

Dr. Rita K. Upmacis 2021 New York Section Chair



See article on page 5.

THIS MONTH IN CHEMICAL HISTORY

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

In my continuing examination of Great Books in Chemistry I come now to the 17th. Century and to that remarkable work by the Honorable Robert Boyle, “The Sceptical Chymist”. The first English Edition appeared in 1661 and there were many subsequent editions in both English and Latin. My own modest copy is one of Dent and Dutton’s Everyman’s Library and was Edited and with a Foreword by M.M. Pattison Muir, a distinguished historian of chemistry, whose book “A History of Chemical Theories and Laws”, published in 1907, is still excellent reading.

Boyle was one of the greatest natural philosophers of the 17th. Century. His study of gases (airs) is recalled in Boyle’s Law. He worked on acids, bases, and indicators; published the first clear description of the preparation of elemental phosphorus (“the icy noctiluca!”); was a close friend of Isaac Newton; and, like Newton, was an alchemist.

The Sceptical Chymist is not an easy read. It is written in the then popular form of a dialog between Themistius, a follower of the ancient beliefs of the hermetick philosophers (alchemists) and Carneades, a thinly disguised Boyle. The hermeticks believed in the four elements (earth, air, fire, and water) as the bases of all material things. Carneades challenges these ideas, insisting on experiments, verified facts, and reasoned beliefs – all notions going back to views expressed nearly a century earlier in Francis Bacon’s “Novum Organon”, a work that enunciates clearly, and perhaps for the first time, what we now call the scientific method.

In attacking the ancients’ views of elements Boyle writes “I mean by elements, as those Chymists that speak plainest do by their principles, certain primitive and simple, or perfectly unmingled bodies; which not being made of any other bodies, or of one another, are the ingredients of which all those called perfectly mixt bodies are immediately compounded, and into which they are ultimately resolved; now whether there be any one such body to be met with in all, and each, of those that are said to be elemented bodies, is the thing I now question.”

Boyle failed to resolve the experimental question as to whether a particular substance was an element. Indeed he argued that not a single unambiguous example of an element was known to him. This book is more of an exercise in destruction than construction. Boyle argues powerfully against the four elements of the hermeticks. And he provided a definition of a true element that has a modern and convincing sound. But it took another century before Lavoisier, in another book that I plan to discuss later in this series, provided the true quantitative test of whether a substance was indeed an element.

I conclude with a quotation from Pattison Muir: “The great importance of the Sceptical Chymist consists in Boyle’s reiteration of proofs that nature is not simple, but rather overpoweringly complex; of proofs that it is wise to doubt every short and easy road to natural truths;....that above all “occult qualities” are nothing but “the sanctuary of ignorance.” Words to live by.

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EDITORIAL DEADLINES

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

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Address advertising correspondence to Advertising Manager. Other correspondence to the Editor.

December Calendar

NEW YORK SECTION

Thursday, December 3, 2020
Westchester Chemical Society
See pages 8-10.

Thursday, December 3, 2020
Long Island Subsection
Holiday Seminar
See page 10.

Wednesday, December 9, 2020
ChemLuminary Awards
See pages 12-15.

Thursday, December 10, 2020
NY/NJ Society for Applied Spectroscopy
See page 18.

also

Date TBD, January XX, 2021
New York Section's 2021 Sectionwide
Conference
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Thursday, February 4, 2021
Long Island Subsection
Holiday Seminar
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NORTH JERSEY SECTION

Wednesday, December 9, 2020
ChemLuminary Awards
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**Deadline for items to
be included in the
JANUARY 2021 issue
of *The Indicator* is
NOVEMBER 28, 2020**

***The Indicator* is
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of the previous
month at
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2021 New York Section Chair's Message

Dear Members,

I am delighted and honored to be serving as the 2021 Chair of the New York section of the American Chemical Society, and I am highly indebted to the support of our members. I would sincerely like to thank all of the volunteers for their continued service in promoting the professional development of our members, increasing the scientific literacy in our surrounding communities, and in developing the next generation of experts in chemistry.

With the emergence of the COVID-19 pandemic, we have experienced drastic transitions and times of hardship. Although it is uncertain as to when it might be possible to resume our in-person events, it is certain that now, more than ever, it is important to engage a future generation of diverse and all-inclusive chemists in solving many challenges: in medicine, in the development of new sustainable resources, and in tackling the problems of climate change, clean water and pollution. It also seems certain that "zooming" is here to stay, which should make attendance at our upcoming NY ACS events so much easier for all!

Some of the premier events by the New York section for 2021 include:

- The Sectionwide Conference (January, 2021, date to be announced), which will be a virtual event. There will be a keynote presentation by Dr. Mark E. Thompson (University of Southern California) entitled "21st Century Alchemy: making Coinage Metals Act Like Ir and Pt." At this event, we will be honoring our NY ACS Outstanding Service awardee, Dr. Ping Furlan (U. S. Merchant Marine Academy).
- The William H. Nichols Distinguished Symposium honoring the 2020 medalist, Dr. Krzysztof Matyjaszewski (Carnegie Mellon University), which was canceled in 2020 due to the pandemic, is scheduled to take place on April 16th, 2021. The theme is "Nanostructured Polymers by Macromolecular Engineering using ATRP (Atom Transfer Radical Polymerization)." This celebration will be virtual and free, with the intention that we will be able to reach a more expansive and diverse audience who may not have been able to attend the in-person event.

In addition, the NY ACS will continue to find creative ways to offer a wide variety of immersive events, while accommodating COVID-19 advisories, that are sponsored by the various Topical Groups, Subsections and Committees, such as Chemists Celebrate Earth Day, the Undergraduate Research Symposium, and National Chemistry Week. Please also look out for some new Diversity, Inclusion, and Respect events that will include a screening of the movie "Picture a Scientist".

I encourage our members to stay in touch with the New York chapter of the ACS in various ways, such as:

- Visiting our website, www.newyorkacs.org
- Adding the New York section to your Facebook account to receive updates and multimedia presentations of past events
- Reading The Indicator
- Attending a meeting of a Topical Group, Subsection, or Committee, or reviewing their activities in our annual reports to see if you may be interested in what they do or if you can offer a new perspective. There are some relatively new topical groups, such as Microwaves in Chemistry and Computers in Chemistry.

The NY ACS remains a site of support for your scientific endeavors. Please think about some ways that the New York section can better serve you. Let us know if you see a need, or even better, if you are willing to work on addressing that need!

I would like to thank Ruben Savitzky for his leadership as the 2020 Chair of NY ACS. I particularly enjoyed the "Distance Learning – Challenges and Opportunities" virtual meetings that were offered this past summer that focused on different approaches to teaching labs given the ongoing pandemic. Indeed, I was impressed that during this time of uncertainty and fear, that the NY ACS responded in such a timely and creative manner. I would also like to welcome our new 2021 Chair-Elect, Kathleen Kristian.

I look forward to interacting with you within this wonderful and vibrant section, and to facilitating and advancing the important work of our enthusiastic, dedicated and hard-working members. Please feel free to contact me (rupmacis@pace.edu) with any thoughts, ideas or suggestions for the Section, or if you are looking for service opportunities.

Sincerely,

Rita K. Upmacis, 2021 Chair of the New York Section

North Jersey Meetings

There is no Executive Meeting scheduled to be held in the North Jersey Section during the month of December 2020.

The next meeting will be in January 2021.



NORTH JERSEY RECEIVES NOMINATIONS FOR CHEM LUMINARY AWARD

To acknowledge and celebrate its volunteers, ACS honors outstanding Local Sections, Technical Divisions, International Chapters and Regional Meetings by awarding outstanding events and activities with ChemLuminary Awards. The North Jersey Local Section is a finalist for four ChemLuminary Awards for events in the following categories

Outstanding Local Section Industry Event- Technology & Innovation in Organic Chemistry Symposium hosted by the Organic Topical Group

Outstanding Performance by a Local Section (Very Large Size) - North Jersey Section

Outstanding High School Student Program Award - High School and Middle School teacher and student overall program activities.

Outstanding Local Section YCC - Resume workshop and Membership Drive hosted by the Young Chemists Committee

Presented annually at the fall national meet-



CHEMISTRY OLYMPIAD

North Jersey will participate in the 2021 ACS International Chemistry Olympiad. Students may sit for the local section qualifying test during the month of **March 2021** through their schools or individually if the school is not participating.

Registration is open through January 15, 2021.

For further information contact Dr. Jiwen Chen, North Jersey ACS Olympiad coordinator at nj.chemistryolympiad@gmail.com



NORTH JERSEY SECTION 2021 ELECTION RESULTS

Congratulations to the new officers, councilors and alternate councilors of the North Jersey Section ACS

Chair-elect (2021)

Qi Gao

Secretary (2021-2023)

Elizabeth (Bettyann) Howson

Councilors (2021-2023)

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Alternate Councilors (2021-2023)

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New York Meetings

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NOMINATING COMMITTEE FOR THE 2021 ELECTIONS MEETS IN NOVEMBER

The Nominating Committee of the New York Section will meet in November to select candidates for the 2021 elections.

Positions available are:

Chair-elect for 2022

Treasurer for 2022-23

Directors-at-Large for 2022

Councilors and Alternate Councilors for 2022 – 2024

If a member of the New York Section wishes to run for office or to suggest a member for consideration by the Nominating Committee, please send an e-mail to the New York Section office at btaylor@newyorkacs.org by **November 30**.



WESTCHESTER CHEMICAL SOCIETY

Because of Covid-19 pandemic restrictions, fall meetings will not be held at our usual location at the Westchester Community College. The meetings will be held remotely (via Zoom). Zoom must be downloaded to your computer, but it is free.

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.

Special Seminar – “Clinical Tests and COVID-19”

Speaker: Paul Dillon, Ph.D.
Co-Chair and Program Director,
Westchester Chemical Society.

Patient Advisor,
Interstitial Lung Disease
Collaborative (ILDC).

Abstract:

This talk is an update of an invited talk, given via Zoom, to the Boston and Cape Cod support groups of the ILDC. Because of the pandemic there is great interest in tests related

to the SARS-CoV-2 virus (the cause of the COVID-19 disease). This talk discusses the availability of COVID-19 tests. Considering the short time-frame, tests have been developed quite well and quickly. There are brief reviews of clinical testing in general, and of the SARS-CoV-2 virus structure. I discuss the types of clinical tests (diagnostic for viral RNA and/or antigens) and serological (for antibodies to the virus) and the difference between qualitative tests (those concerned with COVID-19) and quantitative tests. I address questions of sensitivity, specificity, prevalence and predictive values. I and several of my colleagues in clinical diagnostics have been concerned about false positive serological results; fortunately our fears were unfounded. However, we must still be cautious in handling positive antibody tests on individuals who have been asymptomatic and never tested positive for the virus. Unless we know that the local population has a reasonably high prevalence, such positive tests can be misleading. I have developed models for positive predictive value vs. prevalence and for estimating prevalence. I discuss recent CDC guidelines including the use of pairs of serological tests, and of neutralizing antibody tests (i.e., for antibodies that can be shown to kill the virus or impede its propagation). Finally, I note some prognostic (severity) tests, just becoming available, for patients newly diagnosed with COVID-19.

Biography:



Paul Dillon is a chemist turned biostatistician. He received his B.S. from The Polytechnic Institute of Brooklyn (now NYU's Tandon School of Engineering) in 1966, his M.S. and Ph.D. from New York University's Graduate School of Arts and Science in 1969, and 1974, respectively (all degrees in Chemistry). He was a chemist for Union Carbide Corp., Tarrytown, NY from 1965-1970 working on paint latexes and took a leave to do his dissertation research from 1970-1973. Although technically in Chemistry, his research dealt with creating an optimization program to estimate molecular geometries by minimizing quantum calculated energies as functions of bond distances and angles. Back at Union Carbide in 1973 he worked on urethane foam flammability, modeling the evaporation of aqueous solutions of organic solvents and internally consulting in engineering statistics. In 1997,

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WESTCHESTER CHEMICAL SOCIETY

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he received the first prize in the Roon Awards administered by the Federation of Societies for Coatings Technology for his development of the concept of critical relative humidity.

In 1986, he joined Technicon Instruments Corp., also in Tarrytown, NY, as a biostatistician. There, and for successor companies (Miles Laboratories, Bayer Diagnostics, Siemens Diagnostics, and Siemens Healthineers), he worked on protocol development, data analysis and generated reports for internal and external (clinical trials) evaluation studies for new or improved automated diagnostic instruments and reagents. He has worked on a range of diagnostics including, classic clinical chemistries, and immunodiagnostics. Retiring in 2012 he consulted until 2018. He has also been active in the Westchester subsection of the NY Section of the American Chemical Society, serving as its Program Director since 2009 and its co-chair since 2015. He has also served on the board of the NY section of the ACS (2016-2018), and on the Advisory Board of the Center for Sustainable Energy at Bronx Community College (2014-2015), and the Industrial Advisory Board of the Polytechnic Institute of New York University, Department of Chemical and Biomolecular Engineering (2012-2013). He and recently became a Patient Advisor at the Interstitial Lung Disease Collaborative (2020).

Date: Tuesday, November 17, 2020

Time: 7:00 PM (Zoom link available from 6:45 PM Eastern Time (US and Canada))

Place: Zoom

Cost: Free and open to the public

Dr. Rolande Hodel, Co-Chair of the Westchester Chemical Society is inviting you to a scheduled Zoom meeting.

Join the Zoom Meeting

<https://sunywcc-edu.zoom.us/j/87192908761?pwd=VGdINFE0bFhoZWZh2dEs5UUtJOUVLUt09>

Meeting ID: 871 9290 8761

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Find your local number: <https://sunywcc-edu.zoom.us/u/kdYfjALkRf>

For further information:

contact 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



WESTCHESTER CHEMICAL SOCIETY

Special Seminar – “The Science of Making Colleges and Universities Safe in the Age of Covid-19 – A Case Study”

Speakers: Matthew R. Basso, CHMM, IHIT Senior Consultant

George Hollerbach, PE, BCEE Senior Principal
Geosyntec Consultants, Inc.
Lyndhurst, NJ

Abstract:

As the COVID-19 pandemic challenged the US economy in early 2020, Geosyntec’s molecular diagnostic laboratory (SiREM) mobilized to develop accurate and reliable SARS-CoV-2 virus detection services to support our clients’ efforts to provide safe working environments, re-entry, and continuation of operations. Our viral detection services focused using a turnkey approach: disinfection planning, client representation and strategic planning to reopen with in-house verification testing using the Gold Standard for direct detection of for the unique SARS-CoV-2 virus – Reverse Transcriptase-Quantitative Polymerase Chain Reaction (RT-qPCR).

We are now supporting Institutions of Higher Education in the development of reopening plans using viral detection which can serve as an early warning system to mitigate the spread of the virus within classrooms and dormitories. Virus detection efforts can be focused in several areas: multiple wipe composite sampling on high touch point surfaces

to verify the presence of the virus; air sampling of buildings using coriolis air samplers; validation sampling of disinfection services using a surrogate virus such as a cloned mammalian virus that can't replicate but that contains the SARS-CoV-2 genome, domestic wastewater sampling at dormitories and other locations within the collection system and pooled saliva sampling. As with all data, actions should be taken, and decision tree analysis is a useful tool. Dashboards showing data to the affected community is helpful. Data can be presented in a specific database and GIS platform to aid in the temporal and spatial analysis of the SARS-CoV-2 results.

"Wastewater epidemiology" has been used for decades to detect polio in countries where the disease remains endemic and, more recently, to estimate the prevalence of opioid abuse in U.S. communities. Our program efforts for COVID -19 have focused to date on municipal and campus wastewaters in many locations. Positive SARS-CoV-2 results in sewage are considered a leading indicator for future outbreaks and serves as the canary in the coal mine. Sewage sampling is "non-invasive" since samples can generally be collected without entering a facility and provides quantitative data to inform decisions on facility precautions and business continuity. The results are representative of overall population health since asymptomatic students and employees can contribute to the virus load in sanitary sewage. If detection is discovered, further analysis can be performed to isolate the infected individual(s) such as pooled saliva sampling.

This presentation will present the virus detection test method, sampling strategies and summarize the findings and approach of several types of clients.

Biographies:



Matthew R. Basso received his B.A. in Environmental Science from St. Michael's College and his M.A. in Environmental and Occupational Health from the City University of New York. Matt has extensive experience in all phases of Environment, Health, and Safety (EHS) as a Corporate EHS Manager at American Cyanamid, American Home Products, and Pfizer. Matt is extremely well versed on pharmaceuticals manufacturing, environmental compliance and permitting, clean-up of contaminated sites, and global

auditing. Matt brings extensive global experience with the Pharmaceuticals -in-the-Environment issue to Geosyntec's cadre of practitioners.



George Hollerbach is a Senior Principal at Geosyntec Consultants and directs the Process Engineering Design group in the New Jersey Branch. He has more than 40 years of experience focused on water and wastewater, chemical and pharmaceutical process engineering, construction management and environmental health and safety (EHS) projects. With a strong background in environmental and chemical process engineering, he has supported many capital projects in the development and installation of newly constructed wastewater treatment and air pollution control systems. Since the start of the pandemic, George has focused on the science of the spread of the SARS-CoV-2 virus and disinfection technologies. Geosyntec and their laboratory SIREM has supported institutions of higher learning and other businesses in the development of reopening strategies using PCR analytical services in the detection of the virus in air, wastewater, surfaces and pooled saliva. In addition, Geosyntec continues to lead in the development of ozone disinfection technologies and its virucidal effect on SARS-CoV-2 virus in enclosed spaces.

Date: Thursday, December 3, 2020

Time: 7:00 PM (Zoom link available from 6:45 PM).

Place: Zoom

Cost: Free and Open to the Public

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Join Zoom Meeting

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Meeting ID: 896 0980 1495

Find your local number: <https://sunywcc-edu.zoom.us/j/kiccFtgut>

For further information: contact 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

LONG ISLAND SUBSECTION

The LIACS subsection is continuing with its seminars remotely through zoom. The October seminar had an attendance of over 80 participants. Dr. Zhou Zhou of Queensborough Community College presented her research on **Cyanine Fluorophores** and how they were involved in molecular and cellular processes.

Event: Holiday Seminar

“Kekule and the Structure of Benzene”

Keynote Speaker: Shengping Zheng
Hunter College



Shengping Zheng

The talk will present the history of ke-kule's discovery of hexagonal structure of benzene.


Shenping Zheng received a B.S. from Nankai University and an M.S. from Beijing University and the University of Chicago. He earned a PhD in 2005 from Columbia University under the guidance of Professor Samuel Danishefsky. He did post-doctoral research with Professor Ronald Breslow. He is currently an associate professor of chemistry at Hunter College.


Date: Thursday, December 3, 2020
6:00 PM Eastern Time
(US and Canada)


Register in advance for this meeting:
<https://ncc-zoom.zoom.us/j/9wdu6spzlvGtbMUJ1y7u0nJQns6T4L82k0>

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

The event will include election of 2021 board members, raffle and Chemistry trivia celebration.







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NEW YORK SECTION 2021 SECTIONWIDE CONFERENCE

21st Century Alchemy: Making Coinage Metals Act Like Ir and Pt.

Speaker: Mark E. Thompson
 Department of Chemistry
 University of Southern California
 Los Angeles, CA 90089 USA
 email: met@usc.edu

Abstract:

Heavy metal containing phosphors, especially iridium-based emitters, have become the standard in high performance mobile displays and televisions, involving organic light emitting devices (OLEDs). The high spin orbit coupling in these compounds facilitates the efficient harvesting of both singlet and triplet excitons generated in the electroluminescent process. An alternative to Ir-based emitters are solely-organic emitters based on Thermally Assisted Delayed Fluorescence (TADF). Heavy-metal and TADF emitters give similar OLED performance, which stems from the fact that they give very similar radiative lifetimes. We have found that the key to achieving higher performance for TADF emitters is to put the metal ions back into the TADF emitters.

My talk will cover the evolution of OLEDs and how metal complexes have been designed to give these devices near 100% efficiency for electroluminescence (EL). I will then focus on the photophysical and electroluminescent properties of two-coordinate copper, silver and gold carbene complexes, i.e. (carbene)M^I(donor), where the carbene acts as an acceptor and the donor is an amide[1] or aryl group[2]. These complexes show high phosphorescence quantum yield (FPL = 0.7 – 1.0), with radiative lifetimes in 0.4-3 microsecond regime, with emission lines spanning from the violet to red (see Figure). Cryogenic photophysical measurements show these are TADF emitters with properties rivalling the state of the art iridium based phosphors. We have prepared organic LEDs with these dopants and achieved ~ 100% EL quantum efficiency for green emissive OLEDs and > 60% for blue emissive OLEDs, both at comparatively low drive voltages.

Biography:



Mark Thompson received his B.S. degree in Chemistry in 1980 (U.C. Berkeley), his Ph.D. in chemistry in 1985 (California Institute of Technology) and was a postdoctoral fellow at Oxford University. Thompson currently holds the Ray R. Irani Chair of Chemistry at the University of Southern California. He is a Fellow of the AAAS and Humboldt Society, has received a number of national and international awards and has been elected to the National Academy of Inventors and the National Academy of Engineering (NAE). His research involves the study of materials and devices for electroluminescence, photovoltaics and solar cells, chemical/biological sensing and catalysis. Thompson is the author of approximately 400 papers in refereed professional journals and holds more than 250 patents primarily in the areas of optoelectronic applications, such as light emitting devices (LEDs) and solar cells.

Date: January TBD, 2021

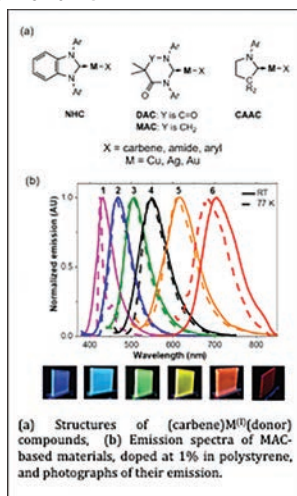
Time: TBD

Place: Virtually, TBD

References:

[1] Hamze, R.; Shi, S.; Kapper, S. C.; Muthiah Ravinson, D. S.; Estergreen, L.; Jung, M.-C.; Tadler, A. C.; Haiges, R.; Djurovich, P. I.; Peltier, J. L.; Jazzar, R.; Bertrand, G.; Bradforth, S. E.; Thompson, M. E., *Journal of the American Chemical Society* 2019, 141 (21), 8616-8626. Hamze, R.; Peltier, J. L.; Sylvinson, D.; Jung, M.; Cardenas, J.; Haiges, R.; Soleilhavoup, M.; Jazzar, R.; Djurovich, P. I.; Bertrand, G.; Thompson, M. E., *Science* 2019, 363 (6427), 601.

[2] Tian-yi Li, Daniel Sylvinson M. R., Ralf Haiges, Peter I. Djurovich, Mark E. Thompson, *Journal of the American Chemical Society* 2019, 142, 6158-6172.



LONG ISLAND SUBSECTION

***** Future LIACS Seminar *****

“Investigation of Siderophores and Their Structural Derivatives as Potential Chemotherapeutic Agents”

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

Abstract:

Siderophores are a diverse class of secondary metabolites secreted by microorganisms under iron-deficient conditions for iron acquisition. Microorganisms utilize dedicated enzymes for siderophore biosynthesis and membrane proteins for transport. Siderophores play an important role in microbial pathogenesis. Siderophore biosynthetic machinery and transport proteins are potential target to develop a new class of antibiotics. Moreover, due to their metal binding properties, and ability to interfere with iron-dependent biological processes, siderophores have emerged as potential anticancer natural products. Our research lab focuses on the synthesis and evaluation of siderophores and their analogs as potential antimicrobial agents and anticancer agents. Azotochelin is one of the catechol-based siderophores that we are currently investigating. This seminar will discuss our efforts towards the development of azotochelin-derivatives as potential chemotherapeutic agents. We have taken a medicinal chemistry approach to understand the structure activity relationship of azotochelin scaffold, and discovered a series of azotochelin analogs with promising anticancer activities. Current efforts are focused on investigating the mechanism of cytotoxicity of these new lead compounds.

Date: Thursday, February 4, 2021
Time: 6:00 PM.



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.



NEW YORK NEWS ITEMS

Dr. Ping Furlan, Professor of Math and



Dr. Ping Furlan

Science at the United States Merchant Marine Academy, is the recipient of the **2020 Outstanding Service Award**. This award was established in 1976 and is supported by the New York Section. The purpose of this award is to recognize the efforts of members of

the New York Section who provide their time, leadership skills and dedicated service in promoting quality programs that contribute to the excellence of the Section. This annual award consists of an engraved ACS plaque that is presented at the New York Section’s General Meeting and Section-wide Conference in January. The awardee becomes a member of the Outstanding Service Award Committee for four years.

Happy National Chemistry Week! As we celebrate chemistry’s biggest annual holiday, it’s the ideal time to announce that the New York Local Section has been selected as a finalist for the following **ChemLuminary Award(s)**:

- Chemattitudes Partnership Award
- Most Innovative New Activity or Program
- Outstanding Performance by a Local Section (Very Large Size)
- Outstanding or Creative Local Section Younger Chemists Committee Event

Thank you all for your patience and understanding as we pivot to new ways of planning celebratory events for our ACS members during the COVID-19 pandemic! Safety is a core value of the American Chemical Society, and it permeates all our actions, activities and events. Therefore, the 22nd Annual ChemLuminary Awards ceremony will be held virtually on **Wednesday, December 9,**

at 4:00 p.m. Eastern Time. The ceremony will include a keynote address by Janet L. Bryant, recipient of the Award for Volunteer Service to the American Chemical Society, and the presentations of awards given by 23 committees of the Society will follow.

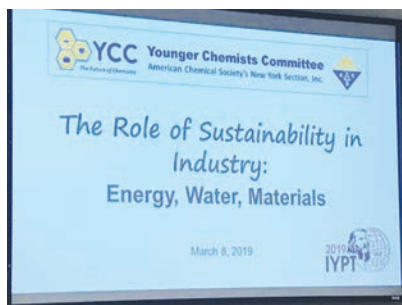
Congratulations on an outstanding year of achievement, and we look forward to seeing

you at the 22nd Annual ChemLuminary Awards Virtual Ceremony!

Sincerely,
Luis Echegoyen, Ph.D.

(Below and on the next two pages are photos taken from activities selected for ChemLuminary Awards)

Images from YCC Event:



Images of 3D Periodic Table



Images of National Chemistry Week and Bakers School STEM Night



WESTCHESTER CHEMICAL SOCIETY

On Wednesday, October 7, 2020, the Westchester Chemical Society (WCS) held a remote (Zoom) meeting. This had originally been planned as a Science Café.

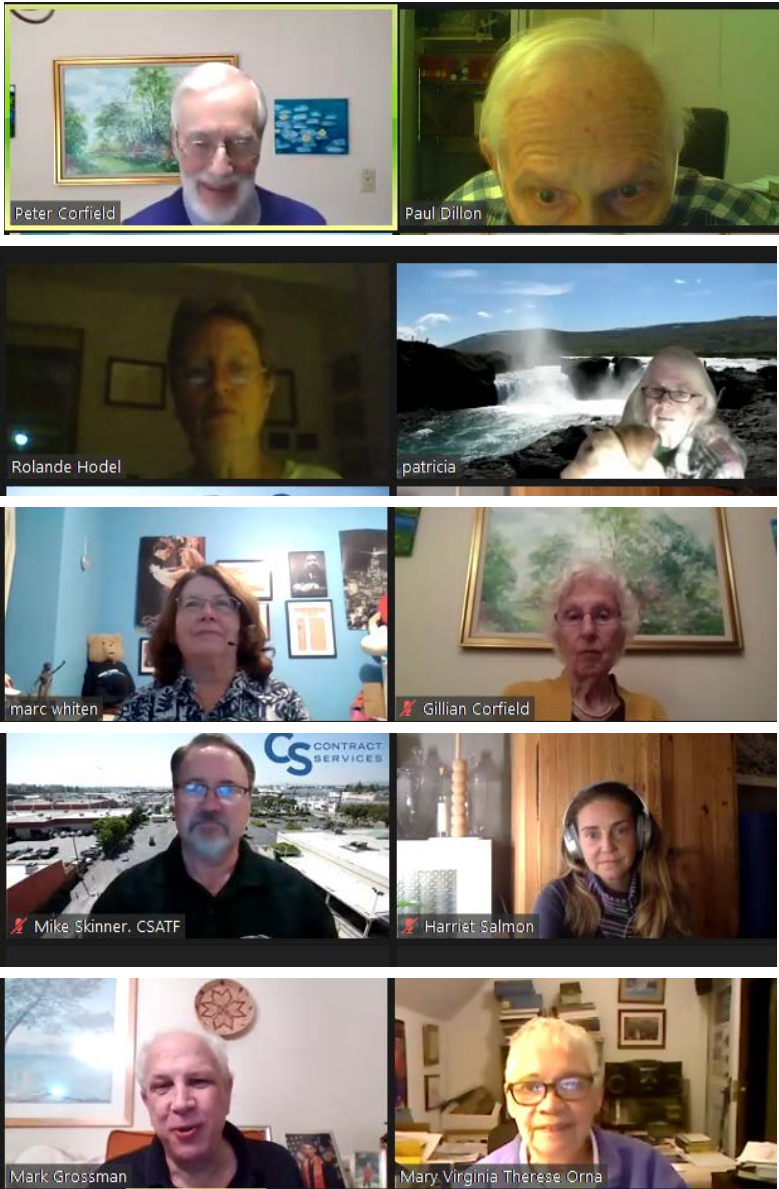


Ms. Monona Rossol, M.S., M.F.A. spoke on “Safety, Fire and Chemical Hazards in Special Effects.” Ms. Rossol is a chemist, artist and industrial hygienist who has been involved with theater and entertainment since birth. Her parents were vaudeville magicians, she was a “prop” by age 1 and was part of the act starting at age 3. Her experience in magic taught her to look for possibilities in areas often overlooked when addressing safety issues. She attended the University of Wisconsin-Madison completing a B.S. in chemistry (with a minor in mathematics), an M.S. in Ceramics and Sculpture and an M.F.A. in Ceramics and Glassblowing (with a minor in music). Her ceramics, sculpture and blown glass have been in many exhibits and have won numerous awards. After moving to New York in 1969 she began working in the area of art safety but supported herself by performing in straight and musical roles in Off-Broadway and Off-Off-Broadway theaters. Her work there involved her in theater safety and, eventually in safety during film production. She is a member of the American Industrial Hygiene Association. She founded and is president of Arts, Crafts & Theater Safety which makes available health and safety services to the arts. She is the safety officer for the International Alliance of Theatrical Stage Employees and has worked extensively for the Screen Actors Guild - American Federation of Television and Radio Artists (SAG-AFTRA). She has written nine books including a winner of a 1996 Choice Outstanding Academic Book Award from the Association of College and Research Libraries. Her latest book: *Pick Your Poison: How Our Mad Dash to a Chemical Utopia Has Made Lab Rats of Us All* (Wiley & Sons) 2011. She has also taught an Art/theater Safety Course at UMass-Amherst. This past February, she and the SAG-AFTRA rep got an OSHA rule protecting child workers in film from atmospheric special ef-

fects in Georgia.

Ms. Rossol’s talk addressed various arts-related safety subjects. She began with a scene from the final episode of the show *Breaking Bad*. A group of people in a warehouse are shot up from the outside by machine guns. The 250 shots are simulated by small, electrically-triggered explosives embedded in the walls called squibs. These cause large amounts of apparent gun smoke (which would not occur in reality with all the shooting from the outside). They also release lead into the atmosphere. In this shot, Ms. Rossol, from the lead per shot, the number of shots and the size of the warehouse, calculated that the airborne lead level was 5,000 times the OSHA standard. Dry ice is often used to simulate vapor. In one stage show, the amount of CO₂ drifting into the orchestra pit was sufficient to cause mental confusion so that the musicians could not play properly (addressed by a blower system). CO₂ can be toxic. She gave an example of a party in which 44 pounds of dry-ice was dropped into a hot tub creating a vapor atmosphere. The person who bought the dry ice, and two others, died. Five more needed hospitalization. She also noted that several “influencers” have suggested putting dry ice into drinks for vapor effects. Ms. Rossol noted that swallowing pieces of dry ice, because they are so cold, can cause severe tissue damage. To properly address safety issues you must realize that they can be quite complex and nuanced. As one last example, Ms. Rossol described a film shot to be done at a pristine pond in Georgia. There were no factories and/or farms, with potential toxic run-off, within miles. The water was crystal clear and very pure. A child actor was to wade into the pond. He could swim and there were physicians on set in case of a problem. “So what could go wrong?” Ms. Rossol decided to examine the personnel roster for the shot and noticed that there were two “reptile wranglers” included. As it turns out, the pond was in a swamp in Georgia that could have alligators resident!

Several members of the WCS Board of Directors, our treasurer and education secretary, Peter Corfield, Ph.D., our co-chairs, Paul Dillon, Ph.D. and Rolande Hodel, Ph.D., member-at-large, Sr. Mary Virginia Orna, O.S.U. (Order of Saint Ursula), Ph. D. and our recording secretary Kay M. Whiten, M.S. attended the meeting. Screen shots of the attendees are on the following page.



**Top row: Peter Corfield, Paul Dillon,
2nd row: Rolande Hodel, Patricia Redden;
3rd row: Kay M. Whiten, Gillian Corfield,
4th row: Mike Skinner (CSATF), Harriet Salmon,
5th row; Mark Grossman, Mary Virginia Orna.**

(All screen shots courtesy of Paul Dillon)

(Note: some names reflect computer names, Gillian Corfield is Peter Corfield's wife).

NY/NJ SAS PRELIMINARY SCHEDULE OF SPEAKERS 2020-2021

Everyone is Welcome to Attend

Note: All meetings will be on-line. Click on this link to join [Join_Microsoft_Teams_Meeting](https://www.microsoft.com/join). For more information, go to <https://www.nysas.org/>



**Open Access Virtual Presentations, sponsored by:
New York/New Jersey Section of The Society for Applied Spectroscopy**

Date	Time	Speaker	Title	Affiliation
12-Nov.	12 noon/ 5:00 PM	Richard Hawk	Scientific Investigation of Works of Art: Allowing the Objects to Speak for Themselves	Yale Univ.
10-Dec.	12 noon/ 5:00 PM	Jenni Briggs	Advancements in Infrared Technology	PIKE Technologies
14-Jan.	12 noon/ 5:00 PM	Debbie Peru John Wasylyk	FUNDamentals of Vibrational Spectroscopy	DP Spectrometry and Training Bristol-Myers Squibb Co.
18-Feb.	12 noon/ 5:00 PM	Karen Faulds	Development of SERS and SESORRS for Multiplexed Bioanalysis	University of Strathclyde
18-Mar.	12 noon/ 5:00 PM	¹ Heinz Siesler & ² Marina deGea Neves	¹ Food Authentication and Classification Using Vibrational Spectroscopy in Tandem with Chemometrics Tools ² Handheld Near-Infrared Spectrometers: On-Site Quality Control and Protection against Product Counterfeiting	University of Duisburg-Essen

All presentations will be held LIVE via Microsoft Teams. For further information: <https://www.nysas.org> or john.wasylyk@bms.com

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 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 CO₂ 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 speciality. We look forward to hearing from you about topics that you wish to share with our other members!

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 jespersen@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.

Nominations with supporting data should be sent to the Office Administrator email btaylor@newyorkacs.org.

To Our Faithful Readers,

*We Wish You All the Joy
and Peace of the
Holiday Season.*

*The Indicator Staff and the
New York and North Jersey
Sections of ACS*