THE Indicator

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Dr. Ruben M. Savizky

2020 New York Section Chair

See Chair's Message on page 5.

www.theindicator.org
www.njacs.org www.newyorkacs.org

THIS MONTH IN CHEMICAL HISTORY

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

As I have done in a number of years past I begin my columns for 2020 (Happy New Year to all my readers) with a look back 100 years as seen in the pages of Annual Reports of The Progress of Chemistry for 1920 issued by The Chemical Society of London in 1921. This valuable summary of the work in chemistry judged most significant for the past year is a wonderful resource for a writer on relatively recent history of chemistry. World War 1, the Great War, only ended two years ago and the pace of chemical research has been slow during 1920. This annual report volume is slim; the series regains its bulk before 1914 only around 1925.

I begin with the section on general and physical chemistry, abstracted by W.C.McC. Lewis. Professor Lewis held the Chair in inorganic and physical chemistry at the University of Liverpool and did classic work on the chemistry of colloids. Most of his report, and consequently this column, is in the area of atomistics; it is of considerable significance even today. “The interest aroused in the problem of the structure of crystals by the pioneer work of Laue and the Braggs [research less than a decade earlier HG] has led to an intensive study, in the first instance by Born and later by others, of the mechanics of the lattice, the energy involved in its dissociation into ions, its formation from the elements, and allied problems.” Lewis goes on to discuss in detail the work of Born, Lande, Fajans, and Haber and their elaboration of what we now call the Born-Haber cycle involving the parameter U, the lattice energy. Values of U have been calculated by Born for many alkali metal halides and other salts.

Fajans has also calculated the heat of hydration of individual gaseous ions from the experimental heats of hydration of salts. Additionally Born and, separately, Fajans have calculated the electron affinities of the neutral atoms of the halogens. The values for Cl, Br, and I are respectively 116, 87, and 81 kcal./mol. (Note the units used at the time; I grew up in the era of the cal. and kcal. and had to change my thinking to J and kJ. Perhaps a few of my readers had the same experience.)

New ideas on the behavior of metals have developed with quantum theory. F.A. Lindemann (who as Viscount Cherwell was Winston Churchill’s principal scientific advisor in World War II) has developed a model for metals that consists of two interleaved lattices, one of ions, the other of electrons. Conductivity of electricity and heat is due to movement of the electron lattice, and that movement is impeded by the vibrations of the ion lattice. As temperature falls, conductivity should consequently increase. “This corresponds with the known supra-conductive state discovered by Onnes in the temperature range of 0 to 3K”.

A challenging group of experiments on the ionization potentials of molecules and atoms has led to values for a number of species. For the hydrogen atom results cluster around 14.0 eV; for the nitrogen molecule around 17 eV; and for the oxygen molecule about 15 eV. Argon has an ionization potential around 15 eV.

The relatively new atomic model of Bohr is examined critically. While the free hydrogen atom is probably paramagnetic, why is the hydrogen molecule diamagnetic? Bohr’s theory at its simplest would suggest that the hydrogen molecule should be paramagnetic. Oxley suggests that compensation of electronic rotations (by some unexplained mechanism) leads to the observed diamagnetism of the hydrogen molecule. A study of the electric (dipole) moment of the water molecule suggests that the electrons in this molecule are not arranged in rings about the nucleus, but might be better described in some other “spatial arrangement , such as that given by the G. N. Lewis cubical atom model.” (!)

Experimental determination of the ionization potential of the helium atom gives a value that is not close to the value calculated by Bohr based on a model that has “a nucleus containing two positive charges with two electrons rotating in the same direction and in the same orbit around the nucleus.” The reviewer suggests that this casts “serious doubt upon the utility of the model suggested by Bohr for this case and for all other cases involving more than one electron”. I guess we’d all agree with that.

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THE Indicator

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

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January Calendar

NEW YORK SECTION

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New York Section-Wide Conference
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also

Wednesday, February 12, 2020
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See pages 11-12..

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Fridays, February 12, April 17, June 5, September 11, November 13, 2020
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NORTH JERSEY SECTION

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ACS "Synthesis on Scale" Seminar
See pages 6-7.

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

December 28, 2019

***The Indicator* is posted to the web around the 15th of the previous month at**

www.TheIndicator.org

2020 New York Section Chair's Message

Hello New York and North Jersey sections!

First and foremost I would like to express my sincere gratitude to the members of New York section of the American Chemical Society for electing me as the 2020 Chair. I am genuinely honored and humbled to be provided with this opportunity to serve in this capacity. I view this as an opportunity to share my passion and love for chemistry with others, particularly undergraduate students.

On behalf of the New York Section of the American Chemical Society, I would like to thank all of the volunteers for their service! As a volunteer organization, we are only as strong as our volunteers make us, and only as successful as we allow our volunteers to be. Because of our many dedicated, enthusiastic and tireless members, the New York section routinely provides outreach services to promote the professional development of our members, to increase scientific literacy among the community and to develop the next generation of chemical professionals.

Some of the premier events by the New York section for 2020 include:

• January 18, 2020 – Sectionwide Conference at the CUNY Graduate Center. There will be a keynote presentation by Dr. Mary Virginia Orna entitled "The Lost Elements: The Periodic Table's Shadow Side" – this is particularly relevant as 2019 was proclaimed the International Year of the Periodic Table! The NY section will also hold planning sessions for the year. All are welcome and those interested in volunteering are encouraged to attend.

• March 27, 2020 – William H. Nichols Distinguised Symposium and Medal Award Dinner (White Plains, NY). The 2020 medalist is Dr. Krzysztof Matyjaszewski from Carnegie Mellon University, and the theme is ""Nanostructured Polymers by Macromolecular Engineering using ATRP (Atom Transfer Radical Polymerization)"

In addition, there will continue to be a wide variety of fantastic events sponsored by the various Topical Groups, Subsections and Committees such as National Chemistry Week events at the New York Hall of Science, Chemists Celebrate Earth Day walk, Chemagination, High School Teachers' "Demo Derby" or the Inorganic and Organometallic Topical Groups Frontiers of Inorganic and Organometallic Chemistry's lecture symposium to name just a few of the events.

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

• Regularly visiting our website, **www.newyorkacs.org**

• Adding the New York section to your Facebook account to receive updates and multimedia presentations of past events

• Continuing to read *The Indicator* (of course!)

• Attending a meeting of a Topical Group, Subsection, or Committee, or at least 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, as well as revived subsections that may not have been active the last time you checked!

I would also encourage you to 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!

When I was the President of our Younger Chemists Committee I was very happy and proud that I was able to organize a mixer with the North Jersey section – we won't talk about how many years ago that was… One of my main priorities as Chair now is to further foster a sense of collaboration with our neighboring sections. To that end, I look forward to participating in the "Synthesis on Scale: Process Chemistry in the Pharmaceutical Industry" Symposium (**http://chemists.princeton.edu/pacs/event/pacs-synthesis-on-scale-symposium-january-15-2020/**) that is being organized by the Princeton section, with support from the North Jersey, Philadelphia and New York sections – as well as our national ACS organization. Please click on the link to learn more about this event, which will take place on January 15, 2020 – an excellent way to kick off the year!

Once again, I would like to thank the New York chapter of ACS for this opportunity, and I look forward to continuing my activities within this wonderful and vibrant section.

Please feel free to contact me at **ruben.savizky@cooper.edu** with any thoughts, ideas or suggestions for the Section or if you are looking for service opportunities.

Sincerely,
Ruben M. Savizky, 2020 Chair of the New York Section

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, January 27, 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@shu.edu** for information.

ACS SEMINAR — SYNTHESIS ON SCALE

Date: Wednesday, January 15, 2020

For all details, see flyer on page 7.

NoJ NMR TOPICAL GROUP

On Thursday, Nov 21st at Rutgers University CCB, the NMR Topical Group hosted its November meeting. Christine Jorge joined the group as the guest speaker following the networking and buffet dinner. Christine graduated from the University of Pennsylvania School of Medicine at 2011 under the direction of Prof. Josh Wand. During her PhD study, Christine focused on using NMR spectroscopy to study the dynamics of protein hydration. After obtaining her PhD from Wand's lab, she joined BMS last year as a Research Investigator. In the seminar, Christine described a novel method of quantitative NMR. It uses band selective optimized flip-angle short-transient (SOFAST) 1D experiments to measure analyte concentration of compounds dissolved in multi-component protonated solvents. The findings presented by Christine illustrated how qHNMR can be used to improve the overall quality and reproducibility of experiments in the drug discovery setting. Great food, wine, and science were enjoyed by all attendance.

It has been my honor and pleasure to serve as the Chair of NMR Topical Group in 2019. Please expect to receive new event announcements from the incoming 2020 Chair, Dr. Justyna Sikorska, in the new year. Happy Holidays!

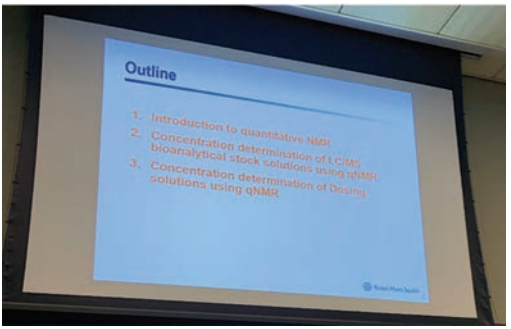


Image. November guest speaker Christine Jorge from BMS elaborates on the qNMR technology.

(Photos courtesy of Qi Gao)

ACS Local Section Princeton | ACS Local Section New York | North Jersey Section American Chemical Society | ACS Local Section Philadelphia

http://chemists.princeton.edu/pacs/event/pacs-synthesis-on-scale-symposium-january-15-2020/

SYNTHESIS ON SCALE:
PROCESS CHEMISTRY IN THE PHARMACEUTICAL INDUSTRY

Registration, Light Breakfast – 9 AM

Jean-Michel Adam, F. Hoffmann-La Roche Ltd.
"BACE1: From 12 mg to 7 kg, a Great Mix of Challenges, Surprises and Achievements"

Sue Zultanski, Merck & Co.
"Process Development of a Robust Manufacturing Route for Bridion"

Lunch - Noon

Jennifer Albaneze-Walker, Bristol-Myers Squibb
"Synthesis of Phosphorodiamidate Oligonucleotides"

Scott A. May, Eli Lilly & Co.
"Continuous Processing of API: From Milligrams to Manufacturing"

Reception – 3:30 PM

Wednesday, January 15th, 2020, 9:00 AM – 4:00 PM
Department of Chemistry & Chemical Biology
Rutgers University
321 Bevier Road, Piscataway, NJ 08854

BAEKELAND AWARD SYMPOSIUM CELEBRATES THE ACHIEVEMENTS OF DR. NEAL K. DEVARAJ

On Friday, November 15, 2019, the Leo Hendrik Baekeland Award symposium was held to honor the University of California – San Diego professor, Neal K. Devaraj for his accomplishments in the development of novel bioconjugation chemistry. The symposium was hosted by Fairleigh Dickinson University in Madison, NJ and was attended by approximately one hundred members and students.

Baekeland awardee, Dr. Neal K. Devaraj

NJACS Chair, Amjad Ali, presents Baekeland Medal to awardee Neal Devaraj

The Leo Hendrik Baekeland Award is given biannually by the North Jersey Section of the ACS to honor a US-based chemist, under the age of 40, for outstanding contributions to pure or applied chemistry. It is named after the U.S. industrial chemist who helped found the modern plastics industry through his invention of Bakelite.

Other speakers at the award symposium were Professor Sidney Hecht (Arizona State University), Professor Amanda Garner (University of Michigan, College of Pharmacy) and Professor Dinshaw Patel (Sloan Kettering Institute). Professor James Collman (Stanford University) also gave a presentation in honor of his last doctoral student, Neal Devaraj.

The symposium was opened by Dr. Cecilia Marzabadi, Chair-Elect for NJACS. The speakers presented talks that covered a range of topics in biochemistry/chemical biology from protein synthesis with non-canonical amino acids, to chemical probing of coding and non-coding RNA, to CRISPR-Cas surveillance complexes, and to the invention of reversible respiration inhibitors. Professor Devaraj's keynote lecture was titled "Exploring the Lipid World."

Dr. Katherine Lee, the District 1 ACS Director, was in attendance and gave congratulatory remarks to the awardee. This was followed by the presentation for the Baekeland Medal and honorarium by Dr. Amjad Ali, the NJACS Chair for 2019. The symposium was followed by a private dinner.

Beakeland Award organizing committee members and speakers at the symposium. Left to Right: Dr. Amjad Ali, Dr. Ron Kong, Professor James Collman, Dr. Le McQuire, Dr. Sid Hecht, Dr. Alan Cooper, Professor Neal Devaraj, Professor Cecilia Marzabadi, Professor Amanda Garner, Professor Dinshaw Patel, Betty Ann Howson, Paul Tukey and Professor Mohammed Elshaer.

(Photos courtesy of Alan Cooper)

NoJ ORGANIC TOPICAL GROUP — 2019 TECHNOLOGY & INNOVATION IN ORGANIC CHEMISTRY SYMPOSIUM

On Thursday, November 21, 2019 at The Palace in Somerset, NJ, the Organic Topical Group hosted a symposium with the theme, "Technology & Innovation in Organic Chemistry". Numerous topics were covered, including electrochemistry, photochemistry, flow chemistry, high-throughput experimentation, machine learning and biochemistry. The symposium featured six seminars, from Professor Song Lin (Cornell), Professor Tom Rovis (Columbia), Dr. Matthew Bio (Snapdragen Chemistry, Inc.), Dr. Subharekha Raghavan (Merck & Co., Inc.), Professor Lee Cronin (University of Glasgow) and Professor Amie Boal (Penn State). We thank the speakers for a dynamic day of science and networking opportunities, and look forward to next year.

The Organic Topical Group committee members and speakers during the symposium. Back left to right: Professor Lee Cronin, Dr. Ken Fraunhoffer, Professor Tom Rovis, Dr. Sue Zultanski, Professor Joe Badillo, Professor Song Lin. Middle left to right: Dr. Matthew Bio, Dr. Mike Smith, Dr. Subharekha Raghavan. Front left to right: Professor Yalan Xing, Professor Amie Boal, Professor Enver Izgu.

(Photo courtesy of Terrenc Hopkins, Student at William Paterson)

New York Section's 2020 Section-Wide Conference

AMERICAN CHEMICAL SOCIETY'S NEW YORK SECTION 2020 SECTION-WIDE CONFERENCE

PLEASE REGISTER AT
http://tinyurl.com/2020Sectionwide

Date: **SATURDAY, JANUARY 18, 2020**
Cost: FREE TO ALL
Times: 9:30AM – 1:15PM
Place: CUNY Graduate Center, 365 Fifth Avenue, Room 4102, New York, NY

PROGRAM

9:30 AM	ARRIVAL AND REFRESHMENTS	
10:00 AM	GREETINGS FROM THE ACS NEW YORK SECTION 2020 CHAIR	Dr. Ruben M. Savizky The Cooper Union
10:10 AM	AWARD PRESENTATIONS	
	Service Plaque and Pin to the 2019 ACS New York Section Chair	Dr. Justyna Widera-Kalinowska Adelphi University
	ACS New York Section Outstanding Service Award for 2019	Dr. Brian R. Gibney CUNY – Brooklyn College and Graduate Center
	Nichols Foundation H.S. Chemistry Teacher Award for 2019	Mr. Paul Orbe Academy for Enrichment and Advancement Union City High School, Union City, NJ
	ACS Salute to Excellence Awards	Dr. Ping Furlan – U. S. Merchant Marine Academy Dr. Justyna Widera-Kalinowska – Adelphi University Mr. Joseph Wiener –- PepsiCo
10:30 AM	Presentation of Candidates for the 2020 Elections	Dr. Rita K. Upmacis 2020 Chair Elect ACS New York Section Pace University
10:45 AM	KEYNOTE SPEAKER: "The Lost Elements: The Periodic Table's Shadow Side" *(See abstract and biography on page 11)*	Dr. Mary Virginia Orna The College of New Rochelle
11:45 AM	COFFEE BREAK. There will be poster presentations by the New York Section Project SEED Students.	
12:00 PM	ACS, NEW YORK SECTION COMMITTEE PLANNING SESSIONS FOR 2020.	
	Educational Activities: (Chemagination, Chemists Celebrate Earth Day, Continuing Education, High School Chemistry Olympiad, National Chemistry Week, Nichols Foundation Teacher Award, Project SEED, Student Membership) *Chair:* Dr. Alison G. Hyslop	
	Member Affairs: (ACS Fellows, Awards, Employment and Professional Relations, History of the New York Section, *Indicator*, Membership, Outstanding Service Award) *Chair:* Dr. Joseph M. Serafin	
	Program Review: (Subsection and Topical Discussion Group Chairs) *Chair:* Dr. Anne T. O'Brien	
	Public Affairs: (Academe and Industrial Relations, Environmental Chemistry, Fund Raising, Government Affairs, Information Technology, Public Relations, Speakers Bureau) *Chair:* Dr. Robert P. Nolan	
1:00 PM	REPORTS FROM THE CHAIRS OF THE COMMITTEE PLANNING SESSIONS.	
1:15 PM	CONCLUSION OF THE MEETING. Join with colleagues for lunch at a local restaurant.	

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 Barbara 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, February 21
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

NEW YORK SECTION 2020 SECTION-WIDE CONFERENCE

The Lost Elements: The Periodic Table's Shadow Side

Speaker: Dr. Mary Virginia Orna
The College of New Rochelle

Abstract: Fascinating as the Periodic Table and its tenants are, this talk will highlight equally fascinating tales of failed candidates that never made it into the Periodic Table or were subsequently expelled from it. Before Mendeleev, confusion regarding just what and how many elements there were reigned supreme – and continued to do so well into the 20th century due to conceptual, absurd, and even ridiculous errors. Some of these wrong turns were the results of experimental errors of the grossest sort, whereas others arose from incompetence, scientific fraud, unorthodox beliefs, misplaced nationalism, and just plain obstinacy. These tales of folly, human ambition….and ingenuity give us a unique understanding of how chemistry really works. This talk is based on Mary Virginia Orna's book co-authored with Marco Fontani and Mariagrazia Costa, "The Lost Elements: The Periodic Table's Shadow Side" (Oxford University Press, 2015)

Biography: Sister Mary Virginia Orna, O.S.U. (Order of Saint Ursula) is professor of chemistry, emerita, The College of New Rochelle. She is a tour speaker on the roster of the American Chemical Society and has been an invited lecturer to every part of the United States and many countries in Europe, the South Pacific, and the Middle East. Her countless publications have appeared in the Journal of Chemical Education, Color Research and Application, and many other journals. She has also authored numerous books, book chapters, and encyclopedia articles. Mary Virginia has served as Chair, Program Chair and Treasurer of the Division of the History of Chemistry of the ACS. She is currently serving as ACS Councilor and as a member of the ACS Divisional Activities Committee. She is a recipient of several major awards such as the 1989 New York State Professor of the Year, the 1996 ACS Visiting Scientist Award and the 1999 ACS George Pimentel Award. Mary Virginia is presently president of ChemSource,Inc., a major effort in chemistry teacher preparation and enhancement funded by the National Science Foundation.

Date: Saturday, January 18, 2020

See complete program on previous page.

WESTCHESTER CHEMICAL SOCIETY

FUTURE MEETING

* * * * *

Special Seminar – "Microengineered Biomaterials and Biosystems for Cancer and Immunoengineering"

Speaker: Weiqing Chen, Ph.D.
Assistant Professor
Departments of Biomedical Engineering and of Mechanical and Aerospace Engineering
New York University
New York, NY

(continued on page 12)

WESTCHESTER CHEMICAL SOCIETY

(continued from page 11)

Abstract:
Taking advantages of state-of-the-art micro/nanotechnologies, fascinating functional biomaterials and integrated analytical systems, we can address numerous important problems in fundamental biology as well as clinical applications in cancer diagnosis and treatment. This seminar will discuss interdisciplinary approaches that leverage engineering advances in biomaterials, microfluidics and organ-on-a-chip systems for new and better solutions for emerging problems in cancer and immunoengineering. Specific examples include microfluidic lab-on-a-chip systems for capture and analysis of immune cells as well as rare circulating tumor cells for cancer diagnosis. I will also discuss how my lab has developed novel 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, which may help identify new cancer biomarkers and develop personalized models for therapeutics. I will highlight how our cancer sensing and modeling systems can be used to study underlying mechanisms of tumor progression and screen personalized cancer immunotherapies.

Biography:
Weiqiang Chen is an Assistant Professor in the Departments of Mechanical and Aerospace Engineering and Biomedical Engineering at New York University. 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.

Date: **Wednesday, February 12, 2020**
Times: Refreshments: 5:30 PM
Lecture: 6:00 PM
Place: Westchester Community College
Gateway Building, Room 110
75 Grasslands Road
Valhalla, NY 10595
Cost: Free and Opened to the Public

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

Inclement weather: The WCC information number for closures: 1-914-606-6900

RSVP: Appreciated but not necessary.

LONG ISLAND ACS 2020 SPRING SEMINAR PROGRAM

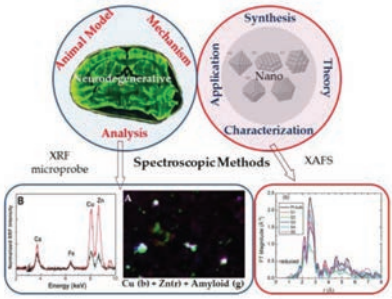
February Seminar

"Synchrotron Views of Transition Elements: Understanding Neurodegeneration and Nanostructures"

Speaker: Dr. Qi Wang
Department of Chemistry
Nassau Community College
Garden City, NY 11530

Abstract: Transition elements feature varied electronic and structural properties and have great importance in both biological and chemical systems. The interplay among the atoms of these elements and others leads to rich behaviors and surprising functions. For example, traces of metallic ion-contained proteins play essential roles for the biological metabolisms while the excess or deficiency may disrupt the normalities. Dr. Wang will present the evidence that metal accumulation is associated with protein-misfolding, which has been believed to be a critical factor in neurodegenerative disorders (Alzheimer's disease, Scraipe, etc.). The work highlighted the utilization of synchrotron-based x-ray fluorescence (XRF), in situ imaging metal (notably Cu, Fe, Zn) ion distributions, concentrations and oxidation states as the function of disease severity (using an animal model). The results were spatially and temporally correlated with the secondary struc-

ture of proteins (α-helices vs. β-sheets) in the same tissue samples by applying synchrotron Fourier transform infrared microspectroscopy (FTIRM). The coordinated analysis of metal species and protein conformations shed light on the association between metal dyshomostasis and neurodegeneration. In the second example, I will discuss an investigation of the nanostructures involved with transition metals (eg. Pt, Pd). We have conducted the research aimed at the fundamental understanding of nanoparticles by examining the electronic attributes, structural parameters (particle size, shape) and thermal behaviors. In this regard, a third synchrotron-based technique, x-ray fine structure spectroscopy (XAFS), was employed. The study provided the benchmark information for designing and tailoring the formation of nanostructures towards the potential properties and applications. The materials are based upon the research work done at National Synchrotron Light Source and Advanced Photon Sources. The presenter acknowledges the supports by the grants from U.S. Department of Energy and National Institute of Health.



Date **Thursday, February 6, 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
Direction:
http://www.qcc.cuny.edu/about/driving.html

* * * * *

March Seminar

"Synthesis and Characterization of M(CO)(CN) and M(RS2)x Complexes to Mimic Hydrogenase"

Speaker: Dr. Daniel Amarante
Department of Chemistry
Stony Brook University

Abstract: Currently, the energy infrastructure is dominated by fossil fuel production and combustion. This is causing massive emissions of greenhouse gases which are harming the planet. Hydrogen is often suggested as alternative fuel, sometimes called the "fuel of the future". This statement has been mentioned for at least a generation, usually with greater seriousness during high petroleum prices. The technology to utilize hydrogen as fuel is highly advanced, however it is the scaling up that remains an issue. Hydrogen fuel cells have been designed and used, but because of the high cost and limited availability of platinum group metals used in these cells, this technology has not become widespread to the retail market. Scientists have turned to biological systems that utilized hydrogen in order to develop new catalysts that do not require platinum group metals. In nature, hydrogen is consumed/produced with certain efficiency by hydrogenase enzymes. These enzymes are characterized as metalloenzymes which contain iron and/or nickel core. The discovery of [Fe(CN)x(CO)y] units in hydrogenase enzymes has prompted the study of iron–cyanide–carbonyl compounds. Recently, compounds of the general structure [FeII,III(CN)4L2]2–,1–, where L = DMSO, CO, pyridine, were synthesized for the first time. This prompted studies of related compounds of the congener elements of iron, specifically using ruthenium and osmium. These studies have produced the first compounds of ruthenium with the general structure, [RuII(CN)4L2]2– where L = CO and pyridine. Iron carbonyl complexes with the H2PS2 ligand have been previously used to mimic the iron centers in hydrogenase enzymes. To expand on these studies, ruthenium was used to replace iron in the general structure [MII(CO)3(PS2)]. Various compounds were also synthesized using Li2NS2 in place of Li2PS2.

Date: **Thursday, March 5, 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

(continued on page 14)

LONG ISLAND ACS SPRING SEMINAR SERIES

(continued from page 13)

Directions:
http://www.qcc.cuny.edu/about/driving.html

* * * * *

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/driving.html

Deadline for items to be included in the February 2020 issue of *The Indicator* is
DECEMBER 28, 2019

BIOCHEMICAL TOPICAL GROUP — JOINT MEETING WITH THE NYAS BIOCHEMICAL PHARMACOLOGY DISCUSSION GROUP

Branched Chain Amino Acids and Human Disease

Organizers: Zoltan Arany, MD, PhD, University of Pennsylvania
Michelle Clasquin, PhD Pfizer
Kevin Filipski, PhD Pfizer
Rachel Roth Flach, PhD Pfizer
Claire Steppan, PhD Pfizer
Yibin Wang, PhD University of California Los Angeles
Sonya Dougal, PhD New York Academy of Sciences
Kari Fischer, PhD New York Academy of Sciences

Keynote: Susan Hutson, PhD Virginia Tech

Speakers: Tracy Anthony, PhD Rutgers University
Zoltan Arany, MD, PhD University of Pennsylvania
David Chuang, PhD, UT Southwestern
Christian Metallo, PhD University of California San Francisco
Christopher Newgard, PhD Duke University
Rachel Roth Flach, PhD Pfizer
Rong Tian, MD, PhD University of Washington
Yibin Wang, PhD University of California Los Angeles

Altered branched chain amino acid (BCAA) metabolism is implicated in multiple diseases including diabetes/metabolic syndrome, heart failure, and cancer. This symposium

will review the landscape of what is known about BCAA metabolism in various systems, discuss knowledge gaps, and identify potential therapeutic nodes of intervention to ameliorate human diseases.

Date: **Thursday, March 19, 2020**
Time: 8:30 AM – 6:00 PM
(Reception to follow)
Place: The New York Academy of Sciences
7 World Trade Center
250 Greenwich Street – 40th Floor
New York, NY 10007
Cost: ACS and Academy members save $50 or more on this event. Please select the appropriate non-member Registration Category and use the Priority Code "ACS".

Poster Abstract Deadline: Monday, January 13, 2020

Early Bird Discounted Registration Deadline: Thursday, February 6, 2020

For more information and to register for the event, go to: **www.nyas.org/BCAA2020**

To become a Member of the Academy, visit **nyas.org/become-a-member/**

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.

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, March 27, 2020**
Place: Crowne Plaza Hotel, White Plains, NY

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. Luis Echegoyen 2020 President, 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 – MARCH 15, 2020**

MAIL RESERVATIONS TO:

ACS, New York Section Office
St. John's University, Department of Chemistry
8000 Utopia Parkway
Queens, NY 11439

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_____ _____

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

ACS Local Section New York

August 1, 2019

Dear Potential MARM 2020 Exhibitors:

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

We invite your organization to take advantage of the benefits of This is the opportunity to connect with chemists, biochemists and Atlantic Region of the ACS, from Washington, DC, to New York, NY. is "Chemistry in Focus". The meeting will highlight the areas of forensic, life science, materials science, and environmental c attendees from academia, government, industry, and K-12 educat maximize your visibility with attendees including decision make employees.

Included in your sponsorship are

- Exhibit areas located in a high traffic area to ensure a stead your display. The exhibit hall will be immediately adjacent session, lunch area, refreshment area, and technical session.
- A 5-ft rectangular table and two chairs.
- Exhibit spaces available with standard (110 V, 15 A) power, if
- Wireless internet access is available throughout The Graduate C
- Two complimentary meeting registrations, that includes techn lunches.
- Meeting attendees' contact information.
- Logo with 50 word-description of your organization along with website on the MARM 2020 website at www.marm2020.org.

Register before March 31, 2020 to receive the Early Bird Discount Rate, and 2020 to ensure full benefits. Returning MARM exhibitors receive additional 15% register before March 31, 2020. Exhibit space and power are limited and will b on a first come-first serve basis. Please see the attached exhibi

For application form and additional information, please see MARM2 contact us if you have any questions. We look forward to your sponsorship ar MARM 2020.

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 Che
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Treasurer
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MARM Executive Board Contact
Martha Hollomon
MarthaHollomon@comcast.net

ACS Meeting Planning Partner
Kimberly Savage
K_Savage@acs.org

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

48TH MIDDLE ATLANTIC REGIONAL MEETING

CHEMISTRY IN FOCUS

EXHIBITION OPPORTUNITIES

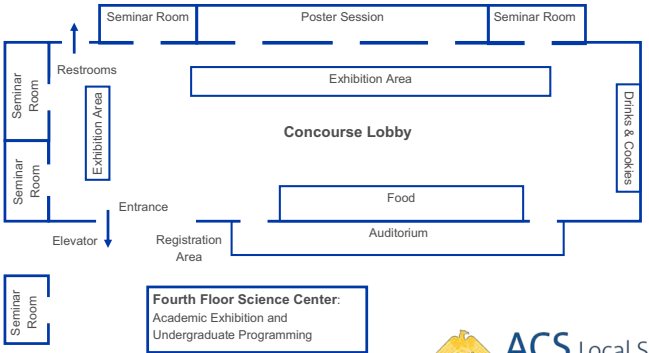
THE GRADUATE CENTER OF THE CITY UNIVERSITY OF NEW YORK | JUNE 12, 2020

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.



Contact Information:
expo@marm2020.org

ACS Local Section New York

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

NEW YORK LOCAL SECTION CELEBRATES 2019 NATIONAL CHEMISTRY WEEK WITH A GIANT 3D PERIODIC TABLE AND A HANDS-ON CHEMICAL SPECTACULAR SHOW AT NEW YORK HALL OF SCIENCE

Following a hugely successful kick-off event on Friday, October 18 at the New York Hall of Science (NYSCI) when hundreds of NYACS members unveiled their Giant 3D Periodic Table to commemorate the International Year of the Periodic Table (IYPT 2019), the New York Section celebrated 2019 National Chemistry Week (NCW) on Sunday, October 20, from 11:00 AM to 4:00 PM with a spectacular chemistry hands-on show in Viscusi Gallery. For the 15th consecutive year, more than 350 volunteers, traveling from all directions and representing 20 colleges, high schools, nonprofit organizations, chemical companies, and business centers participated in the event, celebrated the yearly theme — "Marvelous Metals", and enjoyed the photo opportunities with the Giant 3D Periodic Table in Great Hall. The Table, 12ftx12ftx11ft in size and designed and constructed by thousands of NYACS volunteers, was on display from October 18 to October 27 during the entire NCW.

Enjoying the photo time with the NYACS giant 3D Periodic Table.

(Photo courtesy of Dr. Mike Melcer)

The NYACS giant 3D Periodic Table was displayed at the 58th Eastern Analytical Symposium, November 18-20, 2019, in Princeton, New Jersey.

(Photo courtesy of Frank Romano)

The hands-on demo included nearly 40 activity tables, more than 50 theme-related, action containing, safe and fun experiments, experiments from Let's Do Chemistry Kits, a large screen slideshow on metals and elements, and engaged 1200 Hall visitors especially students in grades K-12. Sample theme-related activities were "what rocks are magnetic", "copper color change", "instant crystals", "silver mirror", "metallic slime", "iron in cereal", "dirty pennies", "gallium liquid", "memory metal", "aluminum reaction", "thin foil bulb", "malleability of metals", "conductivity of metals", "coin battery", "copper solar cell", "uranium glass", "density of metals", and "ferrofluid".

(continued on page 22)

(At left) Bronx Community College volunteers show the silver tree and silver mirror reactions.

(Photo courtesy of Dr. Dempsey Hyatt)

(At right) Captain Dave Palmer demonstrates how copper solar cell works.

(Photo courtesy of Captain Tony Nigro)

Volunteers and participants alike were happily surprised when Dr. James Wynne of the IBM, the LASIK inventor, visited the site. Dr. Wynne shared his wealthy experiences, crediting his high school science teacher for inspiring him into the field of science, and praised the volunteers for what they were willing to do to help excite the next generation of scientists.

Near the conclusion of the Day, the Section Chair, Dr. Justyna Widera-Kalinowaska, joined the NCW Committee co-chairs, Dr. Ping Furlan and Dr. Dempsey Hyatt, and presented outstanding awards to volunteers. Publicity this year included Program brochures, on-site ACS banners, NCW balloons, websites, facebook photos and news, flyers in English and Spanish sent to all NYACS members, 2000 school districts, and news articles sent to the area major newspapers, TV and Radio stations.

Once again, we would like to extend our warmest thanks to our volunteers as well as the sponsoring colleges, universities, companies and non-profit organizations. Their enthusiastic support, their strong leadership and community spirit have made the continued success of this largest chemical hands-on public educational event in the area possible: Adelphi University, American Institute of Chemical Engineers – New York Chapter, Barnard Chemical Society, Bronx Community College, College of Mount Saint Vincent, Columbia Unviersity, Guttman Community College, Hoftstra University, John Jay College of Criminal Justice, Maruzen

Stony Brook University receives the "Travel Award for Longest Distance Traveled by a Team".

(Photo courtesy of Dr. Mike Melcer)

Queensborough Community College receives the "Over Achiever for Most Demo" Award.

(Photo courtesy of Dr. Mike Melcer)

International Co., Ltd., New York University, Pace University, PepsiCo, Queensborough Community College, Rye High School, St. Johns University, St. Joseph's College, Stony Brook University, U.S. Merchant Marine Academy, and New York Hall of Science. Thanks also to John Jay College of Criminal Justice and Queensborough Community College for geneously donating funds to this year's Program.

Coordinated by Ms. Erin Wasserman, the New York Section also sponsored an Illustrated Poem Contest for students in grades K-12 that celebrated the NCW theme - Marvelous Metals. A total of 18 entires were received this year and the winners of the NYACS Local Section were: Molly O'brien (K-2 category, Dogwood Elementary School), Siena Giaquinto (3-5 category, Greenvale Elementary School), and Shoshano Horn (9-12 category, North Shore Hebrew Academy High School). Each of the winners will receive an Amazon Gift Card and the winning entries were submitted to ACS to enter the National Contest.

(continued on page 22)

The NYACS Local Section Poem Contest 9-12 Category Winner, Shoshana Horn of the North Shore Hebrew Academy High School.

(Photo by Shoshana Horn)

NEW YORK LOCAL SECTION CELEBRATES 2019 NATIONAL CHEMISTRY WEEK

(continued from page 21)

Dr. Pamela Kerrigan is recognized for being the longest and the best friend and supporter of the New York Hall of Science NCW Program.

(Photo courtesy of Dr. Mike Melcer)

The New York ACS Section presents the "Salute to Excellence" Award to IBM T. J. Watson Research Center for their outstanding support of STEM Education via the New York ACS NCW Program.

(Photo courtesy of Dr. Jennifer Albert)

Our friends from Poland Manufaktura Naukowco celebrate the 2019 International Year of the Periodic Table and National Chemistry Week with the New York Section of the ACS

(Photo by Magdalena Osia)

Volunteers from the United States Merchant Marine Academy.

(Photo courtesy of Dr. Mike Melcer)

New York Section Celebrates 2019 National Chemistry Week with a Giant 3D Periodic Table and a Hand-on Chemical Spectacular Show at New York Hall of Science

(additional photos by Magdalena Osial, Dempsey Hyatt, Mike Melcer and Hsinrong Wei)

WESTCHESTER CHEMICAL SOCIETY

On November 7, 2019 Dr. Gerard Parkin spoke on "Tripodal Ligands in Bioinorganic and Organometallic Chemistry: Carbon Dioxide Functionalization and Mercury Detoxification". Note that this talk had originally been scheduled for February 12, 2019 but had to be rescheduled because of inclement weather. Dr. Parkin is a professor in the Department of Chemistry of Columbia University, New York, NY. He received his B.A., M.A., and D. Phil degrees from the Queen's College, Oxford University, where he carried out research under the guidance of Professor Malcolm L. H. Green. In 1985, he moved to the California Institute of Technology as a NATO postdoctoral fellow to work with Professor John E. Bercaw. He joined the faculty of Columbia University as Assistant Professor in 1988 and was promoted to Associate Professor in 1991 and to Professor in 1994. He served as Chairman of the Department from 1999 – 2002. He has also served as Chair of the New York Section of the American Chemical Society, Chair of the Inorganic Chemistry and Catalytic Science Section of the New York Academy of Sciences, Chair of the Organometallic Subdivision of the American Chemical Society Division of Inorganic Chemistry, and Chair of the Gordon Research Conference in Organometallic Chemistry. He is an elected Fellow of both the American Chemical Society and the Royal Society of Chemistry and is the recipient of a variety of international awards, including the ACS Award in Pure Chemistry, the ACS Award in Organometallic Chemistry, the RSC Corday Morgan Medal, the RSC Award in Organometallic Chemistry, the RSC Ludwig Mond Award, and the RSC Chem Soc Rev Lecture Award. He is also the recipient of the United States Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring, the United States Presidential Faculty Fellowship Award, the Columbia University Presidential Award for Outstanding Teaching, and the Lenfest Distinguished Columbia Faculty Award.

His principal research interests are in the areas of synthetic, structural, and mechanistic inorganic chemistry.

His talk dealt with the reactivity of metal compounds. Although many metal ions are essential for life, some are highly poisonous. For example, while zinc is essential for humans, as exemplified by its roles in carbonic anhydrase and liver alcohol dehydrogenase, its congeners, cadmium and mercury, are most toxic. He discussed synthetic analogues (small molecules that mimic the structure and function of enzymes) which provide insight into the natural systems. Tripodal ligands provide a means to obtain such analogues. He described his research with these, focusing on the application of tripodal ligands in the chemistry of zinc and mercury. He also noted that these ligands also provide access to novel hydride compounds of zinc and magnesium. These are capable of a variety of catalytic transformations, such as functionalizing carbon dioxide, a transformation that is of particular interest considering that carbon dioxide is a culprit in climate change and is a ubiquitous and typically inert compound. There was discussion and questions both during and after the talk. In addition to the technical aspects of his talk, Dr. Parkin gave a most interesting description of his time at Oxford and how formative those years had been for himself. Seven members of the WCS board of directors attended Dr. Parkin's talk (Dr. Peter Corfield, Jean Delfiner, Dr. Rolande Hodel, Joan Laredo-Liddell, Sr./Dr. Mary Virginia Orna, Dr. Jody Reifenverg, and Kay Whiten).

In addition to being a chemist, Dr. Parkin is also an excellent magician and amazed everyone with wonderful card tricks both during the meeting and later at dinner, held at a nearby restaurant after the meeting, which was held at the Westchester Community College in Valhalla, NY. The photo below is of Dr. Parkin and the several WCS board members who went to restaurant for dinner

Back Row: Peter Corfield, Jean Delfiner, Joan Laredo-Liddell, Gerard Parkin. Front: Sr. Mary Virginia Orna.

(Photo courtesy of Peter Corfield)

LONG ISLAND ACS 2019 FALL SEMINAR PROGRAM

On the evening of Thursday, November 7, 2019, a total of seventy-nine Long Island ACS (LIACS) members and affiliates enjoyed the evening as Dr. Paul Marchese of the Queensborough Community College (QCC) gave an engaging and enlightening presentation on Temporal Variability of Nutrient Concentrations in Long Island Sound. During the seminar, Dr. Marchese shared his research results coming from more than a decade of consistent and persistent data collection, which produced very valuable information. Most importantly, the data showed that the decades of federal and state funds did help reduce the nitrogen levels in the Sound, improving the overall health of the Sound. Dr. Marchese's presentation generated great interest among the audience, as evident by the many thoughtful questions he received at the end of the seminar and also after the seminar. Dr. Marchese grew up in Queens and graduated with a bachelor's degree in mechanical engineering from Columbia University. After receiving a doctorate in Geosciences from Columbia University, he joined the faculty at Queensborough Community College and has been working there since 2001. He is an author of numerous articles in peer reviewed journals relating to oceanography, science and technology education, and educational diversity, a multiple award recipient from Sigma Xi Research, and a recipient of many grants including a NSF grant for training high school science teachers. Dr. Marchese's current research interest includes studying hypoxia in Long Island Sound, and the impact of climate change. Seven members accompanied Dr. Marcese for dinner after the seminar at Maria's Greek Restaurant, Queens, NY. Our special thanks also go to the 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.

Photos taken during the November 7, 2019 Seminar, the last Seminar of the 2019 LIACS Seminar Series. After thanking the members for a wonderful year, Dr. Ping Furlan, the LIACS Chair, introduced Dr. Paul Marchese, the featured Seminar Speaker, who enlightened the audience with the results coming from his more than a decade study on the nutrient levels in Long Island Sound.

(Photos courtesy of Dr. Paul Sideris)

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.

WESTCHESTER CHEMICAL SOCIETY

Distinguished Scientist Award 2020

The Westchester Chemical Society is accepting nominations for the "WCS Distinguished Scientist Award 2020". Scientists who live or work in Westchester or the Bronx qualify. The awardee is expected to attend the Awards Dinner (April/May time-frame) and to present aspects of his or her work. Self-nominations are acceptable. Nominations are not carried over from previous years. New and possibly updated nominations should be submitted. Please send a cover letter stating why your nominee should receive the award along with the nominee's resume **by January 31, 2020 to:**

Dr. Paul Dillon at
PaulWDillon2@hotmail.com or
67 Matthes Road, Briarcliff Manor, NY 10510

or to: Dr. Peter Corfield at
pwrc@earthlink.com.

NORTH JERSEY SECTION

Do You Know of Someone in the North Jersey Section of ACS Who Should Be Recognized as an ACS Fellow?

The American Chemical Society (ACS) Fellows Program was created by the ACS Board of Directors in December 2008 to recognize members of ACS for outstanding achievements in and contributions to the science, the profession, and the Society. To learn more about the program go to **www.acs.org/fellows**.

The North Jersey Section of ACS has outstanding members who have made exceptional contributions to the science, or their profession and have provided excellent volunteer service to the ACS community. The section can nominate up to 9 of its members for this distinction. We are asking for your help in identifying these outstanding members of our section by filling out a short survey **by November 30, 2019**.

The survey can be found at **http://tinyurl.com/y4x4arwc**. Someone from the NJACS Awards Committee will contact you after we receive your nomination.

2020 AWARD FOR CREATIVITY IN MOLECULAR DESIGN & SYNTHESIS

The ACS North Jersey Section is soliciting nominations for the 2020 Award for Creativity in Molecular Design & Synthesis. The award recognizes initiative, creativity, leadership, and perseverance in pure and/or applied chemistry. Nominees must have had broad impact in the areas of chemical synthesis, method development, bioorganic/medicinal chemistry, pharmaceutical sciences, and/or molecular recognition.

Nominations should include a letter describing the nominee's achievements, a brief biography and curriculum vitae, and a list of the

nominee's important published works. Supporting letters are strongly encouraged.

Please submit materials **by February 28** to **Susan_Zultanski@merck.com**. The award is presented by the section every two years, and the prize consists of a crystal plaque and a $5,000 honorarium.

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 **njesper1@optonline.net** 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!

Positions Available

NEW JERSEY INSTITUTE OF TECHNOLOGY

Biological Chemistry

Department of Chemistry and Environmental Science

The Department of Chemistry and Environmental Science (CES) at the New Jersey Institute of Technology (NJIT) invites applications for a tenure-track faculty position at the Assistant Professor level inBiologicalChemistry, preferably with a leading interest in gene and cell therapy science, starting in the Fall of 2020. The CES Department at NJIT, within the College of Science and Liberal Arts, is committed to exceptional core education in the liberal arts and excellence in research and scholarship. Many resources, facilities, and collaboration opportunities exist within the Department, College, University, and neighboring institutions. Competitive salary, startup funds, and laboratory space will be provided. Minimum qualifications are a PhD in chemistry, molecular biology, chemical/biochemical engineering, or a closely related field from an accredited institution, and relevant postdoctoral research experience. The successful candidate is expected to establish an active, externally funded research program and to demonstrate excellence in graduate and undergraduate teaching, particularly in biological and pharmaceutical chemistry-related courses.

The successful candidate will have the opportunity to collaborate with NJIT's recently established Cell and Gene Therapy Development Center. This center enables companies and researchers to access and utilize state-of-the-art equipment to develop cutting-edge cell and gene therapy products in a cost- and time-effective manner. In the accelerating race to improve products and gain FDA approval, biopharmaceutical companies and researchers will greatly benefit from an industry-agnostic platform that offers a variety of resources and services in the field of

(continued fon page 28)

POSITIONS AVAILABLE

(continued from page 27)

cell and gene therapy.

CES (**http://chemistry.njit.edu**) at NJIT is in a dynamic growth phase, with ten new hires in the past five years, and a recent ren- ovation and expansion of facilities. CES offers degree programs in Biochemistry, Chemistry, Environmental Science, Forensic Science, and Pharmaceutical Chemistry. NJIT is an R1 Doctoral University, con- veniently located in the New York metropol- itan area. With an enrollment of nearly 12 thousand students, it is continuing to build in- ternationally- recognized programs in chem- ical and environmental sciences.

Applicants must apply online at **http://njit.csod.com/ats/careersite/JobDetails.aspx?site=1&id=1741** and submit a letter of application, curriculum vitae,maximum five-page description of research plans, one-page description of teaching phi- losophy and interests, and names and con- tact information of at least three references. Review of applications will begin on No- vember 1, 2019, and continue until the posi- tion is filled. Inquiries can be sent to sadik@njit.edu. Additional positions available in our Department are posted at **http://jobs.njit.edu.**

As an EEO employer,NJIT is committed to building a diverse workforce and encourages applications from individuals with disabilities, minorities, veterans, and women.

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Inorganic Chemistry

Department of Chemistry and Environmental Science

The Department of Chemistry and Environmental Science (CES) at the New Jersey Institute of Technology (NJIT) invites applications for a tenure-track faculty position at the Assistant Professor level in Inorganic Chemistry, preferably with a leading interest in energy-related applications, including photovoltaic materials and solar cells, starting in the Fall of 2020. CES at NJIT, within the College of Science and Liberal Arts, is committed to exceptional core education in the liberal arts and excellence in research and scholarship. Many resources, facilities, and collaboration opportunities exist within the Department, College, University, and neighboring institutions. Competitive salary, startup funds, and laboratory space will be provided. Minimum qualifications are a PhD in Chemistry, Chemical Engineering, Material Science or a closely related field from an accredited institution, and relevant postdoctoral research experience. The successful candidate is expected to establish an active, externally funded research program and to demonstrate excellence in graduate and undergraduate teaching, particularly in Inorganic Chemistry related courses.

CES (**http://chemistry.njit.edu**) at NJIT is in a dynamic growth phase, with ten new hires in the past five years, and a recent ren- ovation and expansion of facilities. CES offers degree programs in Biochemistry, Chemistry, Environmental Science, Forensic Science, and Pharmaceutical Chemistry. NJIT is an R1 Doctoral University, con- veniently located in the New York metropol- itan area. With an enrollment of nearly 12 thousand students, it is continuing to build in- ternationally- recognized programs in chemical and environmental sciences.

Applicants must apply online at **http://njit.csod.com/ats/careersite/JobDetails.aspx?site=1&id=1743** and submit a letter of application, curriculum vitae, maximum five-page description of research plans, one-page description of teaching philosophy and interests, and names and contact information of at least three references. Review of applications will begin on November 1, 2019, and continue until the position is filled. Inquiries can be sent to mitra@njit.edu. Additional positions available in our Department are posted at **http://jobs.njit.edu**.

As an EEO employer, NJIT is committed to building a diverse workforce and encourages applications from individuals with disabilities, minorities, veterans, and women.

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University Lecturer – Chemistry

Department of Chemistry and Environmental Science

New Jersey Institute of Technology (NJIT) has an opening for a University Lecturer - Chemistry with both lecture and laboratory teaching capabilities in the Department of Chemistry and Environmental Science (CES). The position will start in Fall 2020, with responsibilities starting in late August 2020.

The University Lecturer - Chemistry position is a 10-month full-time non-tenure-track faculty position. The successful candidate will have capabilities in teaching general chemistry as well as one or more of the following: physical chemistry lecture and general and physical chemistry laboratories. The ideal candidate will have a PhD in Chemistry or a related field, and experience teaching col-

lege-level chemistry.

The successful candidate will be expected to:

• Teach freshman chemistry courses

• Teach physical chemistry and related courses

• Teach laboratory classes in general and physical chemistry

• Participate in Department and University service through committees and workgroups

CES (**http://chemistry.njit.edu**) at NJIT, within the College of Science and Liberal Arts, is in a dynamic growth phase, with fourteen tenured and tenure-track faculty. It has diverse teaching, and research interests and a strong commitment to the success of our approximately 170 students enrolled in the department's degree programs in Bio- chemistry, Chemistry, Environmental Science, Forensic Science, and Pharmaceu- tical Chemistry. NJIT, which is conveniently located in the New York metropolitan area, is a top-tier research university ranked 97th in the National Universities category by U.S. News & World Report Best Colleges. More than 11,000 students (about 8,000 undergraduates and 3,000 graduates) are enrolled in the University's campus in downtown Newark.

Applicants must apply online at **http://njit.csod.com/ats/careersite/JobDetails.aspx?site=1&id=1752** and submit a letter of application, curriculum vitae, comprehensive statement of teaching experience (including summary student eval- uations), and the names and contact information of at least three references. Re- view of applications will begin November 1, 2019, and continue until the position is filled. Inquiries can be sent to gilbert@njit.edu. Additional positions available in our Department are posted at **http://jobs.njit.edu**.

As an EEO employer, NJIT is committed to building a diverse workforce and encourages applications from individuals with disabilities, minorities, veterans, and women.

Wishing All Our Readers, Advertisers and Contributors the Most Happy, Productive, Successful, and Peaceful New Year Imaginable.

With Continued Hope That Our Efforts Have Produced A Publication That's Both Enjoyable and Informative, Best Wishes From The Indicator. New York and North Jersey Sections of The American Chemical Society