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George A. Policello

Westchester Chemical Society's Distinguished Scientist Awardee

See articles on pages 5, 8-9.

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THIS MONTH IN CHEMICAL HISTORY

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

My esteemed colleague Emeritus Professor of Chemistry Costello Brown, whose experiences as a graduate student were reported in a previous column, has been cleaning out his garage and came across another item that has considerable interest for the history of chemistry. It is a reprint of an article from "American Scientist" – the Winter Issue of 1948- entitled "Chemical Achievement and Hope for the Future" by Linus Pauling of the California Institute of Technology. The article is prefaced by a splendid photograph of Pauling at the chalkboard discussing the "activated complex" in a reaction apparently involving gamma-globulin.

Now for the history. The article is based on a Sillman Lecture, delivered at Yale University, on the hundredth anniversary of the founding of the Sheffield Scientific School. In opening remarks Pauling gives his opinion that those hundred years "… have witnessed the nearly complete transition of chemistry from an essentially empirical and descriptive science to a largely exact and theoretical one." To illustrate: "…in 1847 the correct atomic weights of the elements had not been generally accepted, so that the formula of water was still written as HO by many chemists". Pauling touches on a number of outstanding landmarks in the decades following 1847. The concept of valence was advanced by Frankland in the early 1850s. The idea that molecules could be represented by structural formulas was introduced by Couper and independently by Kekule in 1858.

Turning to thermodynamics, a field of chemistry to which Yale made foundational contributions, in 1847 Josiah Willard Gibbs was only 8 years old. Joule had just established experimentally the first law of thermodynamics, by determining the mechanical equivalence of heat energy. Rather surprisingly the second law of thermodynamics pre-dates the first law by several decades. In 1824 the young engineer Sadi Carnot gave the first statement of what was later recognized as the second law. In the early 1850s William Thomson (Lord Kelvin) and independently Rudolf Clausius combined first and second laws to begin the application of thermodynamics to chemical systems. The flowering of this approach came with the publication by Willard Gibbs of Yale of his comprehensive treatises first of chemical thermodynamics in the 1870s, and later of his invention of statistical mechanics. Chemical thermodynamics reached essentially its current form in the early 20th. century with the statement by Nernst of the third law.

By 1947 when the Pauling lecture was given it was possible to predict, from a knowledge of the thermodynamic properties of a set of reagents, the equilibrium composition of a reaction in which they were involved. But: "…there still remains, however, one most important question to which a definite answer cannot in general be given. This is the question as to the rate at which the reaction will take place under given circumstances." Chemical kinetics is still in its infancy.

Pauling makes an interesting observation, in his exploration of thermodynamics, of attempts to reach increasingly low temperatures. Following James Dewar in the early 20th. century the Dutch scientist Kammerlingh Onnes reached a temperature of 0.71 K in work on liquid helium. Subsequently the chemist William Giauque invented the novel technique of adiabatic demagnetization that led to the production of temperatures as low as 0.001 K.

In the area of the chemical elements the years just prior to 1947 have led to striking developments of the periodic table. These were alluded to in a companion lecture to Pauling's given by E.O.Lawrence of U.C. Berkeley. Four transuranium elements have now been synthesized by what Pauling refers to as modern alchemy. They are neptunium; plutonium; americium; and curium. "We may look forward with confidence to the announcement that still more new elements have been made…" (About 20 more at the time of my column).

The article closes with speculations about the relations among chemistry, biology, and medicine, an area that became of increasing interest to Pauling in the later stages of his career. You may recall the interest raised by Pauling in his advocacy of mega-doses of Vitamin C to treat the common cold. At this stage he is probing the nature of the catalytic activities of enzymes and exactly how they work.

I enjoyed reading Pauling's address and the light it shone on the century before 1947 in chemical history. Let me urge my readers to clean out their garages, and send me any nuggets they unearth that relate to the history of chemistry.

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THE Indicator

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CONTENTS

EDITORIAL DEADLINES

May	March 28
June	April 28
September	July 28
October	August 28
November	September 28
December	October 28
January 2021	November 28, 2020
February 2021	December 28, 2020
March 2021	January 28, 2021
April	February 28

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April Calendar

NEW YORK SECTION

Thursday, April 2, 2020
LIACS April Spring Seminar
See page 8.

Saturday, April 4, 2020
CCEW Poetry Contest Entry Deadline
See page 16.

Friday, April 17, 2020
New York Section Board Meetings
See page 8.

Thursday, April 23, 2020
Westchester Chemical Society Distinguished Scientist Award Symposium
See pages 6-7; Biography page 5; Cover 1.

Friday, April 24, 2020
Hudson-Bergen Chemical Society
See pages 9-10.

Friday, April 24, 2020
LIACS 20th Annual Chemistry Challenge
See pages 10-11.

Saturday, April 25, 2020
CCEW Walk the Brooklyn Bridge Event
See page 10.

Wednesday, April 29, 2020
Metro Women Chemists' Committee
See page 12.

also

Thursday May 7, 2020
LIACS Student Awards
See page 12.

Thursday May 21, 2020
Organic Chemistry Topical Group
See page 13.

Tuesday, June 2, 2020
New York Nanoscience Discussion Group
See page 13.

Fridays, June 5, September 11, November 13, 2020
New York Section Board Meetings
See page 8.

Friday, June 12, 2020
MARM
See pages 17-19.

Friday, October 23, 2020 (rescheduled)
See explanation on page 29
Nichols Symposium
See pages 6-7, 29.

NORTH JERSEY SECTION

Monday, April 20, 2020
North Jersey Executive Meeting
See page 20.

Tuesday, April 21, 2020
Chemists Celebrate Earth Day
See pages 20-21.

also

Tuesdays, May 12 (Dr. P. Jane Gale Event), June 9, September 15 (Symposium/Vendor Show), October 13, December 8, 2020
North Jersey Mass Spectrometry Discussion Group
See page 20.

Thursday, September 10, 2020
North Jersey Drug Metabolism Discussion Group
See page 21 bottom.

Ad Index

George A. Policello, Distinguished Scientist Awardee

Mr. George Policello will receive the Westchester Chemical Society's 2019 Distinguished Scientist Award for Contributions to the Discovery, Development & Application of Trisiloxane Alkoxylates as Agricultural Adjuvants. The award ceremony will be held on Thursday, April 23, 2020.

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).

(See details of meeting on pages 8-9.)

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, October 23, 2020**
Place: Crowne Plaza Hotel, White Plains, NY

Date changed due to Coronavirus.
See explanation on page 29.

PROGRAM

1:00 PM Welcome — Professor Ruben M. Savizky, 2020 Chair, ACS New York Section, The Cooper Union

1:05 PM Opening of the Distinguished Symposium — Professor Rita K. Upmacis, 2020 Chair-elect, ACS New York Section, Pace University

1:15 PM Polymer-Enhanced Biology — Professor Alan J. Russell, Department of Chemical Engineering, Carnegie Mellon University

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.

2:00 p.m. 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.

2:45 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.

3:30 PM Coffee Break

4:00 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.

4:45 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.

MEDAL AWARD BANQUET

5:45 PM	Social Hour	
6:45 PM	Medal Award Dinner	
	Presiding:	Dr. Ruben M. Savizky 2020 Chair, ACS New York Section, The Cooper Union
	ACS Greetings:	Dr. Katherine L. Lee District 1 Director, American Chemical Society
	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: Please visit the New York Section website at www.NewYorkACS.org

Online registration using PAYPAL for payment is available at www.newyorkacs.org/meetings/Nichols/2020Nichols.php

Or use the Tear Off reservation form at this line **BANQUET RESERVATIONS DEADLINE – OCTOBER 5, 2020**

MAIL RESERVATIONS TO:

ACS, New York Section Office
Attn: Bernadette Taylor
1313 3rd Ave., #2 South
Spring Lake, NJ 07762

More Information:
https://www.NewYorkACS.org
Phone: 732-770-7324
E-mail: btaylor@NewYorkACS.org

		Number	Total
Symposium only:	**$70 ($50 for ACS Members)**	_____	$_____
Student, unemployed	**$30**	_____	$_____
50 year ACS member	**$0**	_____	$_____
Banquet only:	**$150 ($130 for ACS Members)**	_____	$_____
Symposium & Banquet:	**$170 ($140 for ACS Members)**	_____	$_____
Table of 8 or more for symposium/banquet	**$150 per person (non-ACS Members)**	_____	$_____

Reserve our table in the name of:_____

Enclosed is my check, payable to: **ACS, NEW YORK SECTION, Inc. in the amount of** $_____

If reservations are for more than one person, please attach a list of the guests' names, and dinner selections where needed.

DINNER CHOICES: **Chicken**_____ **Prime Rib**_____ **Salmon**_____

Tickets will be mailed to the person designated below

NAME_____ **PHONE** _____

ADDRESS_____ **E-MAJL**_____

CITY, STATE, ZIP_____ _____

New York Meetings

https://www.newyorkacs.org

ACS, NEW YORK SECTION BOARD OF DIRECTORS

MEETING DATES FOR 2020

The dates for the Board of Directors Meetings of the ACS New York Section for 2020 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 2020 are posted on the New York Section website at **https://www.newyorkacs.org** below, and monthly in *The Indicator*. Dr. Ruben Savizky will chair all meetings. Refreshments will be available starting at 6:00 PM and the board meetings will start at exactly 6:30 PM.

The Board Meeting dates for 2020 are:

Friday, April 17
Friday, June 5
Friday, September 11
Friday, November 13

All meetings will take place at Cooper Union, 41 Cooper Square, New York NY 10003.

Directions
http://cooper.edu/admissions/visit/-location-and-directions

LONG ISLAND ACS 2020 SPRING SEMINAR PROGRAM

April Seminar

"Design and Total Synthesis of Self-healing Cyanine Fluorophores"

Speaker: Dr. Zhou Zhou
Assistant Professor
Queensborough Community College

Abstract: Small organic fluorophores are powerful research tools in biological imaging that have enabled unprecedented insights into mechanisms of bio-functions. Fluorescence applications as Single-molecule fluorescence resonance energy transfer (smFRET) requires high photo-stability and brightness of fluorophores. A series of cyanine dye molecules have been synthesized with significantly enhanced brightness, lifespan and water solubility by covalently attaching triplet state quenchers (TSQ) to the fluorophores along with other structural modifications. The advanced physical properties of these new fluorophores have already led to several previously impossible research projects, and shed light on both cellular and molecular processes masked by ensemble averaging in bulk investigations.

Date: **Thursday, April 2, 2020**
Time: Refreshments start at 5:30 PM
Seminar 6:00 PM to 8:00 PM
Dinner follows Seminar at a nearby restaurant
Cost: $25 per person
Place: Science Building, S-112
Queensborough Community College
222-05 56th Avenue
Queens, NY 11364
Directions:
http://www.qcc.cuny.edu/about/getting-here.html

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.

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.

Date: Thursday, April 23, 2020
Times: Social Hour - 5:00 PM
Lecture and Awards - 6:00 PM
Dinner - 7:00 PM
Place: Pace University
The Stephan Friedman Room
Wilcox Hall
861 Bedford Road – Entrance #1
Pleasantville, NY 10570
Cost: $30.00; Students $20.00

RSVP Required to Dr. Peter Corfield
E-Mail: **pcorfield@fordham.edu**, or
pwrc@earthlink.net
Phone – 1-914-762-4468, or
Text – 1-914-980-9128, or 914-218-7607.

For more information, contact Paul Dillon:

E-Mail **PaulWDillon2@hotmail.com**
Phone 1-914-393-6940

THE HUDSON-BERGEN CHEMICAL SOCIETY AND THE SCHOOL OF NATURAL SCIENCES OF FAIRLEIGH DICKINSON UNIVERSITY

The 22nd Annual Student Research Symposium

Date: Friday, April 24, 2020

This is a 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 book). All the presenters will receive certificates. Students who wish to present posters must send an abstract via e-mail to **mleonida@fdu.edu**, **by April 3, 2020**. The abstract should be in MS Word 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. The posters have to be self-supported. There is no registration fee.

This year's symposium also features the lecture:

"Chemistry and Biology of Benzimidazoles: A privileged heterocyclic scaffold for Medicinal Chemistry"

Speaker: Dr. Sabesan Yoganathan, PhD
Department of Pharmaceutical Sciences
College of Pharmacy and Health Sciences
St. John's University

Abstract: Benzimidazole scaffold is a privileged pharmacophore and has become a highly sought motif during drug discovery efforts. Several clinically used drugs and drug leads contain the benzimidazole core as a

(continued on page 10)

THE HUDSON-BERGEN CHEMICAL SOCIETY

(continued from page 9)

key structural component. Benzimidazoles exhibit a wide range of biological activities, including antibacterial, antiviral, and anti-cancer. This seminar will focus on our efforts towards the development of a synthetic methodology to generate benzimidazoles and the preliminary anti-cancer evaluation of selected benzimidazole derivatives.

Biography: Dr. Yoganathan is an assistant professor in the Department of Pharmaceutical Sciences at St. John's University, Queens, New York. He completed his PhD at the University of Alberta, Canada and his postdoctoral tenure at Yale University. His academic and research training is in the area of medicinal chemistry, organic synthesis, microbiology and natural products drug discovery. At St. John's University, Dr. Yoganathan teaches within the pharmacy program (Pharm.D.) and the pharmaceutical sciences graduate program (M.S. and Ph.D.). Research in the Yoganathan lab focuses on developing chemical and biological approaches to discover new natural product derivatives, and synthetic scaffolds as potential drug leads to for the treatment of infectious diseases and cancer. Dr. Yoganathan has been actively involved in STEM education through ACS – New York Section. He is the co-director of the Chemagination Science Competition, and he is part of the organizing committee for MARM 2020.

Date: **Friday, April 24, 2020**
Times: Poster Session 5:00 PM
Dinner 6:00 PM
Awards and Lecture 7:00 PM
Place Riverside Café
Fairleigh Dickinson University
Teaneck, NJ 07666
Cost: $10.00 for dinner - students/faculty (dinner cost for presenters will be waived)

Reservations: Dr. Mihaela Leonida (201)692-2338, e-mail: **mleonida@fdu.edu** **by April 10, 2020.**

LIACS —THE 20th ANNUAL CHEMISTRY CHALLENGE

Date: **Friday, April 24, 2020**

For more information, see flyer on page 11.

COME AND JOIN US CELEBRATE EARTH WEEK WITH OUR 9th ANNUAL "WALK THE BROOKLYN BRIDGE" EVENT

This year's Chemists Celebrate Earth Week's theme is: **"Protecting Our Planet Through Chemistry"**

Speaker: Dr. Monica Palta
Director of Environmental Science Undergraduate Program
Pace University

Our festivities will begin at 11:00 AM with check in and a healthy light breakfast including a "blender bar" followed by a keynote address delivered by Dr. Monica Palta. We will then head out for our annual parade over the beautiful Brooklyn Bridge and then return to Pace for lunch, dessert/coffee/tea, and some fun games and a raffle!

The event is free and open to all, but EVERYONE must register **by April 17**. Past the registration deadline there will be a $15 onsite fee at the event (cash only). To register:

http://www.newyorkacs.org/meetings/EarthDay/CCED.php

Contact: Prof. JaimeLee Rizzo, CCED Coordinator **jrizzo@pace.edu**

Date: **Saturday, April 25, 2020**
Time: 11:00 AM – 4:00 PM
Place: Pace University, Bianco Room
Cost: Free and open to the public, but everyone must register **by April 17** or pay a $15 (cash only) onsite fee.

ACS Local Section
New York
Long Island Subsection

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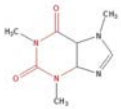
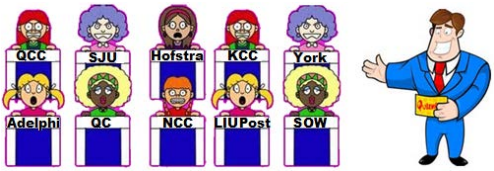


THE 20TH ANNUAL CHEMISTRY CHALLENGE



Come and Cheer on the local college student representatives as they match up their Chemistry knowledge against each other. Prizes will be awarded to 2yr and 4yr institution winners!

When: Friday, April 24, 2020
***Where*:** Queensborough Community College, Science Building Rm S-112
Time: 5 – 6 pm – Social with Food; 6 – ~8 pm - Chemistry Challenge
Directions: http://www.qcc.cuny.edu/about/driving.html
Registration: https://tiny.cc/lz0n3y
Contact: Dr. Daniel Resch (daniel.resch@ncc.edu)
Cost: **Free** (before 4/17), **$10** / team (after 4/17) – Checks should be made out to "NYACS Long Island Subsection" and sent to Dr. Philip Mark [Nassau Community College, 1 Education Dr, Garden City NY 11530]

***Event*:** The Chemistry Challenge is a quiz-style competition brought to you by the Long Island subsection of the American Chemical Society and sponsored by QCC-Student Affiliates of American Chemical Society. The event features a fun, multiple choice test covering General and Organic Chemistry topics. Students from nearby colleges work in teams and enter their answers using Clickers. Winners will be announced for 4yr and 2yr Colleges and prizes will be awarded at the conclusion of the event.

All Are Welcome

ACS Chemistry for Life®

American Chemical Society Long Island Subsection
http://www.newyorkacs.org/sub_island.php

NY ACS METRO WOMEN CHEMISTS' COMMITTEE

Opening Up the Envelope: Reading Out Mysterious Membrane Machinery in the Human Pathogen *Mycobacterium tuberculosis*

Speaker: Dr. Jessica C. Seeliger
Associate Professor
Pharmacological Sciences
Stony Brook University

Abstract: Tuberculosis (TB) is the deadliest infectious disease worldwide: 1.5 million people died of TB in 2018. *Mycobacterium tuberculosis* is the causative bacterium and humans are the only reservoir for this wily predator, which has co-evolved with humans for millennia. An important aspect of the *M. tuberculosis* arsenal is its unusual cell envelope, particularly the outermost layer or mycomembrane, which contains critical biomolecules—such as lipids and proteins—that enable bacterial survival and mediate virulence in the human host. However, the cell envelope remains a poorly understood compartment in mycobacteria, partly due to current experimental limitations. The Seeliger Lab develops biochemical methods to meet the unique demands of *M. tuberculosis* and uses them to explore the content and functions of the cell envelope, towards better understanding—and combatting—this human pathogen.

Biography: Jessica Seeliger has often been told that she is from California, although in truth she was born in northeastern Ohio (go Cavaliers!) and grew up in the college town of Oberlin. For reasons that even she doesn't quite understand, she loved chemistry from first encounter in eighth grade and went on to acquire 3 degrees in chemistry and work in 5 different chemistry labs on everything from carbon nanotubes to protein folding to transient absorption spectroscopy and finally to lipid synthesis in mycobacteria. This crazy ride through science is now enriched by the influence of her two toddlers and her research group of enthusiastically omnivorous scientists, who remind her every day why she loves being a professor.

Date: **Wednesday, April 29, 2020**
Time: 12:15 PM – 1:15 PM
Place: Pace University
One Pace Plaza
New York, NY 10038

For further information, please contact Dr. Rita K. Upmacis (**rupmacis@pace.edu**), Chair of the Metro Women Chemists' Committee.

EMPLOYMENT AND PROFESSIONAL RELATIONS COMMITTEE OF THE NEW YORK SECTION

To Human Resources Departments in Industry and Academia

The Employment and Professional Relations Committee maintains a roster of candidates who are ACS members seeking a position in the New York metropolitan area. If you have job openings and would like qualified candidates to contact you, please send a brief job description and educational/ experience background required to **hessytaft@hotmail.com**.

Candidates from our roster who meet the requirements you describe will be asked to contact you.

LONG ISLAND ACS HIGH SCHOOL AWARDS

For the thirtieth consecutive year the American Chemical Society will be recognizing the best High School chemistry students at each High School in Nassau, Suffolk, and Queens Counties. The best and brightest will be honored.

Date: **Thursday May 7, 2020**
Times:
Place: Nassau Community College
CCB Building
Multi-purpose Room 1st Floor.

Deadline for items to be included in the MAY 2020 issue of *The Indicator* is

MARCH 28, 2020

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

Chemical Biology Discussion Group Year-End Symposium

Organizers: Virginia Cornish, PhD
Columbia University

Kevin Gardner, PhD
CUNY- Advanced Science Research Center

Sarah Slavoff, PhD
Yale University

Sara Donnelly, PhD
The New York Academy of Sciences

Sonya Dougal, PhD
The New York Academy of Sciences

Speakers: Peter Schultz, PhD
The Scripps Research Institute

The Chemical Biology Discussion Group brings together chemists and biologists interested in discussing the latest breakthroughs. This year, the annual year-end meeting features a keynote from Dr. Peter Schultz of The Scripps Research Institute.

Date: **Thursday, May 21, 2020**
Time: 1:00 – 5:30 PM
Place: The New York Academy of Sciences
7 World Trade Center
250 Greenwich St. – 40th Floor
New York, NY 10007
Cost: For full details on pricing, visit **www.nyas.org/ChemBio2020**. ACS members may use the Priority Code ACS to avail of NYAS member pricing.

Abstract Submission Deadline: April 2, 2020. Opportunities for Short Talks!

For more information and to register for the event, go to: **www.nyas.org/ChemBio2019**

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

NEW YORK NANOSCIENCE DISCUSSION GROUP

Hosted by the New York University Department of Chemistry

Speakers to be announced.

The NYNDG is an ACS Topical Group that meets in the New York University Department of Chemistry. Sessions feature three 30-minute presentations on nanoscience, one each with strong orientation in biology, chemistry, and physics/applied mathematics. Presentations will be focused on discussion of recent work, although speakers will place the work in a context understandable to a broad audience.

Date: **Next meeting: June 2, 2020**
Times: Refreshments at 7:00 PM
Science at 7:30 PM
Place: NYU Silver Center
Room 1003 (10th floor)
31 Washington Place
New York, NY

Topical Group Page

https://www.newyorkacs.org/grp_nanotech.php

WESTCHESTER CHEMICAL SOCIETY

On February 12, 2020 Dr. Weiqiang Chen, Ph.D. spoke on "Microengineered Biomaterials and Biosystems for Cancer and Immunoengineering." Dr. Chen is an Assistant Professor in the Departments of Biomedical, Mechanical and Aerospace Engineering at New York University, New York, NY. He received his B.S. in Physics from Nanjing University in 2005 and M.S. degrees from Shanghai Jiao Tong University in 2008 and Purdue University in 2009, both in Electrical Engineering. He earned his Ph.D. degree in Mechanical Engineering from the University of Michigan in 2014. He is the recipient of the Biomedical Engineering Society Young Innovator Award of Cellular and Molecular Bioengineering (2019), the Chroma Young Investigator Award in Biomedical Engineering (2019), the Lab on a Chip Emerging Investigator Award (2018), the National Institute of Biomedical Imaging and Bioengineering Trailblazer Award (2018), the NYU Whitehead Fellowship in Biomedical and Biological Sciences (2017), the Goddard Junior Faculty Award (2017), the American Heart Association Scientist Development Award (2016), the Baxter Young Investigator Award (2013). Dr. Chen's research interests focus on Lab-on-a-Chip, biomaterials, analytical chemistry, cell mechanobiology, stem cell biology, caner biology, and immune engineering

His talk dealt with the use of lab-on-a-chip systems. These take advantage of state-of-the-art micro/nanotechnologies, and use functional biomaterials and integrated analytical systems. They allow us to address important problems in fundamental biology as well as clinical applications in cancer diagnosis, treatment, and even personalized medicine. As examples, he discussed microfluidic lab-on-a-chip systems for capture and analysis of immune cells as well as rare circulating tumor cells for cancer diagnosis. He illustrated this with his microfluidics-based organotypic leukemia and glioblastoma brain tumor models to screen new cancer immunotherapies by reconstituting key cellular and immune interactions from in vivo microenvironments. Specifically, he showed cellular bone marrow and brain environments on a chip, including videos of CAR-T Cells attacking and destroying leukemia cells. CAR-T Cells are immune system T cells conjugated with Chimeric Antigen Receptors (i.e., receptors for antigens found on the surface of cancer cells). These allow the T cell to specifically attach to and destroy the corresponding cancer cell. There was discussion and questions both during and after the talk. Several members of the WCS board of directors (Dr. Peter Corfield, Dr. Paul Dillon, Mr. Jason Poland and Ms. Kay Whiten) attended Dr. Chen's talk, which was held at the Westchester Community College in Valhalla, NY. The photo below is of Dr. Chen and the WCS board members who attended the talk.

Kay Whien, Peter Corfield, Jason Poland, Weiqiang Chen and Paul Dillon.

(Photo courtesy of Paul Dillon)

LIACS 2020 SPRING SEMINAR PROGRAM

On the Thursday evening of February 6, 2020, the LIACS had the honor of having Dr. Qu Wang visit us and deliver the monthly LIACS seminar. Fifty-one LIACS members and affiliates enjoyed the enriching and enlightening evening as Dr. Wang shared many of the exciting findings of her research on Understanding Neuro-degeneration and Nanostructures using Synchrotron Views of Transition Elements done at Brookhaven National Lab. Dr. Wang was very engaging in her presentation as she answered questions from the participants about her research. Dr. Wang received a Ph.D. in Chemistry from the University of North Texas and is currently a faculty at Nassau Community College. She was also a research scientist at Brookhaven Lab and has published over seventy papers.

Our special thanks also go to the Queensborough Community College (QCC) Chemistry Department and the following Student Clubs for supporting the Seminar Program and for providing refreshments: STEM Academy, Chemistry Club, QCC Affiliates of the ACS, STEM Research Alliance, Student Health Club, Biology Club, STEM Research Club, and Environmental Sustainability Club. Several attendees went out to a Maria's restaurant and presented her with a Nobel Prize replication gold coin award plaque for the many years of hospitable service they provided to the LIACS chapter. The Nobel Prize replication gold coin was designed and printed by Dr. James Garofalo of the U.S. Merchant Marine Academy in Kings Point, NY.

The LIACS Spring Seminar featuring (above) Dr. Qi Wang, presenting and shown (below) with LIACS Chair John Sleckman.

(Photos courtesy of Paul Sideris)

ACS Chemistry for Life®

CHEMISTS CELEBRATE EARTH WEEK

Chemists Celebrate Earth Week (CCEW) 2020
"Protecting Our Planet Through Chemistry"
Illustrated Poem Contest

The New York City Local Section of the American Chemical Society (ACS) is sponsoring an illustrated poem contest for students in Kindergarten through 12th grade.

Contest Deadline Saturday, April 4, 2020

Prizes: 1st Prize in each category receives a $20 gift certificate

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

Contact: Elmer E. Mojica, Department of Chemistry and Physical Sciences, Pace University, One Place Plaza, New York, NY 10038 (Phone: 2123461344; Email: emojica@pace.edu)

Write and illustrate a poem using the CCEW theme, **"Protecting Our Planet Through Chemistry"** Your poem must be **no more** than 40 words and in the following styles to be considered:

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

Possible topics related to chemistry include:

Sustainability, recycling, conservation

Entries will be judged based upon:

Relevance to and incorporation of the CCEW theme, word choice and imagery, colorful artwork, adherence to poem style, originality and creativity and overall presentation

Contest Rules:

- All entries must be original works without aid from others.
- Poems maybe submitted by hand on an unlined sheet of paper not larger than 11" x 14" or scanned and sent via email.
- Illustrations may be created using crayons, watercolors, other types of paint, colored pencils, or markers. The illustration may also be electronically created by using a digital painting and drawing app on a computer, tablet or mobile device. The text of the poem should be easy to read and may be type before the hand-drawn or digital illustration is added or the poem may be written on lined paper, which is cut out and pasted onto the unlined paper with the illustration. No clipart or unoriginal images can be used.
- There will be 4 categories: Grades K-2, Grades 3-5, Grades 6-8 and Grades 9-12.
- Only one entry per student will be accepted. All entries must include an entry form. If the illustration is created using a digital painting or drawing app, the name of the program must be included on the entry form.
- All illustrated poems and/or digital representations of the poems become the property of the American Chemical Society.
- Acceptance of prizes constitutes consent to use winners' names, likenesses, and entries for editorial, advertising, and publicity purposes.

Visit MARM2020 EXPO

Sponsored by the New York Local Section of the American Chemical Society
The Graduate Center of the City University of New York | June 12, 2020

Advion advion.com	Advion's nearly three-decade dedicated to serving scientists yields customer-focused life science solutions. Our deep scientific, engineering, and customer workflow knowledge spawns an unrivaled solutions portfolio. We work directly with, train, and passionately advocate for our customers to ensure their success. Dedicated to Science – Dedicated to You. Visit advion.com.
Chem101 101edu.co	Chem101's active learning platform enables instructors to engage their students in the classroom with interactive problems, assign homework, and provide on-the-go practice activities. The platform's intuitive technology allows instructors to go beyond generic questions with chemistry-specific answer modules that make learning and teaching fun, effective, and exciting.
Columbia Chemical Engineering cheme.columbia.edu/master-science-program-0	Our Scientist to Engineer (S2E) Program is an intensive, accelerated program designed especially for new M.S. students without a B.S. in Chemical Engineering. This program covers the essentials of the entire undergraduate curriculum, followed by a standard M.S. program. Typically, this can all be accomplished in three semesters.
dotmatics www.dotmatics.com	Dotmatics delivers a platform to capture, register, share, query, visualize and analyse information generated in modern, collaborative scientific industries. Dotmatics scientific informatics include database management for chemistry, formulations, polymers and process data, ELN, chemical and polymer registration, high-throughput data management, reporting, visualization with enterprise solutions which are flexible, scalable and configurable.
heidolph Heidolphna.com	Heidolph North America's focus is providing unparalleled sales and support or premium lab equipment. Heidolph specializes in rotary evaporators, overhead stirrers and magnetic stirring hotplates.
nanalysis nanalysis.com	Nanalysis develops and manufactures affordable, accessible, and automatable NMR spectrometers. Our spectrometers are aimed at expanding the use of multinuclear NMR spectroscopy into qualitative and quantitative chemical applications where NMR has not historically been used. In 2019, Nanalysis introduced the 100 MHz product, the highest field available for benchtop NMR spectrometers.
TA www.tainstruments.com	TA Instruments provides innovative material characterization instruments that are widely used for research, analysis, and quality control in the evaluation of physical properties. We are the world's leading supplier of thermal analysis, rheology, and micro-calorimetry instruments.
University of Delaware Department of Chemistry & Biochemistry Chem.udel.edu	The University of Delaware is situated less than an hour from Philadelphia, PA, and is within easy driving distance of New York City and Washington, D.C. Our graduate program in Chemistry and Biochemistry combines a rich historic legacy with a strong commitment to education and innovation. Students at UD benefit from a highly supportive and collaborative environment that supports a wide array of cutting-edge Core Facilities, and dynamic initiatives focused on driving advancements across all areas of chemistry, biochemistry and related fields.
Penn Master of Chemical Sciences www.sas.upenn.edu/lps/graduate/mcs	The University of Pennsylvania's Master of Chemical Sciences prepares you for diverse career and academic possibilities in the chemistry fields. We feature PhD-level courses, individualized advising, six chemistry concentrations, and Ivy League facilities and resources. Complete your research with local and national industry partners or at Penn's stellar facilities.
Society of Cosmetic Chemists Scconline.org	**Our mission: To advance cosmetic science** The Society strives to increase and disseminate scientific information through meetings and publications. By promoting research in cosmetic science and industry, and by setting high ethical, professional and education standards, we improve the qualifications and caliber of cosmetic sciences.
St. John's University www.stjohns.edu/academics/programs/chemistry-master-science	St. John's University welcomes students to learn more about how to apply for our Masters in Science (M.S.) program in chemistry and discuss how our program can help the student meet their career goals.
Vernier www.vernier.com	For 39 years, Vernier Software & Technology has been the leader in scientific data-collection technology. Education worldwide use Vernier Sensors, instrumentation, including a benchtop gas chromatograph and spectrophotometers, software, and experiments to teach and engage students in chemistry investigation.

MARM 20/20
NY ACS CUNY
CHEMISTRY IN FOCUS
www.marm2020.org

48TH MIDDLE ATLANTIC REGIONAL MEETING

CHEMISTRY IN FOCUS

EXHIBITION OPPORTUNITIES

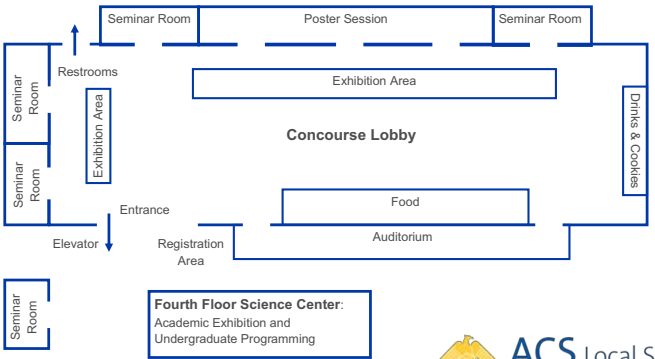
THE GRADUATE CENTER OF THE CITY UNIVERSITY OF NEW YORK | JUNE 12, 2020

Exhibitor Categories and Fees*

	MARM Returning Exhibitor	Early	Regular	Included
Commercial	$270	$320	$375	Power: first come-first serve basis. Five foot rectangular table, two chairs, two meeting registrations, access to the meeting attendee contact information, corporate logo displayed on website and in program.
Academic **	$210	$235	$275	Five foot rectangular table, two chairs, two meeting registrations, access to the meeting attendee contact information, institute logo displayed on website and in program.

***MARM Returning Exhibitor & Early Bird rates by *March 1, 2020*; full payment by *April 15, 2020* to ensure full benefits.**
****Academic Exhibition will be held near the undergraduate programming, Fourth Floor Science Center.**

Exhibition Hours: 11:30 a.m.—1:00 p.m. (Lunch); 4:00– p.m.—5:00 p.m. (Poster Session)
Exhibit Set-up begins at 9:30 a.m. and **Exhibit Removal** by 6:00 p.m.



ACS Local Section New York

Contact Information:
expo@marm2020.org

American Chemical Society's New York Section, Inc. | http://newyorkacs.org

MARM 20/20
NY ACS CUNY
CHEMISTRY IN FOCUS
www.marm2020.org

Join Us at MARM2020 Exhibition

Sponsored by the New York Local Section of the American Chemical Society
The Graduate Center of the City University of New York | June 12, 2020

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ACS Local Section New York

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Martha Hollomon
MarthaHollomon@comcast.net

ACS Meeting Planning Partner
Kimberly Savage
K_Savage@acs.org

March 8, 2020

Dear MAMR 2020 Exhibitors and Sponsors:

The New York Section of the American Chemical Society (NYACS) is proud to present the 48th Middle Atlantic Regional Meeting (MARM 2020) on **Friday, June 12, 2020**. It will be held at **the Graduate Center of City University of New York**, located in the center of Manhattan at 365 5th Avenue, across from the Empire State Building, and two blocks east of Penn Station.

We would like to thank those organizations that have completed their applications and will join us as the MARM 2020 Exhibitors in June.

At this point, we have sold out all the Academic Exhibit Booths.

We currently, however, are looking for Sponsors who will help sponsor a MARM2020 event. These events include but are not limited to symposia, workshops, luncheons, coffee breaks, and raffles. Your generous financial sponsorship will enable a great success of MARM2020. As shown in the table below, we offer various levels of sponsorship with associated benefits. ***We hope you will become a Sponsor, especially prior to May 1, 2020 to ensure full benefits, by visiting https://www.marm2020.org/exposition and paying online using 1) Paypal or 2) credit card via the "Paypal" link.*** *Please indicate the "donation purpose" is for "MAMR2020" and specify the event you choose to sponsor. Please notify us afterwards by emailing to expo@marm2020.org.*

ACS MARM2020 Sponsorship Levels and Benefits
(Note: Please pay by May 1, 2020 to ensure full benefits)

Sponsorship Level	Fee	Benefits
Platinum	$1,000	Event Placard & Website Logo/link
Gold	$500	Event Placard & Website Logo/link
Silver	$250	Event Placard & Website Logo/link
Bronze	$100	Event Placard & Website Logo/link

Please feel free to contact us if you have any questions. We look forward to your sponsorship and seeing all our MARM 2020 Exhibitors and Sponsors in June!

Sincerely,

Dr. Ping Furlan
Professor of Chemistry
U. S. Merchant Marine Academy
Kings Point, NY 11024
516 726-5783
furlanp@usmma.edu

Dr. Yosra Badiei
Assistant Professor of Chemistry
Saint Peter's University
Jersey City, NJ 07306
201 761-6442
ybadiei@saintpeters.edu

Deadline for items to be included in the May 2020 issue of *The Indicator* is

March 28, 2020

North Jersey Meetings

http://www.njacs.org

NORTH JERSEY EXECUTIVE COMMITTEE MEETING

Section officers, councilors, committee chairs, topical group chairs, and section event organizers meet regularly at the Executive Committee Meeting to discuss topics of importance to running the section and representing the membership.

All ACS members are welcome to attend this meeting and to become more involved in section activities.

Date: Monday, April 20, 2020
Time: 6:30 - 8:30 PM
Place: Seton Hall University
Jubilee Hall, Room 132
400 South Orange Avenue
South Orange, NJ 07079

To connect to the meeting remotely, please contact Cecilia Marzabadi at **cecilia.marzabadi@gmail.com** for information.

CHEMISTS CELEBRATE EARTH DAY

Date: Tuesday, April 21, 2020

(See flyer on page 21)

NoJ MASS SPECTROMETRY DISCUSSION GROUP

Special Event Meeting: "Celebrating Some of the Rich History and Community in Mass Spectrometry"

Next Meeting: Tuesday, May 12, 2020

The NJMSDG is very pleased and excited this year to host a Special Event Meeting that highlights, as well as celebrates, some of the major events in the history of mass spectrometry. The event title will likely be shortened to simply 'History Night' as we welcome Dr. P. Jane Gale, the current ASMS Archivist/Historian, who will present 'Decade by Decade: An Historical Review of Mass Spectrometry and ASMS in the Second Half of the 20th Century'. As Dr. Gale has often observed , "Community has been such an important part of our profession," and our community is excited to have her return to NJ to share how ASMS is preserving and presenting the researchers, the instrumentation developments, and the scientific communities that have provided such a powerful analytical tool for our complex applications and most difficult research problems. We look forward to learning how ASMS captures and presents this rich story as Dr. Gale describes four broad topics covered by the ASMS history poster collection: 1) the History of ASMS, 2) Member Interactions and Giants in Mass Spectrometry, 3) the History of the Science of Mass Spectrometry and 4) the History of Commercialization and explores the evolution of the science and the Society over the last 70 years through a more in-depth look at the ASMS Anniversary posters.

As a little taste of our very own history, it should be noted that Dr. Gale was a member of NJMSDG during the time she lived in New Jersey. When she, joined in 1980, 40-50 attendees gathered each month at one of several locations, ranging in New Jersey geography from Princeton to Florham Park. With fellow NJMSDG member Dave Kemp, Dr. Gale co-chaired the group from 1981-1984 after the two tied in the election for the discussion group's next leader.

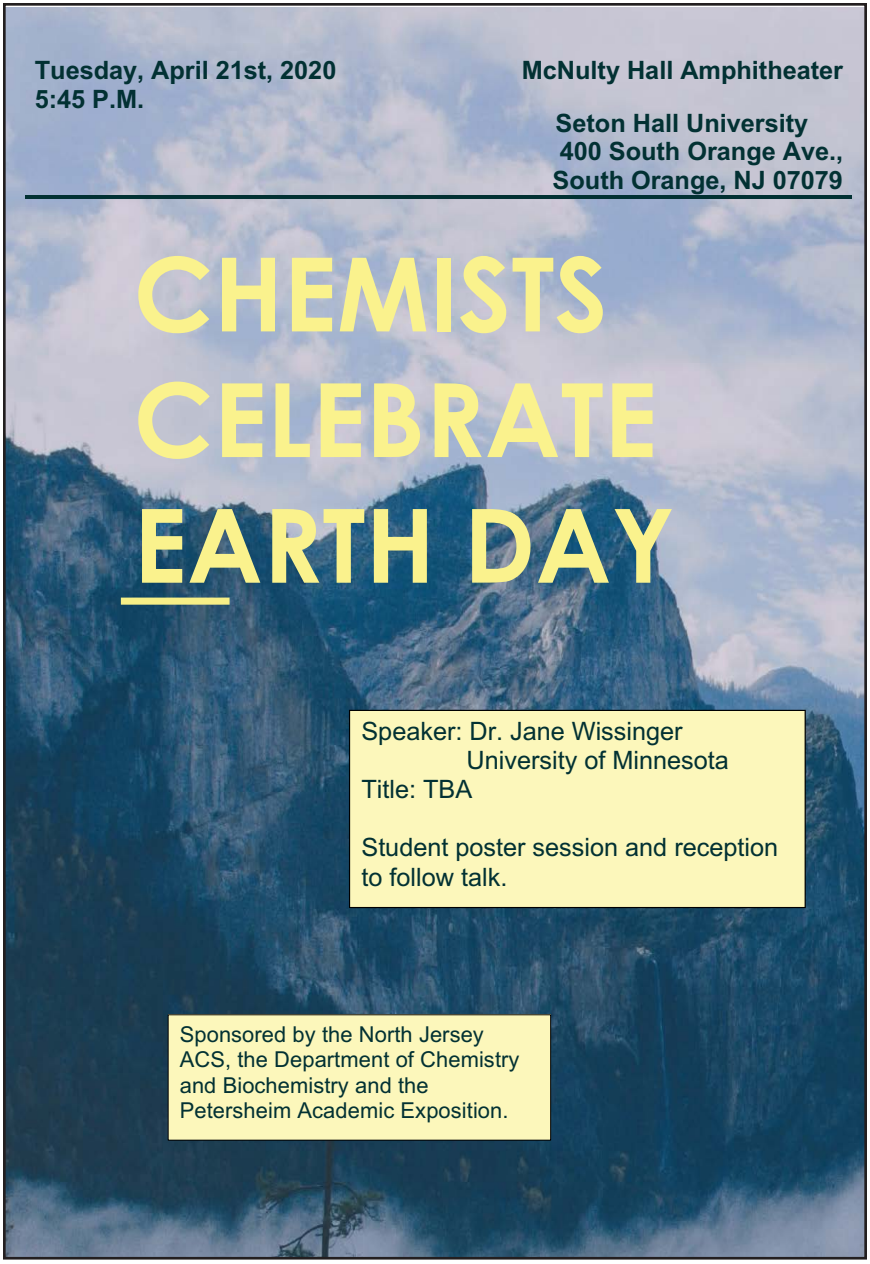
Dr. Gale spent her career working in the field of mass spectrometry, first at RCA Laboratories in the Materials Characterization group and later at Bristol-Myers Squibb, where she oversaw the development of quantitative bioanalytical assays to support clinical trials. She subsequently served as chief operating officer at Virgin Instruments (now Simultof) and later as Director of Educational Services at Waters Corporation.

On May 12, as we enjoy a time of fellowship and looking back over the historical development of mass spectrometers, we will also announce the winner of our contest for the submission of the 'oldest working mass spectrometer'. Pictures and provenances can be sent to **ghall@chem.rutgers.edu** up to May 8th.

Kathleen Anderson
NJMSDG Director of Communications

Date: Tuesday, May 12, 2020
Times: 5:30-7:00 PM - Social and dinner
7:00 PM - Presentations start
Place: Somerville Elks Lodge
375 Union Avenue
Bridgewater NJ.

Future Dates:
Tuesdays, June 9, September 15 (Symposium/Vendor Show), October 13, December 8, 2020 (2nd Tuesday each month)
Times and Place: As above.



NoJ DRUG METABOLISM DISCUSSION GROUP

2020 Fall Symposium and Vendor Exhibition — "Novel Drug Delivery Approaches"

Date: Thursday, September 10, 2020 (Postponed from April 30 due to Coronavirus)

NORTH JERSEY NMR TOPICAL GROUP

The NMR Topical Group held its February monthly seminar at Rutgers University in the Department of Chemistry and Chemical Biology. The meeting was started by Dr. Allen N. Jones, ISAAC Program Director, sharing with the audience the impact of Students 2 Science program on the middle and high school students, as well as different ways of participation in the volunteering activities. The main talk was given by Dr. Abby R. O'Connor, Associate Professor, Department of Chemistry, The College of New Jersey and illustrated her recent work on the evaluation of sulfonamide containing ligand scaffolds in catalytic base-free transfer hydrogenation. In her talk, Dr. O'Connor highlighted the impact of structural rigidity modifications in linkers, between the sulfonamide and pyridine moieties, on the ligand catalytic activity. Moreover, she introduced preliminary mechanistic and kinetic findings explaining as to why these systems operate under base-free conditions.

Image 1: Snapshot of Dr. Abby R. O'Connor presentation.
(Photo courtesy of J. Sikorska)

Image 2: Snapshot of Dr. Allen N. Jones presentation.
(Photo courtesy of J. Sikorska)

NORTH JERSEY WOMEN'S CHEMIST COMMITTEE — JOINT SESSION WITH EAS

Eastern Analytical Symposium and Exhibition
Princeton, NJ Nov 18-20, 2019

EAS Session: The Evolving Roles of Women in Science

Date: Wednesday, November 20, 2019
Venue: Crowne Plaza Princeton-900 Scudders Mill Road, Plainsboro, NJ
Register: easinc.org

Sponsors: North Jersey Women's Chemist Committee in conjunction with the North Jersey American Chemical Society

ACS Committee Women Chemists

North Jersey Section American Chemical Society

Breakfast: 7:30am - 8:00am

Session: 8:30 am - 11:30am

Keynote: From Lab to Leadership: The Journey of an Analytical Chemist	Caroline McGregor, PhD	
Our Past and Bright Future	Susan Olesik, PhD	
An Industrial Chemist's Career: Expectations, Experiences, Opportunities and Surprises	Mary Ellen McNally, Ph.D	
Intrinsic Values: A Career Odyssey	Susan Baker, PhD	
Career Adventures: Aha Moments and the Joy of Navigating Two-way Streets	Adrienne Tymiak, PhD	

(continued on page 24)

NORTH JERSEY WOMEN'S CHEMIST COMMITTEE — JOINT SESSION WITH EAS

(continued from page 23)

North Jersey Women's Chemist Committee (NJACS) and the Eastern Analytical Society (EAS) bonded together and hosted a four hour breakfast and lecture session on The Evolving Roles of Women in Science at the Eastern Analytical Symposium on November 19, 2019.

This event showcased five very accomplished women in science representing disciplines from neuroscience to analytical chemistry and academic and industrial backgrounds. The diverse group represented women at various stages of their careers and gave attendees a chance to gain perspective from women relatively early in their careers to those after retirement.

Each scientist shared her personal experiences and the unexpected quantum leaps, and how she reacted enabling her to regain her work/life balance and adjust to a new equilibrium. Each presentation showed the audience why each speaker is considered an advocate for women in the chemical sciences left attendees with a positive message and offered mentorship to those who expressed need and interest after the session.

From Lab to Leadership: The Journey of an Analytical Chemist

Keynote Speaker: Caroline McGregor, PhD

We are all shaped by our decisions and molded by our environment. In her talk, Caroline shared her own career journey as an analytical chemist, discussing how self-awareness, authenticity, and a willingness to take different roles and make some tough choices along the way have allowed her to move from the lab to leadership, and to learn, to grow, and experience every day why she chose chemistry: to deliver science that helps people.

She shared her personal struggles overcoming the negative perceptions and challenges she faced as an introvert and how she over them and found a way to "be heard". She also shared ways in which we all could communicate better with each other create more positive or effective interactions.

Caroline McGregor is Vice President, Analytical Research & Development at Merck. She has been a scientist and leader at Merck Research Laboratories for 18 years, first as an Analytical Development and Preformulation Scientist in the United Kingdom before relocating to the United States.

Career Adventures: Aha Moments and the Joy of Navigating Two-Way Streets

Speaker; Adrienne Tymiak
Science and Technology Advisor
Retired BioPharma R&D Executive from Bristol-Myers Squibb

Adrienne Tymiak is the former Executive Director of the Bioanalytical and Discovery Analytical Sciences department at Bristol-Myers Squibb. With degrees in Biochemistry, Chemical Oceanography and Organic Chemistry, she began her career as a natural products chemist in drug discovery. Today, Adrienne serves as a technology advisor for industry and academia, as a board member for nonprofit organizations serving youth (HiTOPS and Collective Success Network), and as a mentor for early career scientists and future leaders.

As a first-generation scientist, Adrienne had little in the way of role models. As a result, her career in the pharmaceutical industry took twists and turns and benefited from some luck along the way. She shared that throughout her career journey, she followed her interests, practiced the discipline of continuous learning and used her unique talents to make a difference.

In her case, the skills she developed while cooking, playing volleyball and beachcombing also applied in the professional setting and boosted her problem solving and logistical, technical and people skills. She shared that as her career unfolded, she continued to reflect on her circumstances and redirected her career based on personal insights and aha moments.

Once she became the leader of a multi-site research team, she could see that every scientist

offered unique superpowers. She also saw that diverse teams that worked together with open communications, coordination of efforts and cooperation were more innovative and efficient and had more fun in the process! Now, as an adviser for industry and academia and as a mentor for next generation leaders, She appreciates that each professional interaction is a "two-way street" where a scientist can both give and receive insights regardless of their career stage. Her talk drew upon her personal experiences and observations to reflect on the evolving role of women in science and the joy and potential rewards of actively navigating "two-way streets" throughout one's career.

Our Past and Our Bright Future

Speaker: Susan Olesik
The Ohio State University, Department of Chemistry and Biochemistry

The proportion of women in Analytical Chemistry continues to increase in industry and academia. Susan's talk included data highlighting changes that have occurred in number of women analytical chemists. She shared that while the numbers of women analytical chemists have increased, the progress has been slow but nonetheless progress continues. As we look back, on how progress has occurred to facilitate the increasing numbers of women analytical chemistry, it becomes clear that Analytical Chemistry has its own "hidden figures" who made substantial discoveries to move our science forward. In addition, many of these women provided mentoring and career assistance that assisted others in joining the field and advancing into leadership positions. Taking note of the impact of these individuals, next the unique science of a few of our current leading female analytical chemists are described with illustrations of their accomplishments in the lab as well as their impact in assisting the next generation of women chemists. Finally, to the complete the presentation, she shared examples of significant science that current analytical chemists need to address to define a bright future to next generation.

Dr. Olesik received her A.S. from Vincennes University B.A. from DePauw University and her Ph.D. from the University of Wisconsin-Madison, under the auspices of James W. Taylor in field of analytical mass spectrometry. After that she became a faculty member at The Ohio State University. She is currently the Dow Professor and Chair of the Department of Chemistry and Biochemistry. She continues as the Director of the Ohio House of Science and Engineering (OHSE), a K-16 science outreach center.

An Industrial Chemist's Career: Expectations, Experiences, Opportunities and Surprises

Speaker: Mary Ellen McNally
FMC Agricultural Solutions, Stine Research Center

Mary Ellen's talk shared that being a woman in science is no longer a rare occurrence but there are still times when you will find yourself as the only woman in the room. In her presentation, she shared her career experiences in long term technical and managerial roles, career choices and opportunities via a career roadmap.

She discussed her career road maps explaining the detours, as well as via personal experiences how to make opportunities that might not be at first glance the best fit, into roles you desire.

The audience take away was that although expectations are sometimes overturned because of circumstances, the unplanned alternate experiences can be more rewarding and rewarded. Discussions on planning your day to account for all your interactions, scheduled and unscheduled and how to make the most from both are included. This is an overview of decisions to be made that will help you focus the direction of your career as a woman scientist.

Dr. McNally is a Global R&D Fellow at the Stine Research Center for FMC Corporation. Mary Ellen was employed by DuPont for 33 years before joining FMC. McNally has led teams on New Emerging Technologies and a team of inter-disciplinary scientists from three universities and DuPont on a NSF GOALI project. Dr. McNally was named to the Analytical Scientist Power List, as one of the Top 50 most influential women in the analytical sciences.

(continued on page 24)

NORTH JERSEY WOMEN'S CHEMIST COMMITTEE — JOINT SESSION WITH EAS

(continued from page 25)

Intrinsic Values: A Career Odyssey

Speaker: Susan Baker
Janssen R&D

Susan had a more analytical approach and shared that when most of us choose a field and begin our education, we have the intention to pursue a career in our direct area of study. Many of us, including myself, ultimately land in a vocation that is quite different from where we started or even far outside our training. In retrospect, careers are often shaped more significantly by our intrinsic values than our training. Synergy may or not exist between the two. Our intrinsic values interact with evolving extrinsic political, social, and corporate cultures at key points in our career development. The outcomes are often additionally shaped by traditional privilege and bias categories such as age, gender, and race. Bias categories are subject to, in principle, laws and policies which also evolve. Culture and privilege have historically made it difficult for women and other demographic groups to succeed in science, technology, engineering and math (STEM) fields. While the environment is changing, difficulties still exist. From conversations with others, self-education, and her own experiences, she shared insights she has learned along the way.

Dr. Susan Baker is currently a Director at Janssen R&D with over 25 years' experience in scientific research and management predominantly in the Pharmaceutical sector.

INVITATION TO JOIN THE NORTH JERSEY WOMEN CHEMISTS' COMMITTEE

The next proposed event is at the MARM on June 12th. We have a 90 minute slot to do with as we will.

Theme: "Continuing with the Evolving Roles of Women in Science"

Proposals:

1. 1-2 lectures (20-30) minutes, then networking
2. Speaker blitz (7-8 presenters), 3 slides each then networking session
3. Panel discussion 3-5 panelists then networking session
4. Open to other possibilities

Potential Events will be as follows and I will be sending out a survey to see which events are the favorites.

Wine — A Sensory Adventure

Chocolate — Chemistry Can Be Addictive

Beer — What's Hopp-ening?

Pottery — The Chemistry of Glaze

Gastronomy or Food Event?

National Chemistry Week

Chem Expo
Make your own make-up/candle/soap

What's That Smell? Science of Fragrance? Help you pick your signature scent

1 **WINE: A SENSORY ADVENTURE — WCC REACTIVATION EVENT.**
Was done in 2018 and very well received.
   a. This event will feature Kelly Jones the founder of Kelly&Jones where she will share her inspirational story and her curated fragrance wine creations and pair them with wine. Kelly has been featured in Food and Wine magazine and on the Food Network. Her unique perspective on wine takes away the stuffiness for wine beginners while taking the game up a notch for the experienced wine connoisseur.
   b. $35-45 includes wine, light food, dessert and gift.

2. **Chocolate Event:** webinars available
3. **Joint event with YCC** for mentorship
4. **Pottery Event: www.AmyLeepottery.com** —The Chemistry of Pottery and Glazing, Amy Lee Pottery
5. **Brewery Event:** more webinars
6. **Cooking Class?**
7. **Chem Expo Event**

Lauren Castelli
ACS North Jersey Women Chemist Committee Chair
formulatornova@yahoo.com
908-892-9893

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 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.

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 Chair of the Committee, Dr. Neil Jespersen, at **jespersn@stjohns.edu**.

Please reach out to your members to consider sending recommendations for this award. All nominations must be submitted by the Division or Committee, after approval from the respective Chair.

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**.

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 (516) 883-7510 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!

NICHOLS SYMPOSIUM RESCHEDULED

Dear NY ACS Section Member:

We are sorry to inform you that due to the outbreak of the Coronavirus in the New York area, the Executive Committee of the ACS New York Section feels it is in everyone's best interest to postpone the Nichols Symposium and Dinner on March 27th until Friday, October 23. Right now this date works with the hotel, the speakers and Dr. Matyjaszewski. If for some reason we need to change this date again, another announcement with those details will be sent.

We apologize for any inconvenience this may cause you. We hope you find that the new date works with your schedule. If you have already registered for this event and cannot attend, you will receive a full refund. We appreciate your patience as we work through this.

Wishing you best of health.
Dr. Ruben Savizky
2020 Chair ACS-NY

Deadline for items to be included in the May 2020 issue of *The Indicator* is

March 28, 2020