THE Indicator

APRIL 2021 Vol. 102 • No. 4 ISSN0019-6924

Celebrating Earth Week — April 18-24, 2021

Reducing Our Footprint with Chemistry

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THIS MONTH IN CHEMICAL HISTORY

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

The author of the great book of chemistry in this month's column is Claude Louis Berthollet (1748 – 1822). The book is his "Essai de Statique Chimique" published in 1803.

Berthollet studied medicine in Turin, where he became M.D. in 1768. After successfully practicing as a physician he moved to Paris and studied chemistry with Macquer and Bucquet and earned a second M.D. in 1778 with a dissertation on the digestive properties of wines! As one of the group of rising young chemists in France he became a co-author with Lavoisier, Fourcroy, and Guyton de Morveau of their revolutionary book that began to reform chemical nomenclature (a book I might well have included among these essays on Great Books of Chemistry). He survived the reign of terror and became director of the Gobelin tapestry works where he introduced chlorine as a bleaching agent for textiles.

In 1794 Berthollet became Professor of Chemistry at the new Ecole Polytechnique, an institution he helped to establish. Apparently his teaching was not appreciated by his students, and it was perhaps timely that he was chosen by Napoleon to be part of the team of scientists, archaeologists, and historians that the Emperor appointed to accompany the campaign in Egypt. This was the start of modern Egyptology. Among the great discoveries made by the expedition was the Rosetta Stone that allowed decipherment of hieroglyphics.

Among the great chemical discoveries made by Berthollet in Egypt were the first inklings of the Law of Mass Action. Berthollet, like many other chemists of his time, was profoundly interested in chemical affinity, that is the nature of the forces that attract some compounds so strongly that they react, while others remain inert. While exploring the Nile Valley he came across Lake Natron and made a startling observation. This brine lake, which was bordered by limestone cliffs, had deposits of sodium carbonate on its shores. Now Berthollet knew that in the laboratory by adding a solution of sodium carbonate to one of calcium chloride he had observed a precipitate of calcium carbonate (limestone) and a solution of sodium chloride (brine). He had "a flash of insight". Chemical affinity was not absolute; it could be affected by conditions of concentration and perhaps temperature. What he had observed at the lake was an example of a reversible or an equilibrium system. The actual composition of such a system depended on circumstances.

In the "Essay of Chemical Statics", to give it an English title, Berthollet took this idea and, to coin a phrase, ran with it. He went so far as to challenge the idea of the constancy of composition of chemical compounds, implicit in the work of the vast majority of chemists including his influential colleague Lavoisier. Adducing many examples of variable composition systems, like glasses, alloys, and solutions, he suggested that most chemical systems are in fact equilibrium systems and that constancy of composition was an artefact of isolation conditions. This particular aspect of the Essay's claims led to a long-running controversy in the chemical literature with another French chemist, Joseph Louis Proust, that ended in victory for Proust and general acceptance of constancy of composition.

It is likely that this led to neglect of the majority of Berthollet's ideas in the Essay. These are about the nature of affinity; the factors that affect it; and the importance of equilibrium in considering chemical reactions. It is not far-fetched to claim that Berthollet's "Essai de Statique Chimique" is the first discussion of the field that nearly a century later would be termed Physical Chemistry.

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THE Indicator

The monthly newsletter of the New York & North Jersey Sections of the American Chemical Society. Published jointly by the two sections.

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The Indicator (ISSN0019-6924) is published on-line monthly except July and August by the New York and North Jersey Sections of the American Chemical Society, Office of Publication, 227 N. Duke Avenue, Fresno, CA 93727.

April Calendar

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Tuesday, April 6, 2020
Westchester Chemical Society
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Friday, April 9, 2021
Computers in Chemistry Topical Group
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Friday, April 16, 2021
William H. Nichols Distinguished Symposium (Virtual)
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also

Saturday, May 1, 2021
68th Annual Undergraduate Research Symposium (URS)
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Friday, May 7, 2021
Computers in Chemistry Topical Group
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Wednesday, May 12, 2021
Westchester Distinguished Scientist 2021 and 2021Student Awards
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Thursday, May 20, 2021
Organic Topical Group
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Fridays, June 4, September 10, November 19, 2021
New York Section Board of Directors Meeting
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NORTH JERSEY SECTION

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also

Mondays, May 17, June 14, September 27, October 18, November 15, December 13, 2021
North Jersey Executive Meeting
See page 20.

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The Indicator **is posted to the web around the 15th of the previous month at**
www.TheIndicator.org

Deadline for items to be included in the MAY 2021 issue of *The Indicator* is
MARCH 28, 2021

To Comply With the Federal Regulations Regarding Social Distancing Necessitated by the COVID-19 Virus, it became imperative to cancel, postpone or "go viral" all Section Meetings for the past year.

Details of any relevant meetings will appear in the appropriate future issues of *The Indicator*.

New York Meetings

https://www.newyorkacs.org

ACS, NEW YORK SECTION BOARD OF DIRECTORS

MEETING DATES FOR 2021

The dates for the Board of Directors Meetings of the ACS New York Section for 2021 were selected and approved. The meetings are open to all – everybody is welcome. All non-board members who would like to attend any of the meetings should inform the New York Section office by emailing Bernadette Taylor at **btaylor@NewYorkACS.org** or by calling the Section office at (732) 770-7324.

Dates of the meetings for 2021 are posted on the New York Section website at **https://www.NewYorkACS.org,** below, and monthly in *The Indicator.* Dr. Rita K. Upmacis will chair all meetings. The board meetings will start at exactly 6:30 PM. Until further notice, meetings will be held on-line. and will start at exactly 6:30 PM.

The Board Meeting dates for 2021 are:

Friday, April 16, 2021 Nichols Symposium (Virtual)
Friday, June 4, 2021 Board Meeting
Friday, September 10, 2021 Board Meeting
Friday, November 19, 2021 Board Meeting

LONG ISLAND SUBSECTION

Poly(diiododiacetylene): En Route to New All-Carbon Materials

Speaker: Dr. Daniel Resch
Department of Chemistry
Nassau Community College

Abstract
Poly(diiododiacetylene) (PIDA) is a polymer consisting entirely of carbon and iodine. Using a bis(nitrile) oxalamide / diiodobutadiyne host-guest scaffold, the polymer is prepared via a 1,4-topochemical polymerization. The PIDA polymer was found to be a contact explosive in its isolated state, and readily forms aggregates in solution. The isolated polymer strands were subject to deiodination using various Lewis bases to yield a disordered, but conductive graphitic product. A simple small molecule compound to model the vicinal diiodoalkene functional group of the polymer was chosen. The model compound showed the loss of iodine follows an E2-like mechanism and can be induced with a simple iodide salt. The model studies also showed the loss of iodine occurs most readily in aprotic solvent under mild conditions. These results show that PIDA can potentially serve as a precursor to making new carbon-rich materials under mild conditions.

Date: Thursday, April 1, 2021
Time: 6:00 PM
Place: Zoom

Link:
https://stonybrook.zoom.us/j/93793496217?pwd=WWJVVFQzRXdTZWZoNFprYlg5NThtdz09

WESTCHESTER CHEMICAL SOCIETY

Because of Covid-19, this meeting will be a remote meeting. Details are at the end of this announcement. You will need to have the Zoom software on your computer to access the link.

*****

Special Seminar –"How to Make Gold and Influence People: Prisons as Sites of Alchemical Practice in Early Modern Europe"

Speaker: Jennifer M. Rampling, Ph.D.
Associate Professor of History
Princeton University
Princeton, NJ

Biography

Jennifer M. Rampling, Associate Professor of History at Princeton University, is a historian of late medieval and early modern science and medicine, specializing in alchemy. She is the author of *The Experimental Fire: Inventing English Alchemy,* 1300–1700 (Chicago, 2020), as well as numerous articles on alchemical theory and practice, including that of George Ripley (fl. 1470s) and John Dee (1527–1609). From 2013–17 she edited the history of chemistry journal, *Ambix*.

Abstract

This talk explores a neglected but fascinating theme in the history of alchemy—the strategies used by alchemical practitioners to extricate themselves from prison. In early modern Europe, alchemists found themselves incarcerated for various reasons. Some failed to make good on their gold-making promises, some were suspected of practicing magic, and others simply fell into debt. Once confined, some drew on their practical and rhetorical skills to write their way out of trouble, addressing petitions and alchemical treatises to princes and highly-placed figures in government. Perhaps surprisingly, they often ended up being released.

I will focus on English practitioners, starting in the fourteenth century when John of Walden fell foul of Edward III, and moving into the sixteenth century, when at least two alchemists were arrested as suspected conjurors under Henry VIII. Finally, the notorious Edward Kelley, best known for his collaboration with the mathematician John Dee, wrote a series of elaborate treatises to Emperor Rudolf II while imprisoned in Bohemia. Although Kelley's "prison writings" have not been previously studied, they offer new evidence for his alchemical experiments—and show how the promise of transmutation might offer a "get out of jail free" card for beleaguered alchemists.

Date: **Tuesday, April 6, 2021**
Time: 7:00 PM (US and Canada)
(Zoom link available from 6:45 PM)
Place: Zoom Meeting
Cost: Free and open to the public

URL
https://sunywccedu.zoom.us/j/86861649919?pwd=cmtWdHdQQXpZRDRhNXBIaTZQQjJCQT09
One tap mobileMeeting ID: 868 6164 9919
Passcode: 596629
One tap mobile
+16465588656,,86861649919# US (New York)
+13017158592,,86861649919# US (Washington DC)

Dial by your location
+1 646 558 8656 US (New York)
+1 301 715 8592 US (Washington DC)
+1 312 626 6799 US (Chicago)
+1 669 900 9128 US (San Jose)
+1 253 215 8782 US (Tacoma)
+1 346 248 7799 US (Houston)
Meeting ID: 868 6164 9919

Find your local number: **https://sunywcc-edu.zoom.us/u/keGjpsPvJE**

For further information:
contact Rolande Hodel, **rrhodel@aol.com**,

Or

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Text: 914-980-9128 or 914-218-7607.,

Or

Paul Dillon, **PaulWDillon2@hotmail.com**,
Phone: 914-941-0890, Text: 914-393-6940

Please RSVP by text or email to Rolande Hodel, Peter Corfield or Paull Dillon if you expect to come, to help us plan. But if you do not RSVP, you can still link in.

Please note that screen prints of the Zoom screen may be taken at the meetings and may be submitted for publication in the NY/North Jersey newsletter, *The Indicator.* If you do not want a photo of yourself submitted, let us know at the meeting.

ACS Chemistry for Life®

American Chemical Society's New York Section, Inc.

NewYorkACS.org

Computers in Chemistry Topical Group

Spring 2021 Seminar Series via Zoom

Fridays monthly at 11:00am

Register in advance to receive the seminar link:
https://us02web.zoom.us/meeting/register/tZMldO6grDMoE9S-QaxgrYP62X3pqC4b0RGW

After registering, you will receive a confirmation email containing information about joining the meeting.

April 9th, 2021

Dr. Angelo Bongiorno
Associate Professor of Chemistry
College of Staten Island, CUNY
angelo.bongiorno@csi.cuny.edu

May 7th, 2021

Dr. Mateusz Marianski
Assistant Professor of Chemistry
Hunter College, City University of New York
mmarians@hunter.cuny.edu

2020 ACS NEW YORK SECTION TOPICAL GROUP – COMPUTERS IN CHEMISTRY

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AMERICAN CHEMICAL SOCIETY'S NEW YORK SECTION, INC. – WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM

"Nanostructured Polymers by Molecular Engineering Using ATRP"

Honoring: Professor Krzysztof Matyjaszewski

Date: **Friday, April 16, 2021**
Time: 1:00 PM – 7:00 PM
Place: Virtual Symposium

1:00 PM — Welcome

Professor Ruben M. Savizky, 2020 Past Chair, ACS New York Section, The Cooper Union

1:05 PM — Opening of the Distinguished Symposium
Professor Rita K. Upmacis, 2021 Chair, ACS New York Section, Pace University

1:15 - 2:00 PM — Polymer-Enhanced Biology
Professor Alan J. Russell, Vice President, Biologics, Amgen

The growth of polymers from the surface of proteins has opened the door to tuning and supplementing protein function by rational design. Protein-polymer conjugates are synthesized from pure starting materials and the struggle to separate conjugates from polymer, native protein, and from isomers has vexed scientists for decades. We have discovered that covalent polymer attachment has a transformational effect on protein solubility in salt solutions. Charged polymers increase conjugate solubility in ammonium sulfate and completely prevent precipitation even at 100% saturation. This transformational impact on protein solubility can be used to simply purify mixtures of conjugates and native proteins into single species. Increasing protein solubility in salt solutions through polymer conjugation could lead to many new applications of protein-polymer conjugates.

2:05 - 2:50 PM — Responsive Materials from Dynamic Bonds
Professor Brent S. Sumerlin, Department of Chemistry, University of Florida

By relying on a variety of reversible covalent reactions that lead to readily cleaved bonds, we have prepared materials that combine the physical integrity of covalent materials and the structural dynamics of supramolecular complexes. Enaminone, boronic esters, boronate esters, and Diels-Alder linkages have all been employed to prepare these responsive and dynamic materials, with particular attention having been dedicated to the preparation of hydrogels, elastomers, and nanoparticles. We seek to exploit the reversible nature of these bonds to prepare responsive and self-healing materials.

2:55 - 3:35 PM — Dancing in the Dark with CHIPs:
Polymers for Next Generation Photonics and Imaging
Professor Jeffrey Pyun, Department of Chemistry and Biochemistry, University of Arizona

The ability to manipulate light with materials is critical for a wide range of optical applications for devices, imaging and sensing applications. We will discuss our recent efforts to make new functional polymers and materials that are designed to transmit, reflect, rotate or guide light across a wide optical spectrum to enable creation of new imaging and sensing platforms. We will discuss how these systems will improve human-machine interfaces and next generation sensors for transportation.

3:40 - 4:25 PM — Polymers, Cells and Spores: Macromolecular Engineering of Living Thin Films
Professor David A. Tirrell, Department of Chemistry, California Institute of Technology

This lecture will describe our ongoing effort to engineer the physical and biological properties of thin bacterial films by display of adhesive proteins on the cell surface, by release of matrix proteins into the extracellular space, and by the inclusion of stable bacterial spores. Studies of film fabrication, cell viability, film growth, film structure, indentation behavior, and regeneration following injury will be discussed.

4:30 - 5:15 PM — Macromolecular Engineering by Taming Free Radicals Using Atom Transfer Radical Polymerization
Professor Krzysztof Matyjaszewski, Nichols Medalist,
Center for Macromolecular Engineering, Carnegie Mellon University

Macromolecular Engineering (ME) is a process comprising rational design of (co)polymers with specific architecture and functionality, followed by precise and efficient polymer synthesis and processing in order to prepare advanced materials with target properties. We employed radical polymerization for ME due to its tolerance to many functionalities although radicals are difficult to be controlled, since they have very short life times (<1 s) and are involved in side reactions. Taming free radicals was accomplished via dynamic equilibria between minute amounts of radicals and large pool of dormant species using copper-based ATRP (atom transfer radical polymerization) catalytic systems. By applying new initiating/catalytic systems, Cu level in ATRP was reduced to a few ppm and ME provided polymers with precisely controlled molecular weights, low dispersities, designed shape, composition and functionality as well as block, graft, star, hyperbranched, gradient and periodic copolymers, molecular brushes and organic-inorganic hybrid materials and bioconjugates. These polymers can be used as components of various advanced materials such as health and beauty products, biomedical and electronic materials, coatings, surfactants, lubricants, additives, sealants as well as nanostructured multifunctional hybrid materials for application related to environment, energy and catalysis.

5:20 PM — Social Time

6:00 PM — Medal Award Ceremony

Presiding: Dr. Ruben M. Savizky, 2020 Past Chair, ACS New York Section

ACS Greetings: Dr. H N Cheng, President of ACS National
Dr. Thomas Connelly, ACS Chief Executive Officer;
Dr. Dorothy Phillips, Director at Large ACS Board of Directors
Dr. Katherine Lee, Director, District 1

Introductory Address:	**Dr. David A. Tirrell** California Institute of Technology
Presentation of the Medal:	**Dr. Ruben M. Savizky**
Acceptance Address:	**Dr. Krzysztof Matyjaszewski** Nichols Medalist

For More Information and to register (free): Please visit the New York Section website at www.NewYorkACS.org

Biography

Krzysztof (Kris) Matyjaszewski was born in Poland, in 1950. He obtained his PhD degree in 1976 at the Polish Academy of Sciences in Lodz, Poland, working with Prof. S. Penczek. Since 1985, he has been at Carnegie Mellon University (CMU) where he is currently J. C. Warner Professor of Natural Sciences and a director of Center for Macromolecular Engineering. He served as Head of Chemistry Department during 1994-1998. He also holds appointments of Adjunct Professor at the University of Pittsburgh, the Polish Academy of Sciences in Lodz and Technical University in Lodz, as well as Departments of Chemical Engineering and Materials Science at CMU.

Matyjaszewski's main research interests include controlled/living radical and ionic polymerization, catalysis and synthesis of advanced materials for optoelectronic, energy-related, environmentally-related as well as for biomedical applications. In 1994, he discovered Cu-mediated atom transfer radical polymerization (ATRP). In order to tame the uncontrolled free radical polymerization behavior, Matyjaszewski introduced a new concept to insert periods of ca. 1

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AMERICAN CHEMICAL SOCIETY'S NEW YORK SECTION, INC. – WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM

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min dormancy after each ca. 1 millisecond of radical activity. This way, the overall life of propagating chains was extended from about 1 second to several hours with hundreds of intermediate dormancy periods. This would be like extending person's life from 100 years to 3000 years, if after each 1 day of activity a person could be dormant for 1 month. The concept of equilibria between active and dormant species applies not only to polymer systems but also operates in biological systems, such as Vitamin B-12, and also redox equilibria in the respiratory chain and lipid isomerization or redox recycling of the antioxidant systems. ATRP has its roots in atom transfer radical addition/cyclization, a highly selective and efficient organic reaction. Organic chemists originally used very high concentration (ca. 10 mol %) of copper catalysts. Matyjaszewski invented new catalysts for ATRP, which are million times more powerful. This year he reported new ATRP catalysts, which are billion times more reactive than original catalysts used in seminal 1995 paper. Thus, they can be used at very low concentrations, parts per million (ppm) relative to monomer. The catalysts used in so small amounts can be continuously regenerated using mild reducing agents such as ascorbic acid, iron or copper wire, electrical current, mechanical forces or light under excellent spatio-temporal control. Now, organic chemists adopted these catalytic systems also to organic reactions.

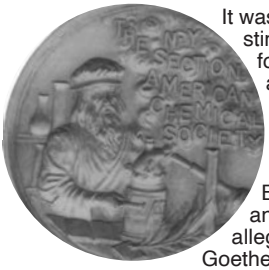
ATRP has enabled preparation of well-defined, essentially tailor-made polymers via macromolecular engineering. In these systems, all polymer chains grow concurrently and steadily. This allows synthetic chemists to prepare a myriad of well-defined polymers, including block and gradient copolymers, stars, molecular brushes, also various bioconjugates by linking synthetic polymers with nucleic acids, proteins and enzymes, as well as inorganic-organic hybrids by anchoring polymers to nanoparticles, flat wafers and other inorganic materials. In 1996 and 2000, Matyjaszewski founded two industrial Consortia with over sixty participating international chemical companies to facilitate technology transfer to industry. So far, ATRP has been licensed 17 times and commercial production of advanced polymers by ATRP started in 2004 in US, Japan and Europe. ATRP has been used to prepare well-defined polymers with precisely designed and controlled macromolecular architecture, including various hybrids and bioconjugates, as well as smart, stimuli responsive systems. ATRP has been successfully used to commercially produce better pigment dispersants for inkjet printing, automotive and appliances coatings, cosmetics, chromatographic packings, adhesives, sealants for self-cleaning windows, flat panel display and automotive gaskets. Other applications, being evaluated, include drug and nucleic acid delivery, coatings for cardiovascular stents, scaffoldings for bone regeneration, biocidal surfaces, degradable plastics, and others in biomedical, optoelectronic, and automotive industry.

Matyjaszewski's group at CMU has comprised over 100 graduate students, 100 undergraduate students and over 140 postdoctoral fellows. He has co-authored over 1,100 publications (cited 100,000 times, h-index 154, ISI), co-edited 20 books, 99 book chapter and holds 62 US and over 150 international patents.

Matyjaszewski received the 2017 Benjamin Franklin Medal in Chemistry, 2015 International Dreyfus Prize in Chemistry, 2014 National Institute of Materials Science (Japan) Award, 2013 Madison Marshall Award, 2012 Prize of Société Chimique de France, 2012 Maria Curie Medal, 2012 Dannie-Heineman Prize, Goettingen Academy of Science, 2011 Wolf Prize in Chemistry, 2009 Presidential Green Chemistry Challenge Award, and from the American Chemical Society: 2019 Award in Chemistry of Materials, 2013 AkzoNobel North America Science Award, 2011 Hermann Mark Award, 2011 Award in Applied Polymer Science, 2002 Polymer Chemistry Award, 1995 Creative Polymer Chemistry Award. He received eleven honorary degrees (Ghent, Lodz, Athens, Moscow, Toulouse, Pusan, Paris, Technion, Poznan, Padova, Coimbra) and is a member of National Academy of Engineering, National Academy of Sciences, Polish Academy of Sciences, Russian Academy of Sciences, Australian Academy of Sciences, honorary member of Israel and Chinese Chemical Society and a fellow of National Academy of Inventors, International Union of Pure and Applied Chemistry, and American Chemical Society.

THE WILLIAM H. NICHOLS MEDAL AWARD

Dr. William H. Nichols, a charter member of the American Chemical Society and its president in 1918 and 1919, was a pioneer in the development of the chemical industry in the United States and an early champion of the importance of chemistry in the future growth of the nation. The success of his companies can be traced to several notable principles that guided Dr. Nichols' career. First was his deep belief in research and development. Second was his support for science education and the students of chemistry. Third was his concern for the welfare of his employees. Overriding all of these was his often quoted belief that "the Golden Rule is as applicable in business as it is in church". It is this legacy of Dr. William H. Nichols that the New York Section is proud to maintain in its annual award of the Nichols Medal each spring.



It was in 1902, that Dr. Nichols established this annual award, the first in its field, of a gold medal to be presented to a chemical scientist for original research. The William H. Nichols Medal was first awarded in 1903. Since its inception, the New York Section of the American Chemical Society has administered the award. It has been perpetuated through the generosity of Dr. Nichols, his family, and the Nichols Foundation, Inc. The award ceremony has evolved into a Distinguished Symposium and a Medal Award Banquet during which scientists can interact with their colleagues and with chemistry students. The Nichols Medal itself depicts the allegorical figure of Dr. Faust in his laboratory as described by Goethe, and the obverse side bears an inscription of the name of the medalist and the award citation.

A listing of all of the William H. Nichols Medalists and their medal citations can be found at **www.newyorkacs.org/nicholsmedalists.html**.

68th ANNUAL ACS UNDERGRADUATE RESEARCH SYMPOSIUM

Organized by the Student Activities Committee of the New Yofk Section

Keynote Addresses:

"Searching for the LEGOS of Life"

Speaker: Dr. Paul G. Falkowski
Rutgers University

and

"Venom to the Rescue: Advancing Biological and Chemical Diversity One Killer Snail at a Time"

Speaker: Dr. Mandë Holford
CUNY Hunter College

The Student Activities Committee of the New York Section of the American Chemical Society would like to invite you to attend the 68th Annual Undergraduate Research Symposium (URS). The symposium provides an excellent opportunity for undergraduate chemistry students in the New York Metropolitan Area to present the results of their research. A remarkable feature of this meeting is that some of the students are also engaged as moderators of the scientific presentations in a variety of chemistry disciplines. Due to the Covid-19 Pandemic, this year's symposium will be online. Presenters are asked to register as 'Student'. Students that wish to attend the event but are not presenting may register as 'Guests'.

Date: Saturday, May 1, 2021,
Time: 9:00 AM – 12:30 PM
Place: Online

Registration and Abstract Submission: **http://newyorkacs.online/URS/** (everyone who plans to attend must register)

Abstract Submission Deadline: April 2, 2021 (use template file)

Registration Deadline: April 16, 2021

Looking forward to seeing you at the 68th Annual URS!

Dr. Michele Vittadello
CUNY Medgar Evers College

Dr. Naphtali O'Connor
CUNY Lehman College

Dr. Pratikkumar Rathod
CUNY La Guardia Community College

Dr. Kevin Mark
CUNY La Guardia Community College

Co-Chairs, ACS NY Section,
Student Activities Committee

See flyers on pages 12 and 13 and Call for Abstracts on page 22.

ACS Chemistry for Life®

68th ANNUAL UNDERGRADUATE RESEARCH SYMPOSIUM

Organized by the Student Activities Committee of the New York Section of the American Chemical Society

Saturday, May 1st, 2021

9:00 a.m. – 12:30 p.m.

Register for the event at http://newyorkacs.online/URS/

Speaker

Dr. Paul G. Falkowski

Institute of Marine and Coastal Sciences
Department of Chemistry and Chemical Biology
Rutgers University

Paul G. Falkowski is the Bennett L. Smith Professor of Business and Natural Resources at Rutgers University. His research interests include evolution, paleoecology, photosynthesis, biophysics, biogeochemical cycles, symbiosis and sustainable energy. Born in 1951 and raised in New York City, Falkowski earned his B.S. and M.Sc. degrees from the City College of the City University of New York and his Ph.D. from the University of British Columbia. He has received numerous honors, including the 2018 Tyler Prize for Environmental Achievement (often described as the 'Nobel Prize for the Environment'), and is a member of the U.S. National Academy of Sciences. He has authored or coauthored over 360 papers in peer-reviewed journals and books. Together with John Raven, he is co-author of a textbook, Aquatic Photosynthesis (Princeton University Press), and the sole author of the popular science book, Life's Engines. He is the founding Director of the Rutgers Energy Institute and heads the Environmental Biophysics and Molecular Ecology program at Rutgers University.

Searching for the LEGOS of life

The black hole of chemistry is the origin of life. Over the past two centuries, many chemists have attempted to understand how molecules can both become replicative and catalytic, but we have, thus far failed to understand autocatalysis that can lead to a system of reactions far from thermodynamic equilibrium. In this talk I will discuss the distance between applied and theoretical chemistry, and most importantly, what questions each of us asked, and have answered, when we were six years old.

RUTGERS UNIVERSITY | NEWARK

Department of Chemistry

Dr. H. Martin Friedman University Lecture

Friday, April 16, 2021 – 11:30 a.m.

Pre-registration by email
svb26@newark.rutgers.edu
for Zoom meeting link

Professor Shannon Stahl

Department of Chemistry
University of Wisconsin-Madison

"CATALYTIC REACTIONS WITH MOLECULAR OXYGEN, FROM CHEMICAL SYNTHESIS TO FUEL CELLS"

Speaker

Dr. Mandë Holford
Department of Chemistry
Hunter College – CUNY

Mandë Holford is an associate professor of chemistry at Hunter College and the Graduate Center, CUNY, with scientific appointments at the American Museum of Natural History and Weill Cornell Medicine. Her joint appointments reflect her interdisciplinary research, which combines chemistry and biology to discover, characterize, and deliver novel peptides from venomous marine snails as tools for manipulating cellular physiology in pain and cancer. She is a World Economic Forum New Champion Young Scientist, as well as the recipient of the prestigious Camille Dreyfus Teacher-Scholar Award and an NSF CAREER Award. Holford is active in science education, advancing public understanding of science, and science diplomacy. She cofounded several initiatives, including KillerSnails.com, an award-winning learning-games company that uses extreme creatures as a conduit to advance scientific teaching and learning, and RAISEW.org, an NSF project to increase women's involvement in science.

Venom to the Rescue: Advancing Biological and Chemical Diversity One Killer Snail at a Time

Animal venoms are comprised of a diversity of peptides that manipulate molecular targets such as ion channels and receptors, however, identifying bioactive peptides still remains a significant challenge. Breakthrough technological advancements have enabled interdisciplinary studies using genomics, transcriptomics, and proteomics to expand venom investigation to animals that produce small amounts of venom or lack traditional venom producing organs. One group of non-traditional venomous organisms that have benefitted from the rise of -omic technologies is the Terebridae (auger snails). A venomics strategy has been applied to the discovery, characterization and optimization of Terebridae venom peptides, teretoxins. Venom peptides, like teretoxins, and the genes from which they are derived, are a resource for investigating biological processes pertaining to organismal evolution (adaptive radiation, diversification), gene development (duplication, neofunctionalization), and cellular physiology involving ion channels (activating/inhibitory ligands). This talk will demonstrate the scientific path *from mollusks to medicine* examining how venom evolved over time in the Terebridae and using this evolutionary knowledge as a roadmap for discovering and characterizing new compounds with therapeutic potential for treating pain and cancer.

SIGNIFICANT DATES FOR 68th URS

Deadline for Abstract Submission – **April 2, 2021** Abstract acceptance notification – April 9, 2021
Deadline for Symposium Registration – April 16, 2021

2021 Co-chair
Dr. Michele Vittadello
Medgar Evers College - CUNY
mvittadello@mec.cuny.edu

2021 Co-chair
Dr. Naphtali O'Connor
Lehman College - CUNY
naphtali.oconnor@lehman.cuny.edu

2021 Co-chair
Dr. Pratikkumar Rathod
LaGuardia Community College - CUNY
prathod@lagcc.cuny.edu

2021 Co-chair
Dr. Kevin Mark
LaGuardia Community College - CUNY
kmark@lagcc.cuny.edu

Deadline for items tobe included in the MAY 2021 issue of *The Indicator* is

MARCH 28, 2021

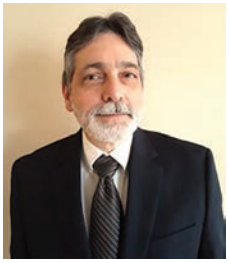
WESTCHESTER CHEMICAL SOCIETY

Distinguished Scientist Award and Student Achievement Awards Dinner Meeting:

"Trisiloxane Alkoxylates as Adjuvants for Agriculture"

Speaker: George A. Policello
Research Fellow
Momentive Performance Materials
769 Old Saw Mill River Road
Tarrytown, NY

DISTINGUISHED SCIENTIST 2019:



Mr. George Policello for Contributions to the Discovery, Development & Application of Trisiloxane Alkoxylates as Agricultural Adjuvants. Mr. Policello had been selected as our 2020 Distinguished Scientist. Because of the Covid-19 pandemic, the Westchester Chemical Society Board of Directors had decided to postpone the Distinguished Scientist Award until 2021, retaining Mr. Policello as our Distinguished Scientist.

Abstract:
Trisiloxane-based surfactants have been used for over 35 years as spray adjuvants for agricultural applications. Relative to conventional adjuvants, trisiloxane surfactants provide an extremely low aqueous surface tension (~21 mN/m at 0.1%). This surface activity, coupled with a compact hydrophobe (trisiloxane portion of the molecule), makes these unique surfactants "Super-spreaders", where the spray droplet is transformed into a thin film on the leaf surface. Therefore, trisiloxane solutions easily wet almost any waxy leaf surface, and the overall coverage on a target plant is significantly increased. This results in spray volume reductions of up to 90%, benefiting areas where water is in short supply. Additionally, a reduction in water usage allows the grower to treat more acres per tank-load, thereby saving time, labor and energy.

Another extraordinary property of trisiloxane surfactants is their ability to promote rapid uptake of spray solutions via stomatal flooding in as little as 20 seconds. Active ingredients taken up into the plant via this pathway become immediately rainfast (resistant to wash-off), thereby reducing waste, and in some cases allowing for a reduction in pesticide usage.

Silwet L-77 adjuvant was the first trisiloxane-based surfactant developed for agricultural applications. This unique class of "Super-spreading" wetting agents was introduced into agriculture in 1985, in response to the inability of many herbicides to control gorse (Ulex europaeus), a noxious invasive weed in New Zealand. Union Carbide, in collaboration with the Forest Research Institute in NZ, quickly realized that Silwet L-77 adjuvant significantly enhanced the performance of herbicides that were previously incapable of controlling gorse. In fact, only Silwet L-77 adjuvant had the ability to effectively wet the waxy surface of gorse, thereby enabling a 70% reduction in pesticide requirements, while delivering effective control.

This presentation will detail the historical development of "Super-spreading" trisiloxane-based wetting agents, including examples illustrating how commercial growers use such surfactants as a regular part of their spray program, including their use in organic farming.

Biography:
George Policello is a Technology Research Fellow with Momentive Performance Materials, in Tarrytown, NY. His primary responsibilities include the direction of new product development and platform technology research programs focused on agricultural applications that enable decreased agricultural spray volumes, reduced active ingredient dosage, and improved spray control and efficiency.

George began his career in 1980 with Union Carbide in Tarrytown, focusing on the synthesis of organomodified silicones for a broad range of applications, including coatings, textiles and personal care. In 1985 he joined Lever Research in Edgewater NJ, where he studied the interactions between polyether-modified silicone surfactants and conventional wetting agents. He rejoined Union Carbide in 1987 (subsequently Crompton Corporation, OSi Specialties, GE Silicones, and Momentive Performance Materials) where he has since been responsible for the

development of silicone surfactants, specifically trisiloxane alkoxylates as agricultural spray adjuvants. George has contributed to the understanding of the super spreading mechanism associated with these unique surfactants, as well as the role of spreading on the uptake and efficacy of agrochemicals on and into foliar surfaces. Additionally, his research on surfactant-pair interactions between trisiloxane alkoxylates and conventional surfactants has added to the understanding of how dynamic surface tension influences spray droplet adhesion on leaf surfaces.

George graduated from Mercy College in Dobbs Ferry, NY in 1979 with a Bachelor of Science degree in Biology. He holds more than 45 patents related to silicone surfactants and agricultural applications, and is the author of more than 70 external publications and presentations. Additionally George has been involved with the Silicones Environmental Health and Safety Council (SEHSC), and the Counsel of Producers & Distributors of Agrotechnology (CPDA).

Date: **Wednesday, May 12, 2021**
Time: Opens 6:45 PM EDT;
Meeting 7:00 (US and Canada)
Place: Cloud HD Video Meeting using a Zoom Cloud Platform
Cost: Free and open to the public

No password needed.
Join URL:
https://sunywcc-edu.zoom.us/j/81235674781

For further information: contact Rolande Hodel, Rolande Hodel, **rrhodel@aol.com**,

Or

Peter Corfield, **pcorfield@fordham.edu**, Phone: 914-762-4468;
Text: 914-980-9128 or 914-218-7607.,

Or

Paul Dillon, **PaulWDillon2@hotmail.com**, Phone: 914-941-0890, Text: 914-393-6940

RSVP Required to Dr. Peter Corfield

E-Mail: **pcorfield@fordham.edu**, or **pwrc@earthlink.net**

For more information, contact Paul Dillon:
E-Mail **PaulWDillon2@hotmail.com**
Phone 1-914-393-6940

ORGANIC TOPICAL GROUP —

JOINT MEETING WITH THE NEW YORK ACADEMY of SCIENCES CHEMICAL BIOLOGY DISCUSSION GROUP

Chemical Biology Discussion Group Year-End Symposium

Organizers: Yael David, PhD
Memorial Sloan Kettering Cancer Center

Tania Lupoli, PhD
New York University

Allie Obermeyer, PhD
Columbia University

Barbara Knappmeyer, PhD
The New York Academy of Sciences

Sonya Dougal, PhD
The New York Academy of Sciences

Speakers: Matthew Bogyo, PhD
Stanford University School of Medicine

Shiva Malek, PhD
Genentech

The Chemical Biology Discussion Group brings together chemists and biologists interested in discussing the latest breakthroughs. This year, the annual year-end meeting features two keynote speakers: Dr. Matthew Bogyo of Stanford University and Dr. Shiva Malek of Genentech.

Date: **Thursday, May 20, 2021**
Time: 1:00 – 5:30 PM
Place: Virtual Symposium (Webcast)
The New York Academy of Sciences
7 World Trade Center
250 Greenwich Street – 40th Floor
New York, NY 10007

Abstract Submission Deadline:
March 19, 2021

Opportunities for Short Talks!

Cost: For full details on pricing, please visit **www.nyas.org/ChemBio2021**. ACS members may use the Priority Code ACS to avail of NYAS member pricing.

For more information and to register for the event, go to: **www.nyas.org/ChemBio2021**

To become a Member of the Academy, visit **www.nyas.org/benefits**

ACS, NEW YORK SECTION'S 2021 SECTIONWIDE CONFERENCE VIRTUAL MEETING

The New York Section's Annual Sectionwide Conference was held virtually on January 30th. 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 2021 election candidates, and planning sessions for the Section's 2021 activities. Prof. Rita Upmacis, New York Section Chair for 2021, welcomed everyone and acknowledged the outstanding service of the Section's volunteers during 2020.

At the award ceremony, Prof. Ruben Savizky received via Zoom the ACS past chair pin and an engraved ACS plaque for his excellent and dedicated service as Chair of the New York Section in 2020. The 2020 Outstanding Service Award was awarded to Prof. Ping Furlan, US Merchant Marine Academy, for her extraordinary service and dedication to the Section. Ping is currently an alternate councilor for the New York chapter, actively involved in National Chemistry Week and also spearheaded the 3D Giant Periodic Table as a tribute to 2019 IYPT.

The three teaching awards were presented as follows: Outstanding Four-Year University with Graduate School Chemistry Faculty Teaching Award to Dr. Gerard Parkin, Columbia University; Outstanding Four-Year Undergraduate College and University Chemistry Faculty Teaching Award to Dr. Gina Florio, St. John's University; and Outstanding Two-Year College Chemistry Teaching Award to Dr. Abel Navarro, Borough of Manhattan Community College. Congratulations to all the awardees!

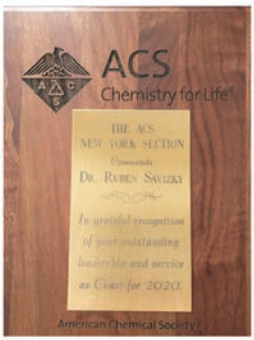
Following the award ceremony, Prof. Kathleen Kristian, 2021 New York Section Chair-elect, presented the names of the candidates for the upcoming 2021 elections and introduced the candidates who were attending the meeting.

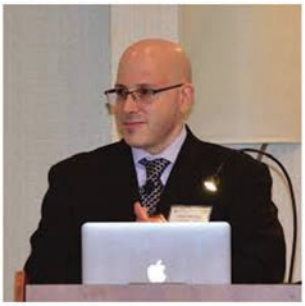
Dr. Mark E. Thompson, University of Southern California, gave a presentation on ""21st Century Alchemy: Making Coinage Metals Act Like Ir and Pt." The audience seemed to thoroughly enjoy his informative and illuminating presentation; there were plenty of questions and good discussion afterwards.

Following the keynote there were two presentations by New York Section Project SEED Students Micki Zheng (junior) and Keyleen Argueta (senior). Each gave a five minute video presentation of their project. Micki's research was titled: Incidence of Colon and Rectal Cancer Based on Foods. Keyleen's presentation was on A Comparison of Photosynthetic Characteristics Between C3 and C4 Plants. 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.

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

Service Plaque and Pin to the 2020 ACS New York Section Chair Dr. Ruben Savizky, The Cooper Union



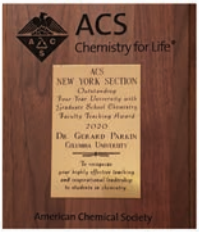


conference, to discuss goals and activities for 2021. Each committee chair gave a recap prior to the close of the Sectionwide Conference. Thank you to all who attended the meeting and we look forward to "seeing" you at future events.

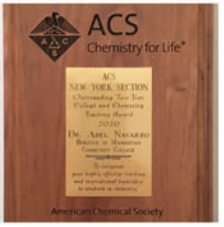
ACS New York Section Outstanding Service Award for 2020
Dr. Ping Furlan, USMMA

Outstanding Four-Year Undergraduate College and University Chemistry Faculty Teaching Award
Dr. Gina Florio, St. John's University

Outstanding Four-Year University with Graduate School Chemistry Faculty Teaching Award
Dr. Gerard (Ged) Parkin, Columbia University



Outstanding Two-Year College and Chemistry Teaching Award
Dr. Abel Navarro, Borough of Manhattan Community College



The Indicator **is posted to the web around the 15th of the previous month at**
www.TheIndicator.org

WESTCHESTER CHEMICAL SOCIETY

On Tuesday, February 9, 2021, the Westchester Chemical Society (WCS) held a remote (Zoom) meeting.

John T. McDevitt, Ph. D., Professor of Biomaterials at NYU's School of Dentistry and Professor of Chemical and Biomolecular Engineering at NYU's Tandon School of Engineering spoke on "Development of a Smart Clinical Testing Ecosystem for COVID-19 and Beyond". This talk was an expansion of the originally announced (The Indicator, February 2021, pp. 7, 8) talk that had been entitled "Clinical Decision Support Tool and Rapid Point-Of-Care Platform for Determining Disease Severity in Patients with COVID-19". Dr. McDevitt is also a director of The Gulf Coast Consortium of Early Disease Detection and the founder of several diagnostics companies including OraLiva (Precision Diagnostic Clinical Services)and SensoDx (Point of Care Instrument and Cartridge). In broad terms, Dr. McDevitt noted current gaps in diagnostic testing, some new diagnostic tools including a platform to digitize biology, early disease detection using an integrated diagnostic platform, some case studies including a cardiac health scorecard, Covid-19 screening and severity/risk estimation, and dental applications, and the development and deployment of a smart diagnostic ecosystem. For Covid-19, he noted several testing gaps:

Virus detection, PCR, the gold standard, is expensive, has long turn-around time, and samples are usually assayed remotely. Other virus tests, such as loop mediated amplification (LAMP) are less accurate.

Serology (antibody) tests reflect prior infection and are less accurate than PCR tests.

Antigen (viral protein) tests are rapid and can be done at home but are less accurate. They are good to rule-in infection but not as good to rule it out.

Severity tests are not commonly done but can be used prognostically, for resource allocation, for decisions on hospital admission, ICU admission and possible ventilator needs.

The approach to these problems is to develop accurate diagnostics to capture disease early before things spiral out of control. Dr. McDevitt discussed some customized disease severity tools and Apps. His approach is to use a programmable bio-nano-chip along with a platform capable of accurate cell and protein analyses to digitize biological data. The data are sent to cloud-based services which can calculate risk scores and also monitor changes over time in individual patients. His platform has been recognized with an award from the American Association for Clinical Chemists.

His first case study was a cardiac scorecard that calculates a cardiac health score (0 to 100) from a range of cardiovascular biomarkers. As expected, cardiac scores decline with age. The second case study involved the Covid-19 pandemic, His Covid-19 severity score (again, 0 to 100) ranks Covid patients as mild to moderate (likely do not require hospitalization), severe (probably require hospitalization, may develop pneumonia, acute respiratory distress syndrome, sepsis, septic shock, cardiomyopathy, arrhythmia, kidney injury, secondary infections) and critical (will likely require ICU admission, ventilation, may develop respiratory failure, cardiac injury, shock, multi-organ dysfunction, and have a high risk of death). The Covid score is calculated from four biomarkers (cardiac Troponin I, a marker of cardiac injury, D-Dimer, a marker of ischemia and clotting, CRP, a marker of inflammation, and procalcitonin, a marker of sepsis). All four have a clear separation amongst patients who survive and those who die. A Monte Carlo simulation showed an area under the Receiver Operating Characteristic curve of 0.974, which is excellent (a coin toss has an area of 0.5). Using data from Wuhan, China, the area is 0.94, also excellent. There is also a clean separation of sequential Covid-19 scores for individual patients who were discharged or who died. The third case study looked at the role of dentists both in the age of the Covid-19 pandemic and also more generally. A three tier screening procedure is suggested. First, symptoms (cough, fever, shortness of breath) are questioned. If present, reschedule an appointment; if not move on to pre-screening using a Covid-19 pre-screening score. If this is low, no Covid testing is needed; if not, move on to dental screening (antigen and antibody tests in the dental setting).

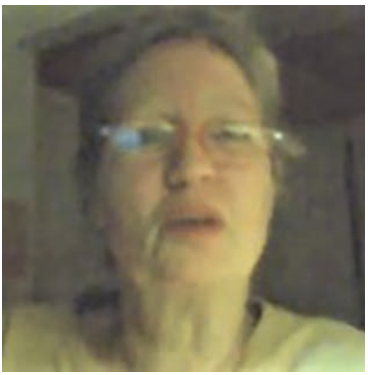
Finally, a smart diagnostics ecosystem was discussed. This would integrate electronic health records and federal and state databases to calculate a score, possibly generating a "patient passport".

After the talk, there was an enthusiastic and very informative question and answer period.

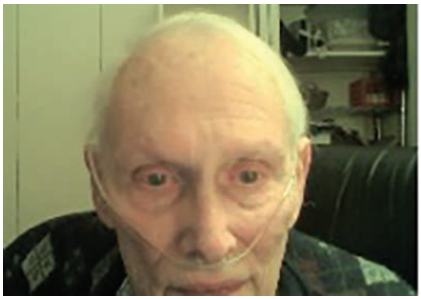
Dr. McDevitt completed his Ph. D. in chemistry at Stanford University. He served for 5 years as the Brown-Weiss Professor of Bioengineering and Chemistry at Rice University and for 20 years at The University of Texas at Austin. He currently is a Full Professor within the Department of Biomaterials at The New York University School of Dentistry, a member of NYU's Bioengineering Institute, and a faculty member in the NYU Department of Chemical and Biomolecular Engineering within the Tandon School of Engineering. He has received several prestigious awards, has written over 200 peer-reviewed papers, holds more than 150 patents, was the principle investigator for six major clinical studies, and has founded two diagnostics companies.

Below are screen shots (all courtesy of Paul Dillon) of the speaker, John McDevitt, Ph.D., the Westchester Chemical Society co-chairs, Paul Dillon, Ph.D. and Rolande Hodel, Ph.D., and our treasurer and education secretary, Peter Corfield, Ph.D.

John McDevitt



Rolande Hodel



Paul Dillon

Peter Corfield

Deadline for items to be included in the MAY 2021 issue of *The Indicator* is

MARCH 28, 2021

North Jersey Meetings

https://www.njacs.org

2021 NORTH JERSEY EXECUTIVE COMMITTEE MEETINGS

Section officers, councilors, committee chairs, topical group chairs, and section event organizers meet regularly at the Executive Committee Meetings to discuss topics of importance to running the section and representing the membership. The team is scheduling monthly virtual meetings on Monday evenings at 7 – 9 PM (EST). See below table for the 2021 meeting dates. All ACS members are welcome to attend these meetings and become more involved in section activities. For any additional information, please contact Mirlinda Biba (NJACS 2021 Chair) at **mbiba@njacs.org**.

There are no other Subsection meetings scheduled for March.

2021 ACS North Jersey Local Section Executive Committee Meetings (virtual) Schedule

Month	Meeting Date Time: 7-9 PM EST (virtual)
April	Monday, April 19, 2021
May	Monday, May 17, 2021
June	Monday, June 14, 2021
September	Monday, September 27, 2021
October	Monday, October 18, 2021
November	Monday, November 15, 2021
December	Monday, December 13, 2021

Deadline for items to be included in the MAY 2021 issue of *The Indicator* is MARCH 28, 2021

Call for Nominations

COMMITTEE ON THE HISTORY OF THE NEW YORK 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 Home Page at **https://www.newyorkacs.org** under the Committee on the History of the NY Section. 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.

ACS NEW YORK SECTION'S OUTSTANDING SERVICE AWARD FOR 2021

Each year the New York Section presents the Outstanding Service Award to a very deserving member of the section. Many members of the New York Section provide their time, leadership, talent and educational skills to the New York Section. The tradition of excellence of the New York Section is attributable directly to the cumulative effect of these individuals. Please help the New York Section to recognize the efforts of our colleagues by nominating them for this award.

Nominations will be reviewed by a committee consisting of the previous five winners of the award. The Outstanding Service Award for 2021 will be presented at the New York Section's Sectionwide Conference in January 2022.

A Nomination letter with including up to two letters of recommendation per nominee should be emailed to the Office Administrator, Ms. Bernadette Taylor at **btaylor@newyorkacs.org**

For more information about the award along with a list of former award recipients, please visit the ACS New York Section's website: **http://newyorkacs.online/osa/**

THE WILLIAM H. NICHOLS MEDAL AWARD FOR 2022

The New York Section is accepting nominations for the William H. Nichols Medal Award for the year 2022. This distinguished award, established in 1902 by Dr. William H. Nichols, for the purpose of encouraging original research in chemistry, is the first award authorized by the American Chemical Society. It is presented annually in recognition of an outstanding contribution in the field of chemistry, and consists of a gold medal, a bronze replica and a cash award. The medals are presented at the William H. Nichols Meeting that consists of a Distinguished Symposium related to the medalist's field of expertise and a Medal Award dinner.

Investigators who have published a significant and original contribution in any field of chemistry during the five calendar years preceding the presentation meeting are eligible for consideration by the Nichols Medal Jury. Each nomination requires a completed Nomination Form, biographical and professional data, and seconding letters. Since the nomination procedure will now utilize the New York Section website, please access the forms and instructions here:
https://newyorkacs.org/documents/Nichols_Nomination_Form.doc

Nominations must be received by May 31, 2021.

The Nichols Medal Award Jury will meet in June 2021 to select the Nichols Medalist for 2022.

Nominations remain active for a period of five years and additions may be made during that time. After five years, a new nomination is required. The list of previous Nichols Medal recipients can be found on our website: https://www.newyorkacs.org/nicholsmedalists.html

Questions regarding the nomination procedure should be directed to
Nichols_medal@newyorkacs.org

Call for Volunteers

OPPORTUNITY FOR ACS MEMBERS TO AID STUDENTS 2 SCIENCE IN A HYBRID VIRTUAL LAB PROGRAM

Can you spare a few hours of your time? Do you like working with students and would you like the opportunity to share your science knowledge in a classroom? Students 2Science (S2S) is seeking volunteers to support its V-Lab program. S2S has a series of elementary, middle, and high school experiments that run in various schools across New Jersey. Members are especially needed to mentor students in participating schools to help with experiments. It's great fun, a wonderful way to give back, and only requires

1-2 hours of your time. Experiments include CO_2 to the Rescue, Curious Crystals, Mystery of M&Ms, Thermochemistry: *Exothermic and Endothermic Chemical Reactions, and Glow it Up: The Chemistry of Luminol.* All are age-appropriate and volunteers are provided with instructions on how to support in the classroom prior to your scheduled volunteer day.

For more information, contact Cyndi Roberson, Director of Corporate Relations, at (973) 947-4880 ext. 516 or visit the website to register for the upcoming school year: **https://www.students2science.org**.

(continued on page 22)

Call for Volunteers

(continued from page 21)

SEMINAR SPEAKERS WANTED

The New York Section of the ACS is in search of speakers that we can add to our Speakers Bureau database of interested local area 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 contact the New York Section Office at (732) 770-7324 or send an email to Bernadette Taylor **btaylor@NewYorkACS.org** with the following information that will be posted on the Section's website: your name, affiliation, a 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 our other members!

Call for Applications

FREDDIE AND ADA BROWN AWARD

This Award recognizes and encourages high achieving middle- and high-school students, of African American and Native American heritage, to further develop their academic skills, with views on careers in the chemical sciences.

Award Amounts

Middle School $100.00 Check and $50.00 gift certificate : High School $200.00 Check and $100.00 gift certificate.

Who is Eligible

Middle School students enrolled in a science class : High School students who have completed a chemistry course

Grades

Middle School B Average or better in Science, B Average overall : High School B Average in Chemistry, B Average overall

Letter of Recommendation

Math or Science/Chemistry Teachers or Guidance Counselor

Statement

Middle School "Why I Like Science" : High School "Why I Like Chemistry"

Selection Criteria

Applicants must be African American (Black) or Native American (including Pacific Islander) or of mixed race.

Transcript

Official transcript required.

Financial Need

Not Required.

Applications available on the web: **www.njacs.org/freddieadabrown** or from your school guidance office.

Return Application To

Freddie and Ada Brown Award, NJACS Section Office, 49 Pippens Way, Morristown, NJ 07960

Due Date

Completed Applications must be postmarked no later than **March 31 Annually**

Questions: Contact Jeannette Brown **Jebrown@infionline.net** or (908) 239-1515.

Call for Abstracts

68th ANNUAL ACS UNDERGRADUATE RESEARCH SYMPOSIUM

Organized by the Student Activities Committee of the New Yofk Section

Keynote Addresses:

"Searching for the LEGOS of Life"

Speaker: Dr. Paul G. Falkowski
Rutgers University

and

"Venom to the Rescue: Advancing Biological and Chemical Diversity One Killer Snail at a Time"

Speaker: Dr. Mandë Holford
CUNY Hunter College

Date: Saturday, May 1, 2021,
Time: 9:00 AM – 12:30 PM
Place: Online

Registration and Abstract Submission: **http://newyorkacs.online/URS/** (everyone who plans to attend must register)

Abstract Submission Deadline: April 2, 2021 (use template file)

Registration Deadline: April 16, 2021

Looking forward to seeing you at the 68th Annual URS!

See complete materials on pages 11-13.