it's a favorite of mine.)

I close with a discussion of the activation of gaseous chlorine by light, a controversial subject at the time. Chlorine was illuminated by various light sources and then mixed with hydrogen while illuminated further. Immediate reaction took place. However chlorine exposed to an intense light source or to an electric discharge and then mixed with hydrogen in the dark as rapidly as in 0.01 seconds did not undergo reaction. The authors ruled out the intermediacy of triatomic chlorine in this process.

I still have organic chemistry, analytical chemistry, biochemistry, mineralogy, and radioactivity to go. Look for further columns on chemistry in 1922 in The Indicator.

**THE INDICATOR****Editor**

DR. BRIAN GIBNEY  
[brg33@newyorkacs.org](mailto:brg33@newyorkacs.org)

**Associate Editor**

DR. KATHLEEN GILBERT  
[kgilbert@njacs.org](mailto:kgilbert@njacs.org)

**Acting Advertising Manager**

DR. NEIL JESPERSEN  
 Cell: 347-658-9898  
[jespersn@stjohns.edu](mailto:jespersn@stjohns.edu)

**INDICATOR COMMITTEE**

DR. LES McQUIRE, **Chair**  
 908-334-5473

[Les@LesMcQuire.org](mailto:Les@LesMcQuire.org)

**New York Section Representative**

DR. NEIL JESPERSEN  
 Phone 516-883-7864 • Cell: 347-658-9898  
[jespersn@stjohns.edu](mailto:jespersn@stjohns.edu)

**North Jersey Section Representative**

VACANT

**Section Web Masters**

**NY Section** – DR. BRIAN R. GIBNEY

[postmaster@newyorkacs.org](mailto:postmaster@newyorkacs.org)

**NoJ Section** – PAUL TUKEY

[ptukey@njacs.org](mailto:ptukey@njacs.org)

**NEW YORK SECTION** <https://newyorkacs.online/>

**Chair**, DR. KATHLEEN E. KRISTIAN  
 Chemistry and Biochemistry Dept., Iona College  
 715 North Avenue, New Rochelle, NY 10801  
 914-633-2341 • [kkristian@iona.edu](mailto:kkristian@iona.edu)

**Chair-Elect**, DR. MARY VIRGINIA ORNA

ChemSource, Inc.  
 309 Bradley Avenue, Mount Vernon, NY 10552  
 914-310-0351 • [mvorna@newyorkacs.org](mailto:mvorna@newyorkacs.org)

**Secretary**, DR. DANIEL AMARANTE  
 Dept. of Chemistry, Stony Brook University  
 100 Nicholls Road, Stony Brook, NY 11794  
 631-632-2043

[daniel.amarante@stonybrook.edu](mailto:daniel.amarante@stonybrook.edu)

**Section Office**, BERNADETTE TAYLOR

Office Administrator  
 St. John's University, Dept. of Chemistry,  
 8000 Utopia Parkway, Queens, NY 11439  
 732-770-7324 • [btaylor@NewYorkACS.org](mailto:btaylor@NewYorkACS.org)

**NORTH JERSEY SECTION** <https://www.njacs.org>

**Chair**, DR. QI GAO  
 Senior Scientist, Merck & Co., Inc  
 2015 Galloping Hill Rd, Kenilworth, NJ, 07033  
 908-740-2940 • [Qi.gao1@merck.com](mailto:Qi.gao1@merck.com)

**Chair-Elect**, DR. JUSTYNA SIKORSKA  
 Associate Principal Scientist, Merck & Co., Inc.  
 2015 Galloping Hill Rd., Kenilworth, NJ 07033  
[justyna.sikorska@merck.com](mailto:justyna.sikorska@merck.com)

**Secretary**, BETTYANN HOWSON  
 49 Pippins Way, Morris Township, NJ 07960  
 973-822-2575 • [chemphun@gmail.com](mailto:chemphun@gmail.com)

**Section Office**  
 49 Pippins Way, Morris Township, NJ 07960  
 973-822-2575 • [chemphun@gmail.com](mailto:chemphun@gmail.com)

# THE Indicator

<http://www.theindicator.org/>

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**EDITORIAL DEADLINES**

April 2022	March 16, 2022
May 2022	April 16, 2022
June 2022	May 16, 2022

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<https://myaccount.acs.org/myaccount/EmailPreferences.html>

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## March Calendar

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### NEW YORK SECTION

#### Thursday, March 3, 2022

Long Island Subsection  
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#### Saturday, March 25, 2022

The Chemistry of Love  
See page 8

#### Monday, March 28, 2022

Board of Directors Meeting  
See page 8

#### April 1, 2022

Undergraduate Research Symposium  
*Abstract Submission Deadline*  
See page 13

#### Friday, April 8, 2022

William H. Nichols Distinguished Symposium  
and Award Dinner  
See page 9

### NORTH JERSEY SECTION

#### Monday, March 14, 2022

North Jersey Executive Committee Meeting  
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#### Thursday, March 24, 2022

NMR Topical Group  
See page 5

**The deadline for  
submitting material for  
the April issue of The  
Indicator is March 16<sup>th</sup>**  
<http://www.theindicator.org/>

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## NORTH JERSEY SECTION MEETINGS

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<https://www.njacs.org/>

### 2022 NORTH JERSEY EXECUTIVE COMMITTEE MEETINGS

2022 North Jersey ACS Chair Qi Gao and the Executive Council welcome you to our monthly NJACS meetings. All meetings will be held virtually until further notice. The meetings are normally held on **Mondays from 7 pm to 9 pm once per month**. All members are welcome to attend and become more involved in section activities.

The format for each meeting will be announced in preceding month's issue of The Indicator.

For any additional information including a link to virtual meetings and RSVP deadline for in-person meetings, please [click here to email our Communications Chair](#).

March 14  
April 18  
May 16  
June 13

September 19  
October 17  
November 14  
December 12

### NORTH JERSEY NMR TOPICAL GROUP

The next NMR Topical Group virtual meeting will take place on **March 24th at 7:00 PM ET** via Microsoft Teams. All are invited to attend. The speaker will be [Prof. Galia Debelouchina](#) from the University of California, San Diego, pictured at right. Further details and virtual connection information can be found at the NJACS NMR topical group [website](#).

The NMR Spectroscopy group met remotely on January 20, 2022 for a presentation by Dr. Thomas Osborn Popp, a postdoctoral fellow at Rutgers University and also the Co-Chair of the NMR Topical Group. Dr. Popp discussed the application of NMR to complex structures, specifically metal-organic frameworks (MOFs), which are porous materials composed of metal clusters and organic linkers. NMR can elucidate the mixtures of moieties that decorate the surfaces of the metal clusters and the mixtures of functional groups that are appended to their linkers. During his seminar, Dr. Popp also discussed his development of NMR hardware, including a homebuilt diffusion NMR probe and 3D-printed devices for performing solid state magic angle spinning NMR experiments using spherical rotors.

The attendance was strong with 31 attendees at the virtual seminar. The talk was well-received and followed by several thoughtful and specific questions during the Q&A. Jonathan Williams, Co-Chair of the NMR Topical Group, said that it set a "high bar to start off our year".



**MEET ALAN COOPER****NJACS EXECUTIVE BOARD MEMBER AND DIVISION III CAUCUS CHAIR**

By Sandra Keyser

Alan Cooper has been a member of the ACS since 1974, served as the Chair for the NJACS Organic Topical Group in 1995 and acted as Chair for our Local Section in 1998. Alan is an influential, steadfast and committed Executive Board Member, and fortunately for us, he was amenable to doing this interview.

*You've been an active chemist for several decades now. Could you give us a short biography about your career as a chemist?*

I joined Schering-Plough in 1973 as a BS Chemist. Though I had had offers for quality control positions at different companies, I decided to go into research: aminoglycoside anti-infective research (antibiotic, antifungal, antiviral). Schering-Plough had a program where they would allow me time off to go back to school, as well as conduct experimental research at Schering-Plough, so I went to Rutgers for my Masters and then my PhD. I was also involved in oncology research in my last ten years in industry.

Merck took over Schering-Plough in 2009, and I worked for another 2-2.5 years at Merck. I decided to retire and go into consulting. Now I consult with two startup biopharmas, one of which is entering clinical trials and the other is just starting out. I also work with Law Firms as an expert witness.

*How did you get involved with NJACS and the ACS?*

While I was at Schering-Plough, I attended the Organic Topical group meetings, where we would hear lectures once a month. Around 50 people would attend these meetings, coming from Novartis, Bristol Meyer Squibb, Schering-Plough, Merck and other pharmaceutical companies. One day, the Organic Topical Group Chair, John Piwinski, asked me, "Alan, do you want to run for Chair?" I didn't think I'd win, since 5 other people were running, but I got it. I enjoyed the experience, interacting with everyone and bringing in speakers. A year later, Valerie Kuck in NJACS asked me to run for Chair of the section. I ran for Chair and won the election! Back then, you automatically became a section Councilor when you became a chair, which then gets you involved with the National Committees.

*What is your role on the NJACS Executive Board?*

I'm a Councilor, and I represent the North Jersey section at the National Council Meetings. I attend Executive Committee Meetings, chair the Website Committee, run the Annual Planning Meeting in the late fall, volunteer for a variety of committees like the Baekeland Committee. I've taken part in the Lifetime Achievement Nominating Committee, the Indicator Committee, Organizing Committee for symposia, and served as Co-Chair for the 2005 Mid-Atlantic Regional Meeting at Rutgers.



## MEET ALAN COOPER (continued)

*What NJACS programs are you looking forward to the most in 2022?*

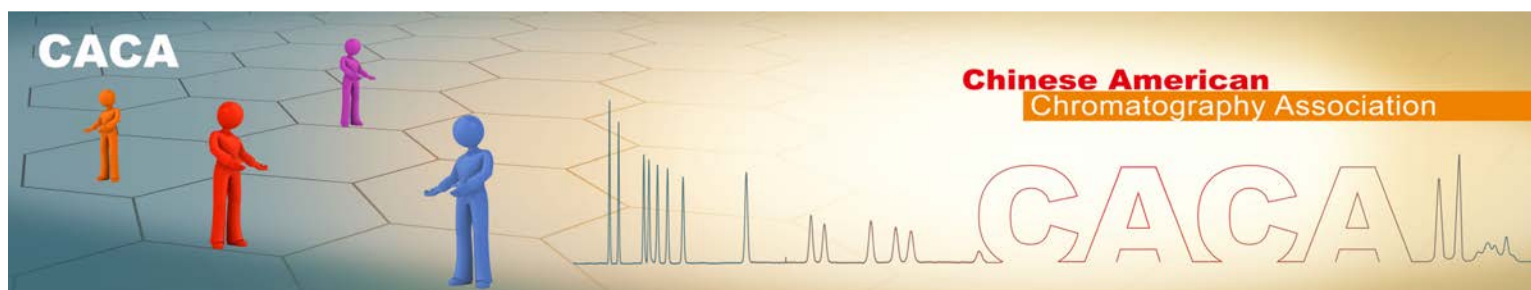
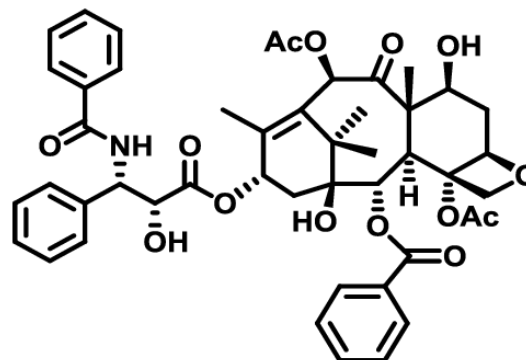
The Baekeland. It'll be our first in-person meeting in two years, and all the speakers have confirmed that they will be coming. *The Baekeland Symposium will be held on May 12, 2022.*

*You have served on more national ACS committees than any other person I know. Which committee was the most interesting or enjoyable to you and why?*

I have served on a lot of committees. The Committee on Committees (ConC) was my favorite. You have to be elected by the Council to serve on ConC. On ConC, you overlook two committees and attend their biannual meetings. You get to know all the committee members, rate their involvement, ensure that each member is doing their volunteer work, and appoint

*What is your favorite molecule?*

Every molecule is great, but if push comes to shove, my favorite molecule is taxol and its derivative paclitaxel, structure shown at right. It is a natural product with a very complex structure, and can be made synthetically. The biology and how it works is amazing.



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**CHEMISTS CELEBRATE EARTH WEEK 2022 – NORTH JERSEY ACS**

## *Think Green Live Green*

*Chemists Celebrate Earth Week - April 17 – 23, 2022*

*An Online Outreach Event by NJACS*

*Science Teams*

*from local colleges, high schools, and middle schools  
are invited to join us to celebrate Earth Week by  
Presenting demos and/or hands-on activities online for all ages  
related to*



*The participants are encouraged to be creative  
To develop activities that showcase  
the multi-disciplinary nature of science and technology.*

*To Participate in this event simply create video recordings of  
your activity(s) and post it on YouTube by April 23, 2022  
Email the YouTube link to [mitachaki@gmail.com](mailto:mitachaki@gmail.com)*

*Best activity(s) will be recognized with  
People's Choice Award(s) (\$200 & \$150) and certificate(s)  
Please refer to the following guidelines to develop activities.*

*To discuss activities please contact  
Dr. Keyser at [sandrakeyser@gmail.com](mailto:sandrakeyser@gmail.com) and arrange a zoom meeting*



## NEW YORK SECTION MEETINGS

### BOARD MEETING DATES FOR 2022

All 2022 Board Meetings will be held as hybrid meetings from the Iona College campus ([directions](#)). Prof. Kathleen Kristian will Chair all meetings. The meetings will start at exactly 6:30 PM. The meetings are open to all – everybody is welcome, but an RSVP for in-person attendance is required 5 days before the meeting, the Wednesday before the Monday meeting. All members who would like to attend any of the meetings should inform the New York Section office by emailing Ms. Bernadette Taylor.

**Monday, March 28, 2017** (hybrid)

**Friday, April 8, 2022** (virtual)

William H. Nichols Symposium and Medal Award Dinner

**Monday, June 13, 2022** (hybrid)

**Monday, September 19, 2022** (hybrid)

**Monday, November 21, 2022** (hybrid)

Please note that there will also be a virtual meeting of the Finance Committee on Thursday, **November 10, 2022**.

More information will be posted in future monthly issues of [The Indicator](#) and on the [New York ACS website](#).


### THE CHEMISTRY OF LOVE

The New York ACS is celebrating Valentine's Day virtually this year with a program supported by an Innovative Project Grant from the Local Section Activities Committee. Keynote speaker Prof. Eric Chang will discuss the the chemical and biochemical aspects of love including the impact of endorphins and how fragrances and flavors play a role. [Registration](#) is FREE for this in-person event, but *seats are limited* so [register](#) early.

**Speaker:** Dr. Eric Chang  
Pace University

**Date:** **Saturday, March 25, 2022**  
**Place:** Bianco Room, Pace University  
**Time:** 11:00 AM – 2:00 PM in person  
[Registration](#) is required

Supported in part by an Innovative Project Grant  
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ACS Local Section  
New York  
The Chemistry of Love

*The Chemistry of Love*

Pace University

March 25, 2022 11:00 am - 2:00 pm  
Bianco Room



There is a holiday dedicated to it, millions of poems about it, industries built around it, and no other word to perfectly describe it: LOVE. This four-letter word is the most fundamental human need.

What are the chemical aspects of "love"?

Learn and discuss endorphins and how to increase this important hormone, foods that release endorphins and the biochemical process involved, flavors and scents associated with "LOVE" and the chemical components of such, and the beautiful and complex human heart.

Keynote Speaker  
Dr. Eric Chang

For more information, contact:  
Dr. JaimeLee Riggo  
Coordinator, "Chemistry of Love"  
[jriggo@pace.edu](mailto:jriggo@pace.edu)

**WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM & AWARD PRESENTATION****Minerals, Microbes, and Metalloenzymes:  
Inorganic Chemistry at the Interface**

A virtual symposium honoring

**Distinguished Professor Alison Butler**

University of California – Santa Barbara  
*for pioneering contributions to marine  
bioinorganic chemistry*

**Date: Friday, April 8, 2022**  
Time: 1:30 PM – 7:00 PM (ET)

[Register here](#)

**Symposium Program**

- 1:30 PM Welcome**  
*Professor Kathleen Kristian, 2022 New York ACS Chair, Iona College*
- 1:35 PM Opening of the Distinguished Symposium**  
*Professor Mary Virginia Orna, 2022 New York ACS Chair-Elect, College of New Rochelle*
- 1:45 PM Where Inorganic and Medicinal Chemistry Meet**  
[\*Professor Seth Cohen\*](#), *Department of Chemistry & Biochemistry,  
University of California – San Diego*

The role of metal-dependent enzymes (a.k.a., metalloenzymes) in biological systems is quite ubiquitous and as such, metalloenzymes play widespread and varied roles in human disease. More than one-third of all enzymes are metalloenzymes, but less than 7% of all FDA-approved drugs engage these valuable therapeutic targets. To advance the development of small molecule therapeutics against metalloenzymes, our laboratory has spent nearly two decades bringing together concepts in inorganic and medicinal chemistry. These efforts have culminated in the utilization of fragment-based drug discovery (FBDD) for metalloenzymes, the development of metal-binding pharmacophores (MBPs), and the introduction of metal-binding isosteres (MBIs), among other discoveries. This presentation will highlight our journey blending inorganic and medicinal chemistry and our latest efforts to see these concepts have a clinical impact on human disease.

*Supported in part by the William H. Nichols Fund For Chemistry at the Boston Foundation*

## ***WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM & AWARD PRESENTATION*** ***(continued)***

### **2:30 PM Redox Control of the Immune Response by Indoleamine 2,3-Dioxygenase** *[Professor John T. Groves](#), Hugh Stott Taylor Chair of Chemistry, Princeton University*

Indoleamine 2,3-dioxygenase (IDO1) is a heme protein that accounts for ~95% of tryptophan metabolism. The first intermediate in this signaling pathway is N-formylkynurenine, which is subsequently transformed into kynurenine and eventually into niacin and NAD. IDO1 is highly upregulated in response to the aryl hydrocarbon receptor and cytokine-induced inflammation. Significantly, many types of cancer cells over-express IDO1 to deplete tryptophan, which inactivates surrounding immune cells through the combined effects of low tryptophan and higher concentrations of kynurenine. T-cells are especially sensitive to low tryptophan concentrations, causing them to decrease proliferation and to differentiate into immunosuppressive regulatory states. Inhibitors of human IDO1 have been widely explored as a potential means to defeat the ability of cancer cells to avoid immune detection. This kynurenine pathway also affects a wide variety of other processes including autoimmune disorders, response to infection, tolerance in transplantation, HIV infection and blood pressure regulation. In this lecture, I will discuss recent results aimed at elucidating modes of IDO activation and inhibition. In particular, we will discuss IDO1 reaction pathways and reactive intermediates, redox-triggered inactivation, heme loss and the surprising activation of IDO1 by physiological levels of polysulfides

### **3:15 PM Biosynthesis of a Copper-Chelating Natural Product** *[Professor Amy Rosenzweig](#), Weinberg Family Distinguished Professor of Life Sciences, Departments of Molecular Biosciences and Chemistry, Northwestern University*

Methanobactins (Mbns) are copper-binding natural products currently under investigation as therapeutics for diseases of copper metabolism. Mbns are ribosomally produced, post-translationally modified peptide (RiPP) natural products generated from a precursor peptide, MbnA. The known and predicted Mbn structures are diverse, but all Mbns characterized thus far bind copper with two nitrogen-containing heterocycles and two neighboring thioamide groups. These moieties are generated from cysteine residues in MbnA by an iron-containing heterodimer of the MbnB and MbnC proteins (MbnBC). Progress toward elucidating the oxidation state and nuclearity of the MbnBC iron active species as well as the molecular details of how MbnB and MbnC interact with one another and bind the MbnA precursor peptide substrate will be presented.

### **4:00 PM From Microbes to Mussels: Bioinorganic Chemistry in the Marine Environment** *[Alison Butler](#), Distinguished Professor, **Nichols Medalist**, Department of Chemistry & Biochemistry, University of California – Santa Barbara*

The bioinorganic chemistry of the marine environment reflects the chemical composition in which organisms have evolved. The transition metal ion composition of the surface ocean differs remarkably from terrestrial environments, with molybdenum being the most abundant transition metal in surface seawater followed by vanadium. By contrast, iron is particularly low, yet despite its paucity, iron is essential to marine organisms. Many marine microbes have evolved siderophores to sequester Fe(III) with intriguing properties, including photoreactive and surface-adhesive groups. This talk will cover the progression of our work in marine bioinorganic chemistry, from vanadium haloperoxidases to our recent work on the biosynthesis of siderophores, and to applications of siderophore analogs in wet adhesion as mimics of the mussel foot proteins mussels use to adhere to rocks in the intertidal zone of the ocean.

### **5:30 PM The Medal Award Ceremony** *Professor Kathleen Kristian, 2022 New York ACS Chair, Iona College, *presiding**



## ***WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM & AWARD PRESENTATION (continued)***

### **DR. ALISON BUTLER**

#### ***2022 William H. Nichols Medalist***

[Professor Alison Butler](#) was an undergraduate chemistry major at Reed College (BA 1977) and a graduate student in Chemistry at the University of California, San Diego (PhD 1982). Following postdoctoral fellowships in the laboratories of Joan S. Valentine at UCLA and then Harry B. Gray at Caltech, she began her independent career in the Department of Chemistry at UC Santa Barbara in 1986. She progressed through the ranks to her current position of Distinguished Professor of Chemistry and Biochemistry at UC Santa Barbara.

Her research program is focused within Bioinorganic Chemistry and Chemical Biology. Early on she recognized the unusual transition metal ion composition of the ocean would likely lead to discoveries of new metalloenzymes and new bioinorganic chemistries, with an abundance of molybdenum and vanadium, and a remarkable paucity of iron. She started off working on the first vanadium-containing enzyme, a haloperoxidase, which is found in most marine algae and many marine microbes. Initially she focused on elucidating not only the catalytic role of the vanadium (V) reaction site, but also the enzyme's role in the stereospecific bromocyclization of terpenes forming marine natural products.

The low iron levels in open ocean waters continued to intrigue Professor Butler, because nearly all bacteria require iron to grow. In research spanning the last 20 years, the Butler research group has discovered new classes of siderophores and new reactivities of these oceanic siderophores. (Siderophores are chelating ligands produced by bacteria to facilitate iron acquisition). The marine siderophores tend to be defined by 1) large suites of amphiphilic (acylated) siderophores that can partition into bacterial membranes or self-assemble into micelles and vesicles and/or 2) siderophores containing an  $\alpha$ -hydroxycarboxylic acid group (such as  $\beta$ -hydroxyaspartic acid or a citric acid group) which when coordinated to Fe(III) is photoreactive. These results led to two landmark papers published in *Science* in 2000 and in *Nature* in 2001. As an extension of this work, Alison Butler's research group turned to investigating catechol siderophores and synthetic analogs as new wet adhesive agents, mimicking the DOPA-containing mussel foot proteins in adhesion to rocks in the ocean (*Science* 2015). Most recently, Professor Butler's research group has turned to microbial genome mining with a focus on revealing stereospecific biosynthetic routes of certain chelating groups in siderophore ligands (PNAS 2019), as well as formation of chiral iron complexes.

Professor Butler is an elected Fellow of the American Academy of Arts and Sciences (2019), the Royal Society of Chemistry (2019), the American Chemical Society (2012), and the American Association for the Advancement of Science (1997). She has also been recognized with the 2018 ACS Alfred Bader Award in Bioorganic or Bioinorganic Chemistry, a 2019 ACS Cope Scholar Award in organic chemistry, and the 2019 Inorganic Reaction Mechanisms Award of the Royal Society of Chemistry. She has served as President of the Society for Biological Inorganic Chemistry (2012-2014) and Chair of the Chemistry section (Section C) of the American Association for the Advancement of Science (2012-2013). She completed a term as Chair of the ACS Division of Inorganic Chemistry in December 2021.

*Many thanks to the Nichols Family for their support over the past century*

## LONG ISLAND SUBSECTION

### ***Roles of advanced oxidation processes in eliminating contaminants of emerging concern in water and wastewater***

**Speaker:** **Dr. Dionysios (Dion) D. Dionysiou**  
Environmental Engineering and Science Program  
University of Cincinnati

**Date:** **Thursday, March 3, 2022**

**Time:** 6:00 PM via [Zoom](#)

**Cost:** Complementary

[Download Flyer](#)

**Abstract:** In this presentation, Professor Dionysiou will provide a summary of the role of advanced oxidation processes (AOPs) for the treatment of contaminants of emerging concern. AOPs are based on the generation of hydroxyl radicals that are highly reactive and can degrade most organic contaminants. AOPs are effective alternative options for the treatment of recalcitrant organic pollutants that cannot effectively degrade in biological treatment processes or organic compounds that are difficult to adsorb on sorbents in conventional adsorption processes. Therefore, AOPs find various applications as complementary processes in drinking water, municipal wastewater, industrial wastewater, hospital wastewater, and water reuse treatment trains. In addition of hydroxyl radical, other reactive species are generated in AOPs and their role is gaining increasing attention. These include sulfate radical, carbonate radical, reactive chlorine species, and reactive nitrogen species. These reactive species are more selective than hydroxyl radicals and their reactivity with specific functional groups and reaction pathways are of high importance and topics of active research. Discussion will include advantages and challenges of various AOPs for the removal of CECs, including pharmaceuticals and personal care products, cyanotoxins, and pesticides. The formation of disinfection byproducts and alternation of cytotoxicity during AOPs will be presented. Specifically, the role of AOPs on water reuse will be discussed and evaluated. Finally, Professor Dionysiou will present an example of combined advanced reduction technologies (ARTs) with AOPs for the treatment of persistent per- and poly-fluoroalkyl substances (PFAS), known as “forever chemicals”.



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Thermal	Defects
Polymers	Castings
Chemicals	Corrosion
Metal Phases	Quality Check
Contaminations	Product Failure
SEM - EDS	DSC - TGA
AUGER	ESCA
FTIR	XRD

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**HUDSON-BERGEN SUBSECTION****23<sup>RD</sup> ANNUAL STUDENT RESEARCH SYMPOSIUM - CALL FOR ABSTRACTS**

This is a virtual forum for students and their faculty mentors from colleges and universities that participate in the subsection's activities to present the results of their research. Outstanding graduating students are also being recognized (they receive the Hudson-Bergen Chemical Society Award consisting of a certificate and a gift certificate). All the presenters will receive certificates of participation. Students who wish to present posters must send an abstract via e-mail to [mleonida@fdu.edu](mailto:mleonida@fdu.edu), by **April 4, 2022**. The abstract should be in MS Word (font Times New Roman 12) and must include the names and addresses of the student(s) and their faculty adviser(s) in addition to the title of the abstract. The abstract should not exceed 200 words. The name of the student presenting the poster should be underlined. **There is no registration fee.**

This year's symposium will feature the lecture:

**Semiconductor Process Development:  
Chemistry to Industry and Beyond**

*presented by*

**Dr. Sandani Samarajeewa**  
Intel Corporation



**Date:** **Friday, April 22, 2022**  
via [Zoom](#)

**RSVP:** **By April 4, 2022 via** email to  
[Dr. Mihaela Leonida](#) or  
[Mr. Thomas Drwiega](#)

**Times:** 3:00 PM – Student Presentations  
5:00 PM – Awards  
5:15 PM – Speaker Lecture

**Abstract:** At Intel, we define the Moore's Law, which states that the number of transistors in a dense integrated circuit (microchip) doubles with the introduction of every new technology. Today's advanced microchips, at about the size of a penny, contain billions of small transistors and interconnecting wires that spread over 30 miles if untangled. This is fascinatingly mind-blowing! The chip-making process has two main parts—the front-end of line that builds the transistors/ capacitors and the back-end of line that joins these front-end components with each other to flow signals. The back-end inter-connects that are closest to the transistors need to be especially small so that they can connect the very closely packed transistor features. This presentation will focus on the use of fundamental chemistry and physics concepts for applications in the semiconductor industry. The discussion will dive into plasma etch chemistry techniques that were developed to fabricate small feature sizes within the back-end interconnect layers and thin film deposition/electroplating inventions that were utilized to fulfill the conductivity/resistance requirements within the shrinking dimensions. This seminar will end with a discussion on career opportunities in the industry for graduates with backgrounds in science and engineering.



## **CALL FOR ABSTRACTS: 2022 VIRTUAL UNDERGRADUATE RESEARCH SYMPOSIUM**

The Student Activities Committee of the New York Section of the American Chemical Society invites you to attend the 68<sup>th</sup> Annual Undergraduate Research Symposium ([URS](#)). This virtual symposium will take place from **9:30AM – 1:00 PM on Saturday, May 7, 2022**. The URS provides an excellent opportunity for undergraduate chemistry students in the New York Metropolitan Area to present the results of their research.

Abstract submission is open – [download the template here](#).

**Abstract submission deadline: April 1, 2022**  
**Registration Deadline: April 15, 2022**



## **SEMINAR SPEAKERS WANTED**

The New York Section wants to add to our Speakers Bureau database of local speakers who are available for Section-wide seminars and symposia. If you have an area of research or interest that would provide an interesting talk appropriate for our Section members, and would like to be included in our Speakers Bureau, please send an email to [Ms. Bernadette Taylor](#) with the following information that will be posted on the Section's website: your name, affiliation, a seminar title, and 5-6 words briefly summarizing your area of specialty. We look forward to hearing from you about topics that you wish to share with your fellow members!

## **WESTCHESTER CHEMICAL SOCIETY DISTINGUISHED SCIENTIST AWARDEE**

The Westchester Chemical Society is honored to announce that its 2022 Distinguished Scientist Award is granted to Dr. Marc Walters, long-time Professor of Chemistry at New York University where he is a dedicated teacher and research mentor of graduate and undergraduate students. A resident of New Rochelle and as a bioinorganic scientist, Dr. Walters researched the assembly of micelles for catalysis and biomedical applications and has significant expertise in spectroscopic methods for their characterization. He has published 50+ articles and book chapters on his work. Dr. Walters has a strong record of service to his department and university, including as founding Chair of the Department's Diversity Committee. He has also served the wider scientific community, especially the American Chemical Society, including a term as the Chair of the ACS New York Section.

The 2022 Distinguished Scientist Award will be presented to Dr. Marc Walters on Thursday, April 28, 2022. At that same event, Dr. Walters will give a talk on his research and the Student Awards of the Westchester Chemical Society will also be handed out. This event will either be a hybrid of an in-person event and Zoom event or an all-virtual event. The decision about the type of event and details of the event will be available shortly. Please note that attendees of any in-person event will have to be fully vaccinated (with booster) and wear masks at the event.

**The Indicator is posted  
to the web 1<sup>ST</sup> of the  
month at**

<http://www.theindicator.org/>

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## MEETING REPORTS

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### 2022 NEW YORK SECTIONWIDE CONFERENCE

The New York Section's Annual Sectionwide Conference was held virtually on January 29<sup>th</sup>. The conference was an excellent opportunity to meet with colleagues and ACS friends after another successful year. The conference included award presentations, an outstanding keynote address, introductions of the 2022 election candidates, and planning sessions for the Section's 2022 activities. Prof. Kathleen Kristian, New York Section Chair for 2022, welcomed everyone and acknowledged the outstanding service of the Section's volunteers during 2021.

### PROF. RITA UPMACIS THANKED FOR HER SERVICE AS SECTION CHAIR

At the Sectionwide Conference award ceremony, Prof. Rita Upmacis of Pace University (right) received a well-earned ACS past chair pin along with an engraved ACS plaque in thanks for her excellent and dedicated service to the New York Section as its Chair in 2021. Her fellow members of the New York ACS wish her continued success in her new role representing the NYACS as one of its Councilors.



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*thank you*

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### 2021 OUTSTANDING SERVICE AWARD PRESENTED TO PROF. ALISON HYSLOP



The 2021 Outstanding Service Awardee, Prof. Alison Hyslop, St. John's University, was honored for her extraordinary service and dedication to the Section. Alison has made long-standing and significant contributions to the New York ACS ranging from the Undergraduate Research Symposium, MARM 2016 & 2020, Chemagination, and service as Chair in 2016. She is currently the Chair of the NYACS Educational Activities Committee and serves as a Councilor on the Member Affairs Committee.



## ***NEW YORK SECTIONWIDE CONFERENCE (continued)***

### ***OUTSTANDING CHEMISTRY TEACHING AWARDS***

The three college chemistry teaching awards were presented as follows (pictured left-to-right): Outstanding Four-Year University with Graduate School Chemistry Faculty Teaching Award to Dr. Aaron Moment, Columbia University; Outstanding Four-Year Undergraduate College and University Chemistry Faculty Teaching Award to Dr. Ipsita Banerjee, Fordham University; and Outstanding Two-Year College Chemistry Teaching Award to Dr. Kevin Kolack, Queensborough Community College. The Section also presented the Nichols Foundation High School Chemistry Teacher Award to Jamila Rukiya Baly Harris (pictured at right), Thurgood Marshall Academy for Learning and Social Change. Linda Atkins was recognized for her many years of service as Editor of The Indicator with the ACS Salute to Excellence Award. Congratulations to all the awardees!



Following the award ceremony, Prof. Mary Virginia Orna, 2022 New York Section Chair-elect, presented the names of the candidates for the upcoming 2022 elections and introduced the candidates who were attending the meeting.

### ***DR. MATT GUNSCH DELIVERS KEYNOTE ADDRESS***

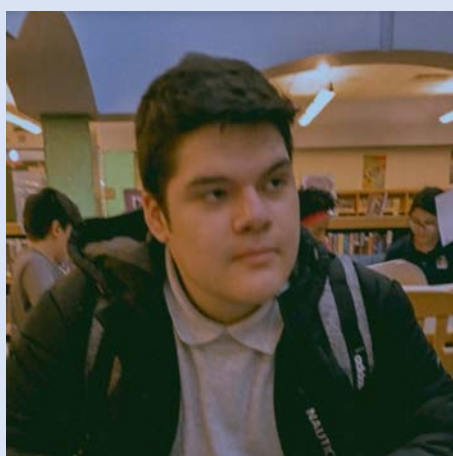
Dr. Matt Gunsch (pictured at right), Senior Scientist, Analytical Research & Development, Merck Research Laboratories, gave the Keynote presentation on “Analytical Challenges during Biocatalytic Synthesis of Active Pharmaceutical Ingredients.” The audience thoroughly enjoyed his informative and illuminating presentation; there were plenty of questions and good discussion afterwards.





**NEW YORK SECTIONWIDE CONFERENCE (continued)****PROJECT SEED STUDENTS PRESENT THEIR RESEARCH**

Following the keynote there were two video presentations by New York Section Project SEED Students James Pelaez (junior) – mentored by Prof. Victor Batista, Yale University and Daymieri Narvez (senior) – mentored by Prof. Ged Parkin, Columbia University. James' research was titled: *Competition between Common Aquatic Chemical Species and Ammonia for Catalytic Oxidation Reaction*. Daymieri's presentation was on *Variation of Metal-Halogen Bond Lengths Reveals the True Identity of a Zinc Bromide Compound*. We wish both of these young scientists the best of luck with their future scientific endeavors and hope they will continue to be a part of ACS NY.

**James Pelaez**

*Research Mentor:* Dr. Victor Batista  
Yale University

**Daymieri Narvaez**

*Research Mentor:* Dr. Ged Parkin  
Columbia University

**PLANNING SESSION**

The annual planning session for the Educational Activities, Member Affairs, Program Review and Public Affairs committees of the New York Section was held during the last portion of the conference, to discuss goals and activities for 2022. Each committee chair gave a recap prior to close the Sectionwide Conference. Thank you to all who attended the meeting and we look forward to “seeing” you at future events.



Dr. Claudia Conti

My job title is  
Conservation Scientist  
but...

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Spectroscopist.**

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Society and connect  
with other  
spectroscopists.

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

**CHEMISTS CELEBRATE EARTH WEEK 2022 – NEW YORK ACS**


Join the New York ACS on **Saturday April 23, 2022**, at New York's famous Jones Beach as we celebrate Earth Week at the newly renovated [Energy and Nature Center](#)! The day's event includes an introduction of Jones Beach by the Education Team, a tour of the Nature Center, a self-guided hike through the beach and preserve area, as well as snacks, lunch, and cool earth day gifts!

Space is limited and everyone must register (including children). **Registration is FREE.** Once registration has reached capacity it will be closed. [Click here to register now.](#) For more information contact: [Prof. JaimeLee Rizzo](#), CCEW Coordinator.



**Date:** **Saturday, April 23, 2022**  
[Register here for FREE](#)  
 Register by April 3, 2022

**Time:** 11:00 AM – 2:00 PM



**New Jersey Association of Forensic Scientists 2022 Spring Seminar**  
**“Canines in Forensics”**  
**May 6<sup>th</sup>, 2022 8:00AM – 3:30PM at the Lambertville Inn, Lambertville, NJ**

**Speaker Topics to Include:**

See Our Website:  
[NJAFS.org](http://NJAFS.org) for More Information

**The birth of K-9 Units in NJ**  
**Training and focus for K-9**  
**Science of K-9 Olfactory**  
**Drug dogs, Arson dogs**  
**Case studies**

Registration Includes: President's Reception (05/05/22), Continental Breakfast, Break, Luncheon, and Certificate

**COMMITTEE ON THE HISTORY OF THE NEW YORK LOCAL SECTION**

Over the past twenty-three years the New York Section has participated in the designation of seven National Historic Chemical Landmarks and four New York Section Historic Chemical Landmarks. A brief description of these National and local section landmarks may be found on the NY Section [website](#). These landmark programs recognize achievements in the chemical sciences and related areas, in order to enhance public appreciation for the contributions of the chemical sciences to modern life.

Please consider making a nomination for an historic chemical landmark. The Committee on the History of the NY Section will consider all nominations. In addition to a particular achievement, an historic library, building or association may be worthy of this distinction. Please send your nomination, with supporting documentation, to the Committee Chair, [Dr. Neil Jespersen](#).

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## OPPORTUNITIES

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### GRANT OPPORTUNITIES

#### ACS PETROLEUM RESEARCH FUND



Grant proposals for funding fundamental research in the petroleum field are now being accepted.

**DUE MARCH 11, 2022**

[Learn more](#)

#### SENIOR CHEMISTS MINI-GRANT

Local Sections may request \$500 to support an event or activity to increase the engagement of senior members.

**DUE MAY 31, 2022**

[Learn more](#)

#### MEMBER ENGAGEMENT THROUGH TECHNOLOGY (METT) GRANT

Local Sections may request up to \$2000 to support the use of technology to more fully engage their current membership and to enhance their member recruitment efforts.

**DUE MAY 31, 2022**

[Learn more](#)

### AWARDS

#### WOMEN CHEMISTS COMMITTEE OVERCOMING CHALLENGES AWARD

Recognizes an individual undergraduate for her efforts in overcoming hardship to achieve success in chemistry

**DUE APRIL 1, 2022**

[Learn more](#)

### SCHOLARSHIPS

#### ACS HACH POST-BACCALAUREATE TEACHER SCHOLARSHIP

Provides up to \$6,000 in financial support for recent graduates and graduate students with an interest in becoming secondary chemistry teachers.

**DUE APRIL 1, 2022**

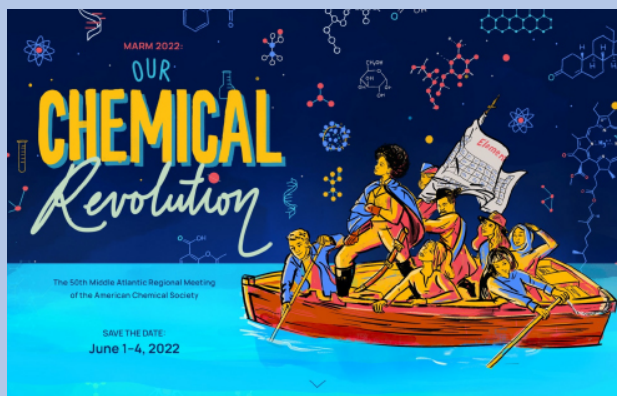
[Learn more](#)

#### ACS HACH SECOND-CAREER TEACHER SCHOLARSHIP

Provides up to \$6,000 in financial support for chemistry professionals to obtain their masters degree in education or teacher certification in chemistry.

**DUE APRIL 1, 2022**

[Learn more](#)



**Abstracts due March 7<sup>th</sup>**

### 2022 MARM AWARD NOMINATIONS

- [ACS Division of Chemical Education Middle Atlantic Region Award for Excellence in High School Teaching](#)
- [E. Ann Nalley Middle Atlantic Regional Award for Volunteer Service to the ACS](#)
- [E. Emmet Reid Award in Chemistry Teaching at Small Colleges](#)


**DUE MARCH 9, 2022**



## FOR UNDERGRADUATES

The [ACS Bridge Program](#) is accepting applications for 2021-2022 ACS Bridge Fellows. Enroll in a 1 to 2 year Bridge Experience that provides research experience, advanced coursework, mentoring, & coaching to prepare your graduate school application. **Application Deadline is March 31, 2022**

[More info here](#)



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Learn more and apply at  
[www.ACS.org/BridgeProgram](http://www.ACS.org/BridgeProgram)

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in the chemical sciences.



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Undergraduate  
Researchers!**



You are invited to present your work at:

**2022 Eastern Colleges Science Conference**

Saturday, April 2, 2022

Iona College, New Rochelle, NY

For details and registration information visit:

<https://ecsc1.org/>

ECSC welcomes submissions in:

- Biology
- Chemistry
- Mathematics
- Physics
- Engineering
- Computer science
- Behavioral and social sciences



## FOR GRADUATE STUDENTS

Graduate students and recent graduates are invited to apply for the Communicating Science Flagship Workshop of 2022 to be held August 4-6 in Cambridge, MA. Application, registration, and attendance at the workshop is free of charge for accepted applicants. Applications are accepted through **April 1<sup>st</sup>**.

[More info](#)



COM  
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CON 2022

Flagship Workshop

#COMSCICON22

**FOR GRADUATE STUDENTS (continued)**

[The International Younger Chemists Network](#) has launched a new mentoring program for PhD students in chemistry. Learn how you can become a mentor or mentee and advance your career development: Applications are accepted through **March 31<sup>st</sup>**.

[Sign up here](#)



Graduate students, do you want to help undergraduates? The ACS is looking for graduate students to share their experiences and points of view with undergraduates considering graduate study. Volunteer to join a discussion table at 'The Graduate School Experience: What to expect' on **Sunday March 20, 2022 3:15 PM – 4:45 PM ET**

[Apply now](#)

The BlackinChem Postdoctoral Fellowship provides \$75,000 of support for three years. This funding can also be used to bridge to a tenure-track position at which point it increases to \$100,000 per year. Information sessions will be held in July 2022 and the deadline for a letter of inquiry is **August 1, 2022**.

[Learn more](#)

**RESEARCH SCRAMBLE : ELEVATOR TALKS BY 20 GRADUATE STUDENTS**

Join the New York / New Jersey Section of the Society for Applied Spectroscopy, the Coblenz Society, for an exciting series of talks by select graduate students from Europe and North America. This 'Research Scramble' will be held virtually at **12:00 AM EST on March 3, 2022** via [Zoom](#).

A second Research Scramble will be held in May.

[More details](#)





## NEWS FROM AROUND THE ACS

### Northeastern Section

Prof. Jacqueline K. Barton of the California Institute of Technology will be presented with the Theodore Williams Richard Award and Medal for Conspicuous Achievement in Chemistry on Thursday, March 10, 2022.



### Puget Sound


Join the Puget Sound Local Section for Chemistry Quiz Nite on **Thursday, March 10, 2022 from 10:00 – 11:00 PM ET.**

[Zoom link](#)

ACS Local Section  
Puget Sound

**Chemistry Quiz Nite With Host Kerry Fowler**  
Thursday, March 10, 2022, 7-8 pm Pacific Time

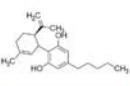


JOIN HERE:  
<https://us02web.zoom.us/j/82786781452?pwd=UW1hMXdmYjBmFmdC9FcXN4bEVyUT09>



**Kerry Fowler**

Kerry Fowler is a recently retired medicinal chemist. He is a 46-year member of ACS, past Chair of the Puget Sound Section and member of the Senior Chemists Committee. He received his Bachelor's and PhD from Yale University. His musical interests include performing classical, jazz and rock.

Join Kerry for a fun evening of chemistry trivia and win prizes.

Who am I?  Does this look like Jellyfish?  Who is this famous person? 

Hosted by the Puget Sound Section Senior Chemists Committee  
For inquiries email: [strongdespina@gmail.com](mailto:strongdespina@gmail.com)

### Younger Chemists Committee

The YCC presents 'A Day in the Life of a Synthetic Chemist' on **Thursday, March 10, 2022 from 7:00 – 8:00 PM ET.**

[Zoom link](#)

ACS Chemistry for Life<sup>®</sup> YCC  
The Future of Chemistry

**A Day in the Life of a Synthetic Chemist**



Dr. Isaiah Speight is a native of the Hampton-Roads area of Virginia. He earned his B.S. in chemistry in 2016 from Norfolk State University. During this time, he did undergraduate research in polymer and carbohydrate synthesis. As a Ph.D. student at Vanderbilt University, Isaiah developed new mechanochemical methods for making inorganic and organometallic compounds. Currently, Isaiah is a NIGMS Postdoctoral Fellow at University of California, Irvine in Prof. Vy Dong's group. His research focuses on the development of new technologies for amide reduction and bond formation. In addition to his bench work, Isaiah works very closely with the National Organization for Black Chemists and Chemical Engineers. He works to continue to create communities for black scientists to thrive in as well as build connections to create new opportunities for these students to be successful in.

March 10<sup>th</sup>  
7 – 8 pm EST

Scan to register: 

Hosted by the Puget Sound Section Senior Chemists Committee  
For inquiries email: [strongdespina@gmail.com](mailto:strongdespina@gmail.com)

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Chemistry for Life<sup>®</sup>  
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Visit [CFDV.org](http://CFDV.org) for more information!



Monthly Seminar Series & Other Events: <https://cfdv.org/events>



**FREE Virtual Online Symposium: April 12<sup>th</sup> & 14<sup>th</sup>, 2022**  
"Green Approaches & Applications Of Chromatography"  
\*\*Including Student Poster Session\*\*



Networking and Career Development Opportunities

**37<sup>th</sup> National Medicinal Chemistry Symposium**

ACS Chemistry for Life<sup>®</sup> Division of Medicinal Chemistry

New York City, NY, United States  
June 26-29, 2022

**THE SPEAKERS ARE ANNOUNCED!**



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



**The Chemistry Laboratory:  
Evaluation, Assessment & Research**

Thursday 21<sup>st</sup> April 2022

**SAVE THE DATE**

**An online Symposium on Education  
in the Chemistry Laboratory**

Thursday 21<sup>st</sup> April 2022

Register now:  
<https://clear22.eventbrite.com.au>

Queries:  
Dino.Spagnoli@uwa.edu.au  
Nicole.Graulich@dc.jlug.de  
nburrows@monmouth.edu

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**The Chemistry Laboratory:  
Evaluation, Assessment & Research**

Thursday 21<sup>st</sup> April 2022  
10 am - 3:50 pm (BST)

An online symposium on education in the chemistry laboratory

10.00am POSTER SESSION 1  
10.50am Welcome

**11.00am Keynote: Prof. Gwen Lawrie** *University of Queensland*  
*Finding a CURE! Learning outcomes in laboratory course-based undergraduate research experiences*

**11.40am Marco Reith & Prof. Andreas Nehring**  
*Leibniz University Hannover*  
*Fostering scientific reasoning competencies in an introductory lab course: Evidence-based design of a learning sequence in general chemistry*

**12.05pm Dr Linea Soler** *University of Glasgow*  
*Budget DIY e-Lab Learning Units: based on pedagogy, built on a shoe-string*

12.30pm LUNCH BREAK

**01.30pm Prof. Brittiand DeKorver** *Grand Valley State University*  
*Undergraduate Students' Goals for Upper-Level Chemistry Laboratory Coursework*

**01.55pm Dr. Jennifer L. MacDonald, Dr. Rory Chisholm, Dr. Mark Wall, Nick Roberts** *Dalhousie University*  
*Colour Chemistry: Navigating Colour Vision Deficiency in the Undergraduate Chemistry Laboratory*

**02.10pm Elizabeth W. Kelley** *University of Chicago*  
*Hidden Skills: Uncovering What Organic Chemistry Students Need to Do for Graduate Research*

**02.25pm Keynote: Dr. Kathryn Hosbein and Prof. Joi Walker**  
*East Carolina University*  
*Measuring Chemistry Knowledge and Scientific Practice Proficiency*

03.05pm POSTER SESSION 2  
03.50pm CLOSING

Registration: <https://clear22.eventbrite.com.au>

Queries:  
Dino.Spagnoli@uwa.edu.au  
Nicole.Graulich@dc.jlug.de  
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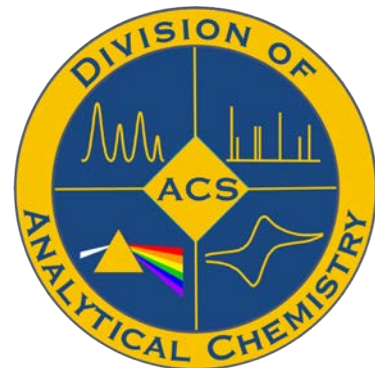
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## DIVISION OF ANALYTICAL CHEMISTRY

The [Analytical Division](#) organizes programming at the spring and fall ACS meetings, [Pittcon](#), the [SciX conference](#) and the [Eastern Analytical Symposium](#) (EAS). The division has a wide range of outreach programs including student travel grants and regional meeting support. Its award program includes undergraduate, graduate and professional awards. We welcome new members. Please join and/or volunteer to help on one or more activities.



**NEWS FROM OUR PARTNERS****NEW YORK SOCIETY OF COSMETIC CHEMISTS**

NEW YORK  
Society of Cosmetic  
CHEMISTS

The New York Society of Cosmetic Chemists is offering the following events in March 2022:

<a href="#">The Four Pillars of Sustainable Beauty</a> (virtual)	<b>March 2, 2022</b>
<a href="#">Clean Beauty and Minimalism</a> (in person)	<b>March 30, 2022</b>
<a href="#">Supplier's Day Preview Event:</a>	
<a href="#">Ethical Sourcing and Biodiversity</a> (virtual)	<b>March 31, 2022</b>
<a href="#">High Throughput Formulation and Advanced Prototype Testing</a>	<b>March 31, 2022</b>
an in-person course at Manhattan College	<b>&amp; April 1, 2022</b>

***An Open Letter to Job Seekers***

Job searching when approaching the end of a doctoral program can be overwhelming at first, but fortunately there are a variety of resources available to help graduates make the next big step in their professional careers. For my own experience, I first began to explore all the career help the ACS offers such as attending industry networking events, conferences, and private career consulting meetings. I had meetings with two different ACS career consultants in the pharmaceutical industry. They offered me extremely helpful advice on my resume, research summary, and cover letter.

For the job searching process I used LinkedIn and Google to find most opportunities by searching key words. For each posting I would look at employees on LinkedIn with that position at that company, introduce myself, and ask if they had time for an informational interview about the company. Although not everyone responded, in all cases that I did an informational interview it helped me land an actual interview. When applying to each company, I always made minor changes to my resume and cover letter based on the job description/posting. Many of the same skills can be described in different ways so I would adjust the wording to match the job description. This is because many companies filter applicants first through a software that picks up on key words.

For the position that I currently have, I was told in feedback that a strong research summary helped me land the interview. To prepare for the interview, I thoroughly looked through the company's website and made sure I knew both historically large advancements and newer advancements the company had made. Knowing the company goals and research interests helped me emphasize my likewise interest in those areas during the interview. Importantly, I spent a lot of time preparing a variety of educated questions about the position and direction of the company's research. Asking strong questions, both scientific and general can be what sets you apart from other applicants that have the same skills and experience. I always kept in mind that getting the interview already means I'm qualified, during the interview was my opportunity to set myself apart by displaying other skills such as teamwork and leadership. Overall, even for the interviews/jobs I did not get, spending time networking and making connections as well as working on communication skills is extremely beneficial for long term personal growth.

## ***JOB BOARD***

Starting your career or looking for the next challenge? Review these and other postings at the New York ACS [Job Board](#). Email your job postings to [Jobs@NewYorkACS.org](mailto:Jobs@NewYorkACS.org) for inclusion.

**Lecturer in Organic Chemistry – Brooklyn College**

[Apply here](#)

**Chemistry Professor -Open Rank (Organic Chemistry / Chemical Biology) - New York University Abu Dhabi**

[Apply here](#)

**Chief College Laboratory Technician, Natural Sciences – Baruch College**

[Apply here](#)

**Chemistry Laboratory Technician (Evening) – St. John’s University**

[Apply here](#)

**Chemist I (ARD Inhalation) – Odin Pharmaceuticals**

[Apply here](#)

**Coatings Chemist – Troy Corporation**

[Apply here](#)

**Associate Principal Scientist, Mass Spectrometry – Merck & Co., Inc.**

[Apply here](#)

**Scientist, Analytical Chemist (LC-MS) – Regeneron Pharmaceuticals**

[Apply here](#)

## ***ACS Virtual Office Hours – 1<sup>st</sup> Thursday of Each Month at Noon ET***

Join ACS Virtual Office Hours, FREE virtual career guidance sessions open to ACS members AND non-members, on the first Thursday of each month. Attendees get personalized career advice during small group networking sessions led by ACS Career Consultants. Register for FREE today.

**Date: March 3, 2022**

**Time: 12:00 PM ET.**

[Register here](#)



ACS Career Consultant

# Virtual Office Hours

Career Advice for Chemists in Industry  
Thursday, Mar. 3 | 12 pm ET

ACS Career Navigator  
Chemistry for Life®

The graphic features a collage of diverse individuals' faces in the background, representing the ACS Career Consultants.