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Professor Prashant K. Jain
2021 Leo Hendrik Baekeland Awardee

See page 17

ACS Local Section New York
ACS Local Section North Jersey

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www.theindicator.org

THIS MONTH IN CHEMICAL HISTORY

Harold Goldwhite, California State University, Los Angeles • hgoldwh@calstatela.edu

In this month's column I will continue my looking back a century and examining what was new in the chemical world in 1922. I will again 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 19th. Volume of this valuable series.

Organic chemistry occupies the largest section of the Annual Report and was clearly of great interest to chemists of the early 20th century. There is an extended analysis of the theory of partial valences proposed by Kermack and Robinson to account for reactivity of conjugated dienes like butadiene. This theory does include the possibility of three electron bonds and also includes consideration of four-membered rings as reaction intermediates.

Still of interest today, considering concerns about the role of carbon dioxide from fossil fuels as an agent of climate change, are reports from BASF of catalysis of a reaction between methane and carbon dioxide to yield first formaldehyde and then methanol.

Reaction between Grignard reagents and hydrogen peroxide gives excellent yields of primary alcohols such as isobutyl and isoamyl (I use the nomenclature of the time). Rather curiously the authors of this article propose that the hydrogen peroxide reacts in the isomeric form O:OH.H – a formula that does not make chemical sense to me! Another puzzle is the reaction between formaldehyde and hydrogen phosphide (phosphine I presume) in presence of hydrochloric acid to give crystalline $ClP(CH_2OH)_4$. As a former student of, and researcher in, phosphorus chemistry I cannot accept the compatibility of a PCl bond and an OH group in the same compound. If I were still active in the laboratory I would surely re-investigate this report. The reference is JACS, 1921, 43, 1684.

A section on optical activity includes some unusual findings. Mixing L-malic acid with solutions of alkali metal salts of racemic tartaric acid produces a precipitate of pure D-tartaric acid. The l-methyl ester of DL-mandelic acid on chlorination with thionyl chloride followed by hydrolysis yields L-phenylchloroacetic acid. Ethyl tartrate has been crystallized (m.p. 18.7°) and its optical rotatory dispersion has been carefully re-determined ranging from +6.87° in the green part of the spectrum to -12.2° in "the last photographic reading in the ultra-violet". The recorded values agree with those calculated using two terms in the Drude equation.

There are new insights into the mechanism of the synthesis of nitrogen compounds in plants. Carbon dioxide is believed to be reduced to formaldehyde and this compound, photochemically activated , reacts with nitrites or nitrates to give formhydroxamic acid HC(OH):NOH, a key intermediate in the production of amino-acids and hence proteins and alkaloids.

The reviewer of the section on homocyclic compounds was Robert Robinson, Nobel Laureate in chemistry in 1947 for research on natural products, particularly plant pigments and alkaloids. He begins his review with a remarkable apologia: "In compiling this report the writer has endeavored to adopt an impartial and unprejudiced point of view, but he is fully aware of the difficulties which may be encountered in such an attempt…" Refreshingly frank. He then plunges into a severe critique of attempts to resuscitate the Dewar formulation of benzene – the structure in which the para positions of the benzene ring are covalently linked. Another benzene structure also comes under his critical scrutiny – a twisted Ladenburg prismatic formulation derived from bonding six tetrahedra. These arguments about benzene are, to some extent, bolstered by a 1921 analysis of the crystal structure of naphthalene derivatives by William Bragg that concluded that the hexagonal rings are puckered, not planar!

More about 1922 in my next.

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THE Indicator

http://www.theindicator.org/

The monthly newsletter of the New York & North Jersey Local Sections of the American Chemical Society. Published jointly by the two sections and distributed to their 6,200 members.

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May 2022	April 16, 2022
June 2022	May 16, 2022
September 2022	August 16, 2022

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WANT TO REACH 6,200 ACS MEMBERS WHILE SUPPORTING STEM PROGRAMS?

The Indicator is actively seeking new advertisers from academia, industry, suppliers and service groups. New rates are in effect that we believe you will find attractive and competitive. Revenue from The Indicator is used to support the variety of New York ACS and North Jersey ACS programs described within it. These include technical seminars / symposia, educational / professional development events, and public outreach events.

Click here for additional information, including rates and order form. For questions, please contact the Advertising Manager. The May deadline is April 16th.

http://www.theindicator.org/

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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.

Friday, April 8, 2022 (virtual)
William H. Nichols Symposium and Medal Award Dinner
Monday, June 6, 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.

CHEMISTS CELEBRATE EARTH WEEK 2022

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.

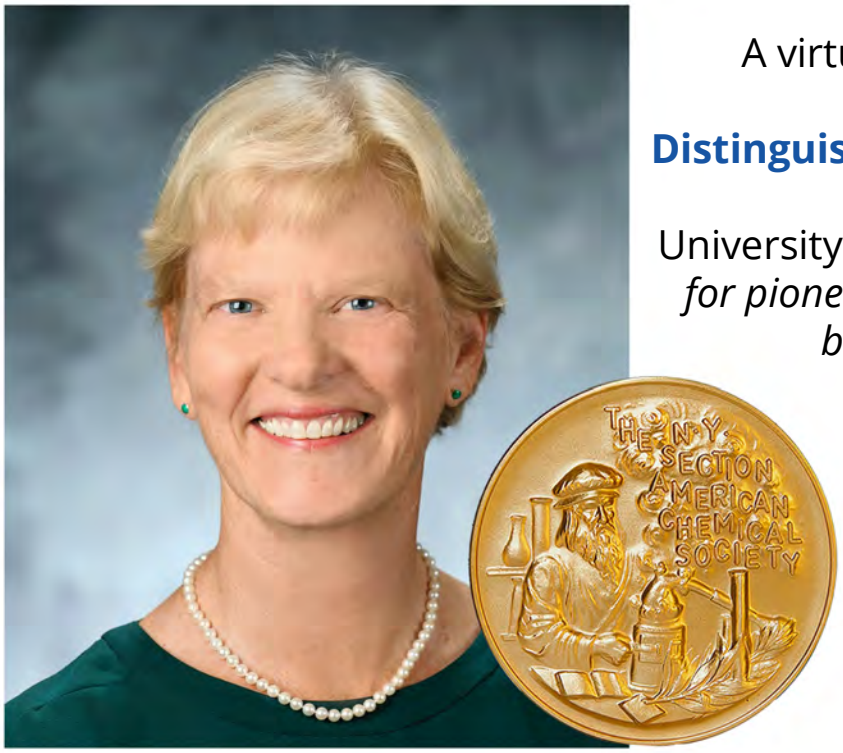
Date: **Saturday, April 23, 2022**
Register here for FREE
Register by April 18, 2022

Time: 11:00 AM – 3:00 PM

Download flyer

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 α-hydroxycarboxylic acid group (such as β-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.

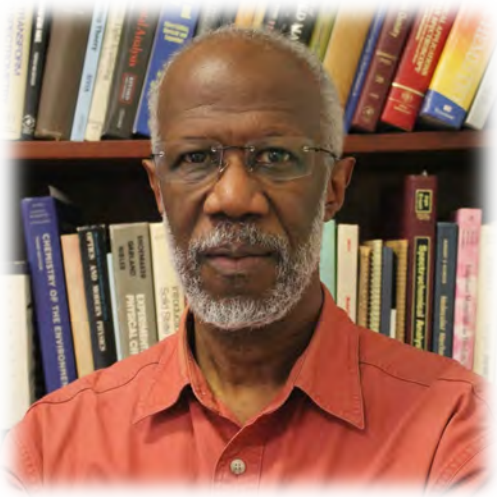
Professor Butler is an elected Fellow of the American Academy of Arts and Sciences (2019), the Royal Society of Chemistry (2019), the American Chemical Society (2012), and the American Association for the Advancement of Science (1997). She has also been recognized with the 2018 ACS Alfred Bader Award 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

WESTCHESTER CHEMICAL SOCIETY DISTINGUISHED SCIENTIST AND STUDENT AWARDS DINNER

Calcium, Silver, Zinc and Phosphate: Perspectives on Bones and Teeth

Speaker: **Professor Marc Walters, Ph.D.**
New York University
2022 Distinguished Scientist Awardee



Date: **Thursday, April 28, 2022**
RSVP: **By April 25, 2022** via email to Dr. Peter Corfield

Place: Hybrid meeting with in person attendees at
Pace University
Wilcox Multipurpose Room, Wilcox Hall
861 Bedford Road
Pleasantville, NY
and virtual attendees via Zoom

Time: 5:00 PM (coffee hour) – 5:50 Welcome – 6:00 Presentation – 7:20 Dinner
Cost: $30 for dinner attendees
Download Flyer

Abstract: The talk will review recent phosphate mineral research in Dr. Walters' lab that focused on the treatment of dental caries by inorganic reagents such as silver diamine fluoride and related complexes that can eliminate the need for a dentist drill.

Biography: Dr. Marc Walters earned his bachelor's degree in chemistry from the City College of New York in 1976. He received his Ph.D. in 1981 from Princeton University where, under the mentorship of T.G. Spiro, he studied the mechanism of the cooperative binding of oxygen by hemoglobin using resonance Raman spectroscopy. This was followed by postdoctoral research in the laboratory of W.H. Orme-Johnson where he investigated the molybdenum-iron cofactor of the enzyme nitrogenase using FT-IR and mass spectrometry. Marc has been a Professor at NYU since 1985. He has pioneered the development of air sensitive hydrogen bonding inorganic complexes as models for the active sites of iron-sulfur proteins. This work enabled the high fidelity examination of hydrogen bonding influences on redox potentials in these proteins. It also led to the development of reverse micelle and nanoparticles containing or constructed from transition metal coordinating complex subunits. A second area of his research has been the vibrational spectroscopic characterization of the phosphate mineral hydroxyapatite at the bone-implant interface as it pertains to prosthetic implants. Recent phosphate mineral research in his lab is focused on the treatment of dental caries by inorganic reagents such as silver diamine fluoride and related complexes that can eliminate the need for the dentist's drill. Dr. Walters has published 50+ articles and book chapters based on his meaningful and scholarly research.

Dr. Walters has compiled an exemplary record of service to the scientific community. Dr. Walters has served as a Director-at-Large, Councilor, and Governmental Affairs Committee Chair, and Section Chair of the NYACS. He has also served on the ACS National Award Selection Committee, and as Treasurer for the Inorganic Chemistry Division. He was awarded the NYACS Outstanding Service Award in 2013 and is an ACS Fellow

LONG ISLAND SUBSECTION

Maple Syrup Profiling Using LC-MS

Speaker: **Dr. Jerry Zweigenbaum**
LC/MS Field Application Scientist
Agilent CrossLabs
Agilent Technologies, Inc.

Date: **Thursday, April 7, 2022**

Time: 6:00 PM via Zoom

Download Flyer

Abstract
Fraud can affect almost every aspect of our food chain. It includes adulteration, protected labels, and counterfeit products. Examples abound from melamine in dairy products, the appellations of Champagne and Parma ham, botanical authenticity, free range vs caged, to counterfeit wines. Although maple syrup is not as costly as Chateau Petrus, it is an interesting food and could be easily misrepresented.

Maple Syrup is a condensate of the sap from maple trees and its major sugar is sucrose. It requires boiling down about 40 gallons of sap to produce one gallon of syrup. From Vermont Grade A fancy light in color to Canada grade D dark and rich, it is a food with great variety. Because of both grade and region, verification of maple syrup is difficult. This presentation will describe the profiling of maple syrup using accurate mass LC/MS and statistical analysis.

Biography
Jerry started working with Agilent in the spring of 2002. Before Agilent he had a variety of analytical experience spanning 25 years from the beginning of his career as a forensic chemist to the R&D labs at Eastman Kodak. Jerry also managed an organic environmental testing lab and then a health and safety laboratory at Kodak. His academic training includes a BS in chemistry, an MS in analytical chemistry, and a PhD in environmental toxicology. At Agilent, he has worked with scientists worldwide in both food and environmental applications and was the editor of the book "Mass Spectrometry in Food Safety" published in 2011. He now works as a post-sales field consultant specializing in LC/MS.

Presented by ACS Long Island Subsection & the Chemistry Department of Nassau Community College

The deadline for submitting material for the May issue of The Indicator is April 16th
http://www.theindicator.org/

COMPUTERS IN CHEMISTRY TOPICAL GROUP

Computational approaches in transition metal chemistry and materials science

Speaker: **Dr. Hrant P. Hratchian**
Department of Chemistry and Biochemistry
University of California - Merced

Date: **Friday, April 8, 2022**
Register here

Time: 10:00 AM EST via Zoom

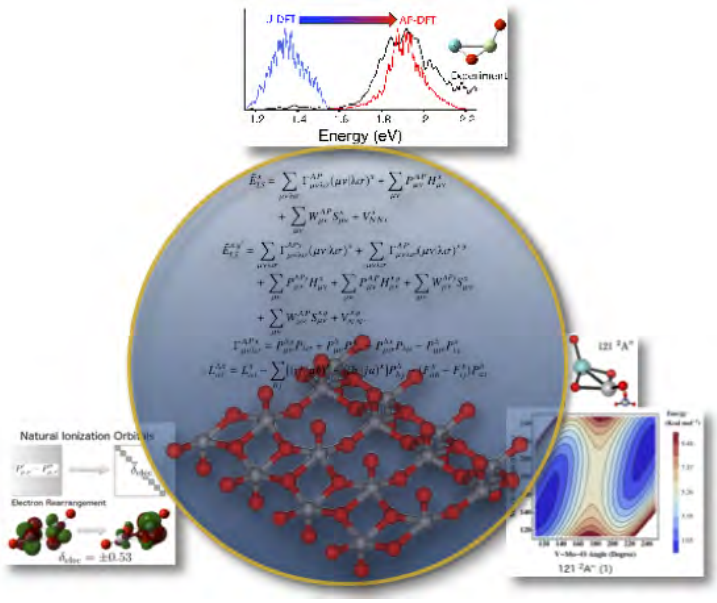
Download Flyer

Abstract

Our research group applies and develops theoretical and computational approaches to explore exciting questions in transition metal chemistry and materials science. One area of recent interest has been anion transition metal oxide photoelectron spectra. Critically, full assessment of the these spectra often requires corroborating theoretical and computational analysis. This talk will describe some of the computational techniques we use to model anion photoelectron spectroscopy of metal oxide clusters, which serve as molecular models of surface defect sites. Such calculations can be significantly complicated by the presence of unpaired and strongly correlated electrons, and the standard computational toolbox is still lacking a set of practical tools for efficient exploration of this class of problems. We will describe our lab's efforts to develop new efficient methods for treating these complicated electronic structures and qualitatively identifying the nature of detached electrons. Recent studies modeling anion photoelectron spectra of metal oxide clusters using these models will be described.

Biography

Hrant P. Hratchian is Associate Professor and Chair of the Department of Chemistry and Biochemistry at the University of California, Merced. A Michigan native, he obtained his B.S. degree from Eastern Michigan University and completed doctoral studies at Wayne State University. From 2005-2008 he was the Ernest R. Davidson Postdoctoral Fellow at Indiana University. From 2008-2013, he was a Research Scientist at Gaussian, Inc. In 2013, he joined the faculty at the University of California, Merced. Professor Hratchian's research interests include the development and application of efficient computational chemistry methods to explore the unique properties of transition metals and catalyzed chemical transformations.



HUDSON-BERGEN SUBSECTION

23RD ANNUAL STUDENT RESEARCH SYMPOSIUM

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

Semiconductor Process Development:
Chemistry to Industry and Beyond
presented by
Dr. Sandani Samarajeewa
Intel Corporation

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.

Student Presentation Instructions: The Student Research Symposium 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, 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**.

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 68th Annual Undergraduate Research Symposium (URS). This virtual symposium will take place from **9:30AM – 1:00 PM on 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 you 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!

CAREERS IN COSMETIC CHEMISTRY SYMPOSIUM

The St. John's University Student Members of ACS, the New York ACS and the New York Society of Cosmetic Chemists invite all interested STEM students to the Careers in Cosmetic Chemistry Symposium. This in person event will take place from **10:00 AM – 1:30 PM on Saturday, April 30, 2022**. The symposium features a panel on 'Hot Topics' in cosmetic chemistry and personal care, and a lecture & panel discussion on career paths in cosmetic chemistry

Download Flyer
Register here

NEW YORK Society of Cosmetic CHEMISTS

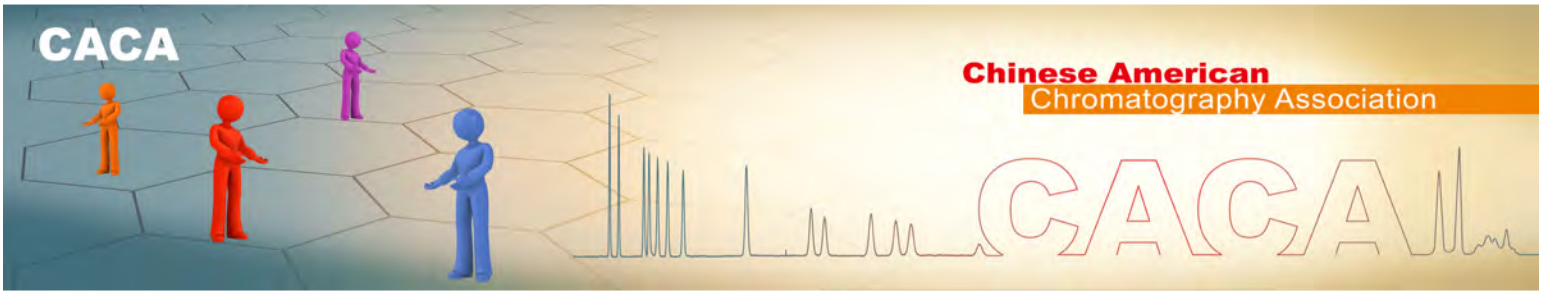
Check out the Job Board for more career opportunities

The Indicator is posted to the web 1ST of the month at
http://www.theindicator.org/

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

Networking and Career Development Opportunities

NORTH JERSEY SECTION MEETINGS

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.

April 18
May 16
June 13
September 19
October 17
November 14
December 12

NORTH JERSEY YOUNGER CHEMISTS COMMITTEE 2022

Earlier this year, two new Co-Chairs were appointed to the North Jersey ACS Younger Chemists Committee! Mary Chioma Okorie is a PhD Chemistry candidate at Seton Hall University, and Tiffany R. Olivera is a PhD Chemistry student at Rutgers University-Newark. They have recently revamped the YCC's social media (follow on Facebook, Twitter, or Instagram - @njacsycc) and have new contact information to share. If you are a younger chemist (under 35 years old), enjoy networking, early-career resources, and volunteering opportunities, please reach out via email to find out how to get involved!


Mary Chioma Okorie


Tiffany R. Olivera

PROF. PRASHANT K. JAIN TO RECEIVE THE 2021 BAEKELAND AWARD

The 2021 Baekeland Award, presented by the North Jersey Local Section of the American Chemical Society, is going to Prof. Prashant K. Jain from the University of Illinois Urbana-Champaign to celebrate his contributions to advancing the understanding of light-matter interactions, chemical transformation in nature and technology, and the inner workings of metal catalysts and photocatalysts. Prof Jain's research work in harnessing light as a source of energy to control the attributes and functions of advanced materials is impressive and exemplifies the Leo Hendrik Baekeland Award for advancements of the chemistry field.

Prof Jain's lab specializes in nanoscale light–matter interactions and nanoscale-spatial-resolution chemical imaging. His noteworthy recent contributions are the co-discoveries of plasmon resonances in doped nanocrystals and plasmonic redox catalysis and photosynthesis. His collective work has been published in over 100 papers and cited over 27,000 times. He has been listed among Highly Cited Researchers by Clarivate Analytics and Elsevier Scopus. Prashant is a Fellow of the Royal Society of Chemistry and the American Association for the Advancement of Science (AAAS). His work has been recognized, among other awards, by a Presidential Early Career Award in Science and Engineering, the ACS Kavli Emerging Leader in Chemistry award, the Beilby medal, a Sloan Fellowship, an NSF CAREER award, and selection as MIT TR35 inventor.

2021 BAEKELAND AWARD SYMPOSIUM TO HONOR PROF. PRASHANT K. JAIN

The prestigious Leo Hendrik Baekeland Award is presented biennially to an exceptional younger chemist in recognition of accomplishments in pure or applied chemistry to a US-based chemist as characterized by the initiative, creativeness, leadership, and perseverance of the individual and indicated by published or unpublished evidence. The award recipient receives a gold medal and a $5,000 honorarium.

Prof. George Schatz

Prof. Paul Weiss

Prof. Naomi Halas

The 2021 Baekeland Award Symposium will be held on **May 12th, 2022** at Fairleigh Dickinson University in Madison, New Jersey. The confirmed speakers of the symposium include: Prof. George Schatz from Northwestern University, Prof. Paul Weiss from UCLA, Prof. Naomi Halas from Rice University. Detailed program and agenda to follow in the May issue of The Indicator.

CHEMISTS CELEBRATE EARTH WEEK 2022

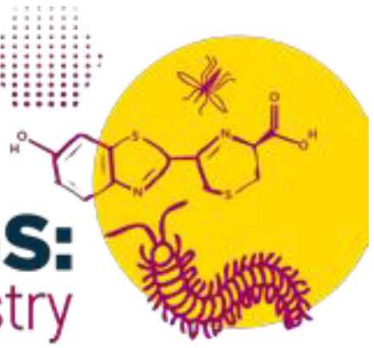
North Jersey Section
American Chemical Society

ACS Chemistry for Life®
American Chemical Society

CHEMISTS CELEBRATE EARTH WEEK

#ccew April 17–23 • 2022

THE BUZZ ABOUT BUGS:
insect chemistry



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 Buzz About Bugs: Insect Chemistry

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

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

NORTH JERSEY MASS SPECTROMETRY DISCUSSION GROUP

The NJ Mass Spectrometry Discussion Group is pleased to announce its April 12, 2022 meeting – online! NJ MSDG is the second largest mass spectrometry professional association behind ASMS, with over 1,100 members in the tristate area.

Date: **Tuesday, April 12, 2022**
Time: 7:00 PM | (UTC-5:00) Eastern Time (US & Canada)
Via: Webex (preregistration not required, click here to join meeting)
Cost: FREE
Sponsor: Bruker

Featuring:

Scaling up while scaling down – Sample-sparing High Throughput Proteomics
Hanno Steen, PhD
Harvard Medical School

Ultra-sensitive 4D Proteomics on the timsTOF SCP mass spectrometer
Matt Willets
Bruker Daltonics

UNDERGRADUATE AWARD IN ANALYTICAL CHEMISTRY

Nominations are now being accepted for this award which is intended to encourage student interest in analytical chemistry and to recognize students who display an aptitude for a career in the field.

Nominate a worthy student by July 1, 2022

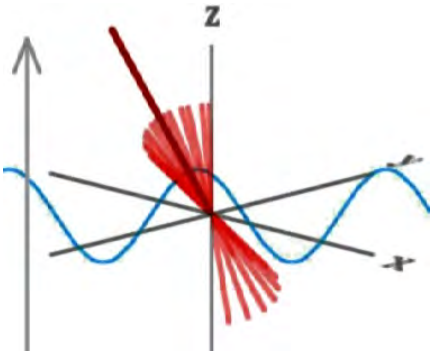
YOUNGER CHEMISTS TRAVEL GRANTS

Younger chemists (< 35 yrs old) attending an ACS Meeting, Eastern Analytical Symposium, SciX are eligible to apply for a travel grant up to $1000.

Apply for a travel grant by May 1, 2022

NORTH JERSEY NMR SPECTROSCOPY TOPICAL GROUP

Our speaker for April will be Claudia Avalos, Ph.D. from NYU. The seminar will take place on **April 21st** at **12pm ET**. *Please note the new time*, as this is different from what we normally do. Title and abstract will be posted on our website.



New Jersey Association of Forensic Scientists
Presents the 2022 Spring Seminar

"Canines in Forensics"
The Power of Detection – When the Nose Knows

May 6th, 2022 8:00AM – 3:30PM
Lambertville Station Inn, Lambertville, NJ
Continental Breakfast & Registration: 7:30 – 8:30am

REGISTRATION IS LIMITED!
Early Registration Deadline: April 5th, 2022
Late Registration Deadline: April 20th, 2022
NJAFS will be following New Jersey and CDC guidelines for COVID-19.

The birth of K-9 Units in NJ
Cadaver Detection & Arson Investigation
Render Safe & Electronic Storage Devices
Training and focus for Canines
Legal Issues
Demonstrations

Registration and Fees
https://njafs_2022seminar.eventbrite.com

Includes President's Reception, Continental Breakfast, Lunch and Certificate
President's Reception (light fare) – Thursday evening, May 5th from 7-9pm

Early Registration Fees - April 5th: NJAFS Members $75.00 Non-Members: $105.00
Student Member: $35.00 Student Non-Member: $50 (with valid Student ID)

Registration Fees after April 5th: NJAFS Members: $95.00 Non-Members: $125.00
Student Member: $50.00 Student Non-Member: $65 (with valid Student ID)

Lambertville Station Restaurant and Inn
11 Bridge St. Lambertville, NJ
www.lambertvillestation.com
609-397-4400

Rooms are blocked off until April 5th. Use Code: 2205NJF
Standard ($155) – One King bed
Deluxe ($165) – Two Queen beds
Suite ($190) – One King bed and Fireplace

Check in: 3:00pm and Checkout: 11:00am

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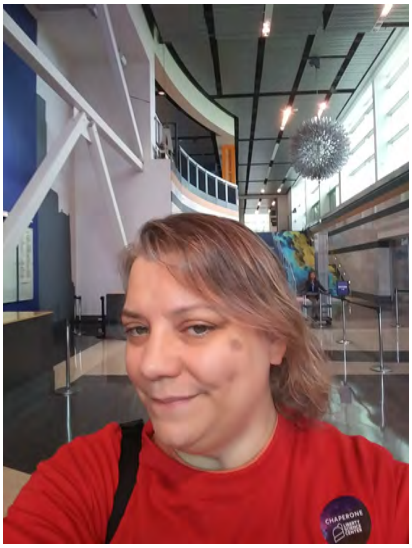
DR. KATHLEEN GILBERT NAMED 2022 OUTREACH VOLUNTEER OF THE YEAR FOR THE NORTH JERSEY ACS



Kathleen Gilbert truly demonstrates the spirit of volunteerism. She chaired the newly formed Communications Committee for the NJACS and, using her skills in programming and electronic media, she partnered with another local section and developed a new web-based newsletter that has been easier to share and communicate with our broader local ACS members. Kathleen also co-chaired the 2nd virtual NJ Chemistry Olympics and was a judge at the National Chemistry Week event where more than 1,000 local students participated at these outreach events. Kathleen tirelessly gives her time and contribution and has positively influenced and impacted our local outreach activities

Read the C&EN Article here

CALL FOR SCIENCE FAIR JUDGES - THE FAIR FOR EMERGING RESEARCHERS

The Fair for Emerging Researchers (FER) is a year-long mentorship and training program for socioeconomically diverse 5th-8th grade students. FER is gearing up for their annual science fair event on **April 30th from 9:30AM - 4:00 PM**. The FER science fair has around 150 middle school students participating in remote mentorship sessions. We are hoping that ACS members and their colleagues could help FER by stepping up as Professional Judges at this virtual event!

Learn more.

Volunteer as a Science Fair Judge!

*Looking for STEM professionals interested in judging at a **virtual** middle-school science fair. As the senior-most judge in a group, you would be responsible for leading discussions throughout the group presentations.*

Date: April 30th, 2022
Time: 9:30am to 4pm
Where: Hopin (Remote)

Sign up at
scienceFER.org/volunteer

FER

MEETING REPORTS

THE CHEMISTRY OF LOVE

The New York Section held its first annual "Chemistry of Love" event on Friday, March 25, 2022 at Pace University. The event was supported by an ACS Innovative Project Grant, which was coordinated by Dr. JaimeLee Rizzo of Pace University. The goal of the event was to bring more awareness of Chemistry to the community in a positive, cheerful, and happy way. What better way than to host an event filled with LOVE!

Registered participants met at the Bianco Room at Pace University where it was decorated with hearts in the colors of red, pink, and white. The tables were covered with red covering and centerpieces were Erlenmeyer flasks filled with red colored water, Hershey kisses, flowered petals, and stickers. Everyone mingled over a heart-healthy breakfast and freshly prepared Beet Root Juice from our "Blender Bar" while listening to a playlist of happy and love-filled songs ☺ Dr. Rizzo welcomed the guests then introduced the Dean of Dyson College of Arts and Sciences, Dr. Tresmaine Grimes, via a pre-recorded speech. The Chair of the NY Section of the ACS, Dr. Kathleen Kristian, then gave her greetings via a pre-recorded speech. The keynote speaker was Dr. Eric Chang who gave a fun and interactive presentation entitled, "The BioCHEMistry of Love". Dr. Chang utilized the website, Poll Everywhere to collect feedback from the audience as part of his talk. Following his thought-provoking presentation, the Chem Club of Pace University gave a talk entitled, "NO LOVE: Nitric Oxide Love". Participants were then further entertained with a raffle including a variety of chocolates, love themed mugs, cups, stuffed animals, and socks, flowers, soaps, etc. The "Blender Bar" then served up another healthy drink, "Strawberry Banana smoothies" for all. A beautiful "rainbow heart photobooth" was prepared using helium filled red, pink, and white balloons. Heart shaped sunglasses and other props were used at the fun photobooth ☺ Guests were presented with gift bags filled with "love stuff" including personalized LuV hats, soaps, reusable straws, loose leaf tea bags. . It was indeed a great day to love and be loved!

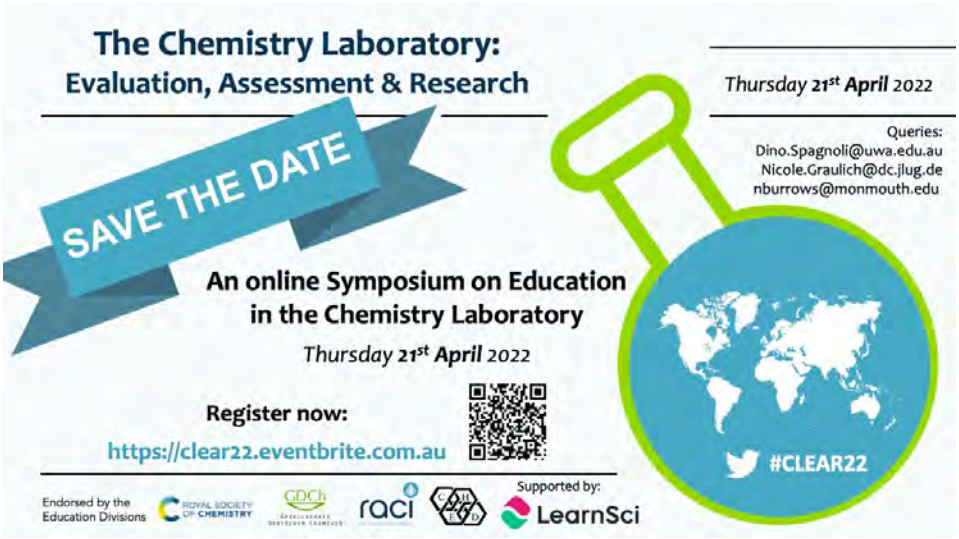
Special thanks to all the wonderful volunteers of Pace University who helped with the planning, set-up, assisting throughout the day, and big clean-up!

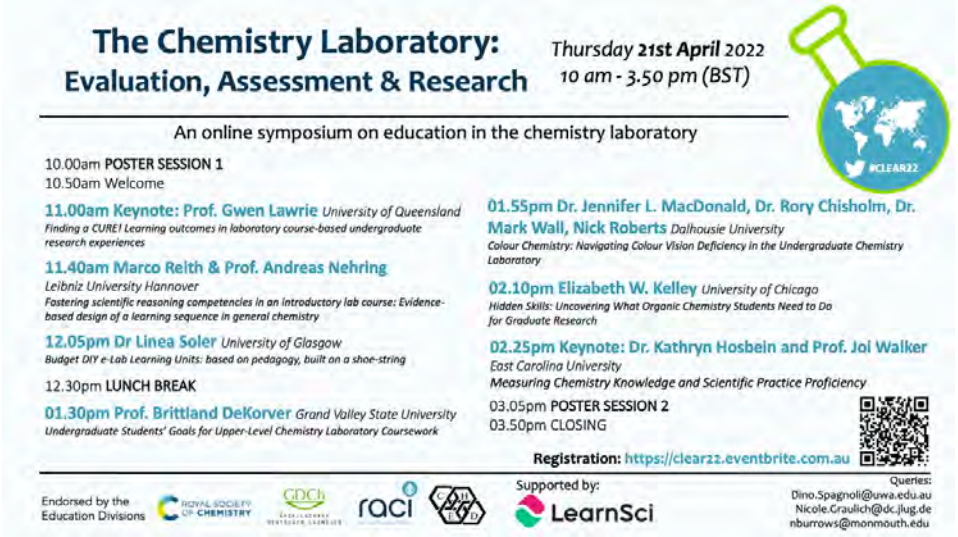
CHEMICAL EDUCATION

MOBILE SUMMER INSTITUTE ON SCIENTIFIC TEACHING

The (STEM)^2 network and the National Science Foundation (NSF) cordially invite you to expand your teaching skills at the Summer Institutes on Scientific Teaching. Facilitated by national science education experts, you will develop original and innovative classroom materials for college instruction using Charles Henderson's four categories of change strategies to improve adoption of evidence-based teaching.

Dates: May 24 – 27, 2022
Place: Adelphi University
Garden City, NY
Register here by April 30, 2022





OPPORTUNITIES

GRANT OPPORTUNITIES

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

LOCAL SECTION INNOVATIVE PROJECT GRANT (IPG)

Local Sections may request up to $3500 to support new programs that stimulate member involvement and are sustainable. Projects that support interactions with other s the use of technology to more fully engage their current membership and to enhance their member recruitment efforts.

DUE JUNE 30, 2022
Learn more

SCHOLARSHIPS

HYUNDAI WOMEN IN STEM SCHOLARSHIP

Provides $10,000 in financial support for a high school or undergraduate who identifies as female, resides in the United States and wishes to pursue a STEM-related degree.

DUE JUNE 30, 2022
Learn more

DR. MOW SHIAH LIN SCHOLARSHIP

Provides $2,000 in financial support for a doctoral student of Asian heritage with a U.S. student visa (F-1) studying on Long Island, including Brooklyn & Queens.

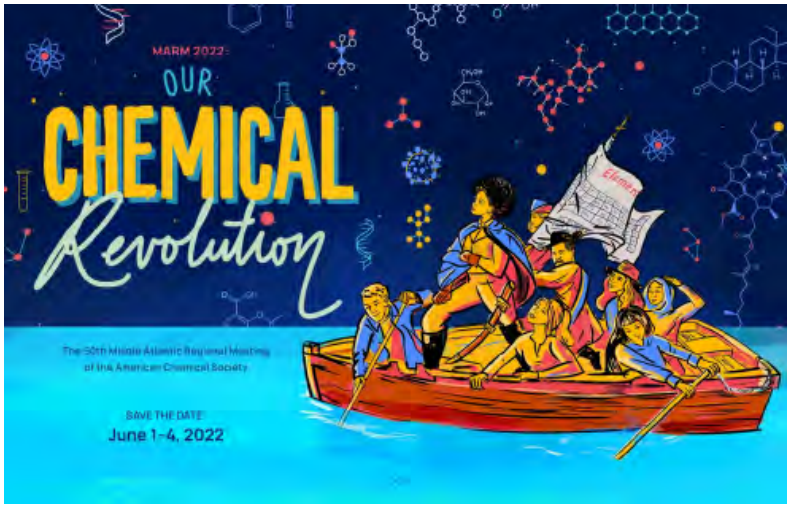
DUE JUNE 8, 2022
Learn more

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 DUE AUGUST 1, 2022
Learn more

MEETINGS OF INTEREST



Middle Atlantic Regional Meeting of the American Chemical Society (MARM 2022) at The College of New Jersey

June 1-4, 2022

Registration is now open.

Campus Housing closes **April 28, 2022**

Eastern Analytical Symposium

February Retort now online
Virtual Student Symposium
May 13 - Abstracts due for Virtual Student Symposium
May 20 - Free Virtual Student Symposium

Eastern Analytical Symposium
Now - Short Course Schedule Available
May 6 - Oral Presentation Abstracts due
September 5 - Poster Presentation Abstract due
November 14-16 - Eastern Analytical Symposium

thank you

To All Our Advertisers That Support the Eastern Analytical Symposium

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 for inclusion.

Senior Research Scientist – GAF

Apply here

Principal Scientist – GAF

Apply here

Chemist – QuVa Pharma

Apply here

Analytical Chemist - Randstad

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Chemist, Skincare Development - L'Oreal Research & Innovation

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Senior Scientist - Merck & Co.

Apply here

Postdoctoral Research Fellow in Computational Genetics – Albert Einstein College of Medicine

Apply here