

THE **Indicator** ▶

DECEMBER 2019

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Dr. Cecilia Marzabadi 2020 North Jersey Section Chair



See Chair's Message on page 5.

THIS MONTH IN CHEMICAL HISTORY

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

In this column I conclude my brief look at significant events in science in 1871 as collected in "The Science Record for 1872" edited by Alfred E. Beach and published in New York by Munn and Company, Office of the "Scientific American".

James Freeman Clark of Boston has invented a precursor of the Skyview app on my smartphone – an astronomical lantern that faintly illuminates maps of the constellations so that you can carry it outside as you view the heavens. A sad note for those of us who live in urban areas like Los Angeles; it is increasingly difficult to see any of the constellations because of air and light pollution.

A safer new electrical fuse has been invented by Charles A. Brown of Massachusetts to improve simultaneous blasting at two or more sites in engineering works such as tunneling. The primer is a small amount of mercury fulminate that initiates the explosive material. Gunpowder is still being used, but is being supplanted by the hazardous but effective nitroglycerin. A Prussian inventor, Lieutenant Ditmar, has proposed a nitroglycerine modification, called dualine, which consists of nitroglycerine mixed with wood fiber. Unfortunately dualine did not turn out to be a success and the Lieutenant seems to have given up his efforts to tame the highly unstable liquid nitroglycerine. If he had extended his researches to another modifier, kieselguhr, we might now be talking about the recent award of the Ditmar Prizes for achievements in the sciences, peace, etc.

A new clothes washing shield has been developed that consists of a flexible rubberized corrugated glove that covers the arm from palm to elbow. This is because "In the rubbing of clothes by the hands, the skin is liable to be abraded from the mechanical action, which is greatly aided by the softening of the skin from the effect of the free alkali in the soap employed" (!).

The Museum of Natural History in New York has obtained, at the cost of \$600, a fine specimen of the great auk (or Gare-fowl) originally shot in Newfoundland. This splendid seabird, about the size of a goose, was already extinct in 1871 not having been seen since 1844.

Through the generosity of the late Edwin A. Stevens who left \$750,000 for this purpose a "large and splendid institution of learning" has been established at Hoboken, and is to be called "The Stevens Institute of Technology". Albert R. Leeds is the Professor of Chemistry at the Institute, whose President is the famous lecturer on physical science Henry Morton. The Institute has an impressive collection of scientific instruments, and students will enjoy hands-on exposure to these. The beginning course in chemistry will be followed by courses in qualitative and quantitative analysis.

The Science Record includes an article on the British Patent Office drawing attention to its extensive library that naturally contains "The Scientific American" (!) There are also 150 portraits of distinguished inventors and men of science (sorry; no women mentioned). Obtaining a patent was a long and expensive process. After filing for provisional protection the applicant must advertise the patent claims in "The London Gazette" for 3 weeks. If there is no objection then a duty of one hundred pounds (roughly twice the annual salary of a common working man) must be paid to initiate patent protection for a period of seven years.

Cements have been developed for sealing gutta-percha (a form of hard rubber) to fabrics and leather for waterproofing. The components are gutta-percha, soft rubber, shellac, and gum mastic together with lead oxide, mixed with turpentine and liquid styrax. This latter is a resin derived from the bush or tree that also provides gum benzoin (from which benzene is named).

One of my great scientific heroes, Michael Faraday, is profiled in this volume with a five page article including an engraved portrait. Anyone who has taken even a beginning course of general chemistry will recognize Faraday as a founding father of electrochemistry: Faraday's Laws; and the Faraday. He also in collaboration with William Whewell gave electrochemistry its vocabulary including ion; cation; anion; electrode; cathode and anode. Hats off to Michael Faraday.

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THE Indicator

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CONTENTS

Advertisers' Index	4
Call for Nominations	34
Call for Volunteers	34-35
National	28
New York Meeting	6-10
New York's Section-Wide Conference	6,12
North Jersey's Chair's Message	5
North Jersey Meetings	29
Positions Available	35-37

EDITORIAL DEADLINES

January 2020	November 28, 2019
February 2020	December 28, 2019
March 2020	January 28, 2020
April	February 28
May	March 28
June	April 28
September	July 28
October	August 28
November	September 28
December	October 28

Visit Us
www.TheIndicator.org

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Non-members are invited to read it online. Members should register their email addresses at

<https://www.acs.org/editmyprofile>.

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

December Calendar

NEW YORK SECTION

Thursday, December 5, 2019

Westchester Chemical Society

See pages 8-9.

Thursday, December 5, 2019

Long Island Subsection Holiday Dinner and
Elections

See page 9.

Wednesday, December 11, 2019

New York Society for Applied Spectroscopy

See page 10.

also

Saturday, January 18, 2020

New York Section-Wide Conference

See pages 6 and 10.

Thursdays, February 6, March 5, and

April 2, 2020

Long Island Subsection Spring Seminars

See page 10.

NORTH JERSEY SECTION

Monday, December 16, 2019

North Jersey Executive Meeting

See page 28.

also

March 22-26 and August 16-20, 2020

ACS National Meetings

See page 28.



Ad Index

Micron	10
Robertson.....	5
Rutgers - Newark	9

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

November 28, 2019

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

www.TheIndicator.org

2020 North Jersey Section Chair's Message

Greetings North Jersey Section!

It is my great honor to serve as your 2020 Chair for the Section. As a 20+ year member of the section, I have seen the changes and the challenges present in the Section. I also know a good number of the dedicated, section volunteers who work to make the NJACS one of the best sections in the US. I look forward to working with these volunteers to promote the value of the Society to our existing members and to recruit new members to our vibrant section.

Our Section has a diverse array of topical/discussion groups that hold meetings in areas such as: Organic Chemistry, NMR Spectroscopy, Mass Spectrometry, Drug Metabolism, Chromatography, Minority Chemists, Women Chemists Committee, Younger Chemists Committee, Senior Chemists Committee and Teacher Affiliates. No matter what your interest, there is a topical group for you. In addition to monthly or bimonthly meetings, these groups also hold symposia. This is in addition to the Baekeland Award Symposium held biannually and this year on November 15th, 2019. These symposia and meetings hold great benefit for the community to bring us together and to serve as an opportunity for networking and for the exchange of ideas. I invite you to attend and to get to know what the NJACS is all about.

Section members also participate in a range of outreach activities including: National Chemistry Week, Chemistry Expo, the Chemistry Olympiad and Earth Day. In the upcoming year, we strive to have greater interactions with our college chapters and chemistry clubs. Student chapters will be encouraged to participate in an Earth Day competition on sustainable, green chemistry. We also will strive to expand our activities with neighboring ACS Sections. We plan have greater outreach to the general public through Science Cafes in our local communities.

We also will reach out to some of our underserved populations in the area to increase their participation and representation in the Chemical Enterprise. Our section encompasses a region with great diversity in its population and this should be reflected in our Society. As a member of the National Women Chemists Committee, my efforts have been particularly focused on promoting and retaining women in the academic and industrial workforces. Though we have made good progress in this area, much work remains to be done. Efforts will be made in the section to make chemistry a more "inclusive science" through our interactions with underrepresented colleagues, communities and schools and through mentoring efforts such as ACS Project SEED.

I plan to continue some of the efforts of past-Chairs to improve communication with members within the section using enhanced social media channels. In addition, I encourage our members to continue to stay informed by visiting the section's website www.njacs.org and by reading the NY and NJ newsletter, the Indicator www.indicator.org, to check for upcoming meetings and events in the area. In addition, a member survey will be distributed electronically to gauge the needs of the section and to better make plans for future activities.

Thank-you for this opportunity, I look forward to working with the volunteers and members of the NJACS.

2020 Chair, Cecilia Marzabadi



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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



ACS
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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 10)

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 will soon be 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 Mrs. Marilyn Jespersen at njesper1@optonline.net or by calling the Section office at (516) 883-7510.

Dates and locations of the meetings for 2020 will be posted in the January issue of *The Indicator*, and on the New York Section website at <https://www.NewYorkACS.org>. Dr. Ruben Savitzky 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 date and location for the last meeting of 2019 was:

Friday, November 15, 2019

Adelphi University
1 South Avenue
Garden City, NY 11530

Directions

<https://visit.adelphi.edu/travel-info/directions>



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

Enabling Technology and Data for Drug Repositioning

Organizers: Pamela Hill, MS
AstraZeneca

Bobbie Ann Mount, PhD
National Center for Advancing
Translational Sciences

Sara Donnelly, PhD
The New York Academy of
Sciences

Sonya Dougal, PhD
The New York Academy of
Sciences

Keynote: Matthew Might, PhD
University of Alabama at
Birmingham

Speakers: Sean Ekins, PhD, DSc
Collaborations Pharma

Pamela Hill, MS
AstraZeneca

Alessandro Lagana, PhD
Icahn School of Medicine at
Mount Sinai

Bobbie Ann Mount, PhD
National Center for Advancing
Translational Sciences

Andrew Reaume, PhD, MBA
Melior Discovery

Clemens Scherzer, MD
Harvard Medical School

Heather Stone, MPH
US Food and Drug
Administration (FDA)

Repositioning of existing therapeutics to treat diseases beyond those originally intended has benefited a growing number of unmet patients' needs. This convening will highlight computational and big data mining approaches that are driving repositioning in diverse fields including cancer, infectious disease and neurological disorders as well rare and neglected diseases.

Date: Tuesday, December 3, 2019

Time: 8:30 AM – 4:30 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 NYAS members save
\$50 or more on this event. Please
select the appropriate non-member
Registration Category and use the
Priority Code "ACS".

For more information and to register
for the event, go to:

www.nyas.org/repositioning2019

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

WESTCHESTER CHEMICAL SOCIETY

"Pharmaceuticals in the Environment – the Chemical Basis for the Problem and Potential Solutions"

Speakers: Daniel W. Elliott, Ph.D., BCCEM
Senior Consultant
Geosyntec Consultants, Inc.
Princeton, NJ

Joseph G. Cleary, P.E., BCEE
Senior Consultant
Geosyntec Consultants, Inc.
Lyndhurst, NJ, and

Matthew R. Basso, CHMM, IHIT
Senior Consultant
Geosyntec Consultants, Inc.
Lyndhurst, NJ

Abstract: Microconstituents in process wastewaters, surface waters, and groundwater include a wide array of biologically-active pharmaceutical compounds which can exert significant deleterious environmental impacts to receptors. These emerging contaminants, known as active pharmaceutical ingredients (API) can elicit or contribute to serious environmental consequences such as anti-microbial resistance and feminization of fish. This lecture, featuring three environmental consulting practitioners that specialize in this area, will focus on the growing global concern over the pharmaceuticals in the environment (PiE) issue and delve into the chemistry which underscores the reasons that this problem has emerged as well as the strategies which may represent the solution.

Biographies:



Daniel W. Elliott received his A.B. degree in Chemistry from Vassar College, an M.S. in Environmental Science and Engineering from the University of North Carolina at Chapel Hill, and a Ph.D. in Environmental Engineering from Lehigh University. Dan is a highly

experienced environmental engineer with more than 25 years of environmental affairs experience from the diverse perspectives of industry, consulting, and a major research university. At Merck & Co., Inc., he managed the 1.5 MGD industrial wastewater pre-treatment program for the Merck Chemical Manufacturing Division (MCMD) complex in

Rahway, NJ which featured 5 full-scale API manufacturing facilities for human and animal health pharmaceuticals. He also served as Corporate Environmental Engineer for American Standard Inc., managing environmental affairs for 100 manufacturing sites around the globe. As a consultant, he works for Clients in the chemical and pharmaceuticals industries. Dan is a board-certified Environmental Engineer (BCEEM) by the American Academy of Environmental Engineering.



Joseph Cleary received his B.S. degree in Civil Engineering and his M.S.E. in Environmental Engineering from Manhattan College. Joe is a national leader regarding microconstituents in wastewater and

has more than 40 years' experience in environmental engineering consulting specializing in industrial wastewater treatment and hazardous waste remediation. He has directed projects from treatability studies, process selection and design through engineering design and construction, plus operation and maintenance services. His wastewater experience includes many major pharmaceutical, refinery, food and beverage, paper and electric and gas utility clients. He is a professional engineer in several states and is a board-certified environmental engineer (BCEE) by the American Academy of Environmental Engineers.



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 PiE issue to Geosyntec's cadre of practitioners.

Date: Thursday, December 5, 2019

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 Open 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:
(914) 606-6900

RSVP: Appreciated but not necessary.



LONG ISLAND ACS 2019 HOLIDAY DINNER

Celebrating the International Year
of the Periodic Table (IYPT 2019)

"Mendeleev and the Periodic Table"

Featured Speaker: Dr. Paris Svoronos
LIACS History
Committee Chair
Professor of Chemistry
Queensborough
Community College

Abstract The United Nations General Assembly and UNESCO have declared 2019 as the "International Year of the Periodic Table". Dmitri Mendeleev is considered to be the discoverer of the periodic trend of elements which he first declared in 1969. A historical upgrading of the table will be presented high-

lighting important element discoveries and the scientists associated with their isolation. The significance of Mendeleev's classification will be emphasized in view of the fact that many of the elements in the current table were not even known at the time.

Date: Thursday, December 5, 2019

Time: 6:00 PM to 8:00 PM

Place: Nassau Community College
CCB Building, Room 251/252
Garden City, NY

Directions: [https://www.ncc.edu/
campuservices/parkingandsafety/
mapanddirections.shtml](https://www.ncc.edu/campuservices/parkingandsafety/mapanddirections.shtml)

Our November (11/07/19) Speaker is Dr. Paul Marchese of the Queensborough Community College, who will speak on "Spatial and Temporal Variability of Nutrient Concentrations in Long Island Sound".



LONG ISLAND ACS 2020 BOARD ELECTIONS

The LIACS will hold its 2020 Board Election on **December 5, 2019** during the Holiday Dinner on December 5th, 2019 from 6 pm – 8 pm at Nassau Community College, CCB Building Rom 251/252. Nominations are open for the following positions: Chair Elect (2021), Directors-at-Large (2020-2021), and Treasurer (2020-2021).

Please email your nominations to Ping Furilan (furlanp@usmma.edu) and Terry Brack (Terry.L.Brack@hofstra.edu) by **November 17, 2019**.



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577 Main Group Metal Chemistry
Dr. Jäkle

511 Advanced Organic Chemistry
Dr. Brenner-Moyer

579 Spectroscopy in Inorganic Chemistry
Dr. Lockard

Spring 2020 Courses

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Smith Hall, Room 240

Tues. 6:00-9:00 PM
Smith Hall, Room 240

Thu. 6:00-9:00 PM
Smith Hall, Room 240

For more information, see

<https://sasn.rutgers.edu/academics-admissions/academic-departments/chemistry/ms-phd-chemistry>
or contact Ms. Sophia Bautista Chinchay at syb26@newark.rutgers.edu. Up to 2 graduate courses can be taken on a non-degree basis.



NEW YORK SECTION SOCIETY FOR APPLIED SPECTROSCOPY

New York SAS Section Announces the December 2019 meeting

Talk Title: Use of Software and Spectral Databases for Unknown Identification and Spectral Interpretation

Speaker: Gregory M. Banik, Ph.D.
General Manager
Bio-Rad Laboratories
Informatics Division

Abstract: This presentation will discuss how to use spectral databases and software to successfully identify unknown compounds from their spectra as well as how to assist in the interpretation of spectra. Examples using Raman and IR spectra will include:

- Spectral search to identify single-component compounds
- Spectral search to identify multi-component compounds (mixtures)
- Simultaneous multi-technique spectral search to provide complementary and confirmatory analysis
- Functional group analysis to build a spectral profile

- Generation of user spectral libraries to enhance spectral identification

Examples used for the talk will include how to use Bio-Rad's specialized software to correct spectra and compensate for spectral differences caused by variability in instruments, accessories, and operator error..

Author's Bio: Gregory M. Banik, Ph.D. is General Manager of Bio-Rad Laboratories' Informatics Division, where he conceived and launched the award-winning KnowItAll spectral database and software product line and introduced the spectral database subscription model to the market. Dr. Banik joined Bio-Rad from Molecular Simulations Inc. (MSI, now BIOVIA) where he was Director of Business Development. He joined MSI from UMI (now ProQuest) where he was Director of Marketing and Product Management. Prior to UMI, Dr. Banik was New Product Manager, Chemical Information Products, at Thomson Reuters' Institute for Scientific Information (ISI). He began his career with Abbott Laboratories (now AbbVie) as Scientific Information Manager in the Pharmaceutical Products Division.

Dr. Banik earned his M.S. and Ph.D. in Chemistry under the direction of Richard B. Silverman at Northwestern University and was also a Lecturer at Northwestern after receiving his Ph.D. He earned his B.A. in Chemistry and Computer Studies from Grinnell College.

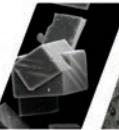
Date: Wednesday, December 11, 2019
Time: Early Arrive, Sign in 5:00 - 5:15-PM
Meeting: 5:30 – 8:00 PM
Place: Horiba Scientific (new location)
 20 Knightsbridge Road
 Piscataway, NJ 08854
Cost: \$15 (members), \$5 (students);
 RSVP for Dinner by November 19
 to debperu@outlook.com

If you cannot attend: We will live stream the presentation: RSVP for Webinar by December 1 to debperu@outlook.com and we will send you a link to the Webinar.

Directions: Take Route 287 S to Exit 8, at the traffic light go straight across the road. Horiba is second building on the right. Or take Route 287 N to Exit 8, turn right at the end of the exit ramp & go ~1/4 mile to next traffic light (Centennial Avenue). Turn right & go to next traffic light (at the southbound exit from Route 287). Turn left onto Knightsbridge Road. Or, take Route 18 North straight. It becomes Hoes Lane, then go left onto Knightsbridge. On site, park in visitor lot in front of building. Use right-hand door entrance. If doors are locked, call phone number on door.

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HUDSON-BERGEN CHEMICAL SOCIETY AND FAIRLEIGH DICKINSON UNIVERSITY CELEBRATE NATIONAL CHEMISTRY WEEK

Silicon Based Protagonists for Nanoengineering of Materials

Speaker: Dr. Bhanu P.S. Cahuhan
 Professor and Chairperson
 Department of Chemistry
 William Paterson University



Dr. Bhanu P.S. Cahuhan
Professor and Chairperson,
Department of Chemistry,
William Paterson University

THE LEADER IN GLOBAL EDUCATION



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Our meeting to celebrate National Chemistry Week was held on Thursday, October 24, 2019 on the campus of Fairleigh Dickinson University, Teaneck, NJ. The speaker was Dr. Bhanu P.S. Chauhan, Chair of Chemistry at William Paterson University. We were at capacity for the event with well over 70+ students, faculty, and interested parties.

Dr. Cahuhan received his PhD in Chemistry from Montpellier University II in Montpellier, France. Later on, he was a postdoc fellow at the National Institute of Materials and Chemical Research in Japan from 1995-97 and at North Dakota State University from 1997-2000. His research interests include New Strategies to Nanosized Functional Materials, Catalysis and Transition Metal-Heteroatom Chemistry, and Polymer and Material Chemistry of Silicon.



(Photos courtesy of Thomas J. Drwiega, Chair, Hudson-Bergen Chemical Society)

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 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 Re-

search 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 page 6.



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

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 immu-

notherapies 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 Nan-

jing 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, cancer biology, and immune engineering.

Tentative

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

Synchrotron Views of Transition Elements: Understanding Neurodegeneration and Nanostructures

Speaker: Dr. Qui 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 structure 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

Place: Queensborough Community College, Science Building, S-112
222-05 56th Avenue
Queens, NY 11364

Times: 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

Directions:

<http://www.qcc.cuny.edu/about/driving.html>

NEW YORK SECTION HONORS ITS MILESTONE MEMBERS

The New York Section Board would like to congratulate all our local members that have reached 50, 60 and 70 years of service! All members reaching this milestone in 2019 were invited to attend an awards luncheon at Trattoria Bianca Restaurant, New York City on Sunday, November 3, 2019 (A short walk from Penn Station). The awards were presented by the New York Section Chair, Justyna Widera-Kalinowska and the Member Awards Chair, Frank Romano. Attendees really enjoyed this event and were glad they were able to attend. They are looking forward to their next 10-year anniversary milestone. This event was sponsored by the New York Section and organized by Frank Romano, Member Awards Chair.

70 Year Member Anniversary

- Ms. Jules S. Glick
- Dr. Bernard Kanner
- Dr. Alvin I. Krasna
- Dr. Martin Pope
- Mr. Earl Dana York

60 Year Member Anniversary

- Dr. Marvin Saul Aronoff
- Dr. Martin F. Epstein
- Dr. Mark Green
- Mr. Norbert Gruenfeld
- Dr. Paul Haberfield
- Dr. Albert Haim
- Dr. Henry Joshua

60 Year Member Anniversary (cont'd)

- Mr. Richard William Klein
- Dr. Charles Kosky
- Dr. Neil McKelvie
- Dr. Charles E. Miller
- Dr. Mary Virginia Orna
- Dr. Theodore M. Resnick
- Dr. Yorke E. Rhodes
- Ms. Adma Antonia Ross
- Mr. Anthony Walter Schwally
- Dr. R. Srinivasan
- Mr. Alan Richard Stevenson
- Dr. Andreas A. Zavitsas
- Dr. Barry Zimmerman

(continued on next page)



Standing from left to right: Dr. Justyna Widera-Kalinowska (NYACS Chair), Mr. Mardiros Ardaches Anastasian, Dr. Thomas F. Koetzle, Mr. Richard William Klein, Dr. Mary Virginia Orna, Dr. George David Mendenhall, Mr. Frank Romano (Member Awards Chair). Sitting from left to right: Dr. Susan Band Horwitz, Dr. Barry Zimmerman, Dr. Charles E. Miller, Dr. Michael E. Green

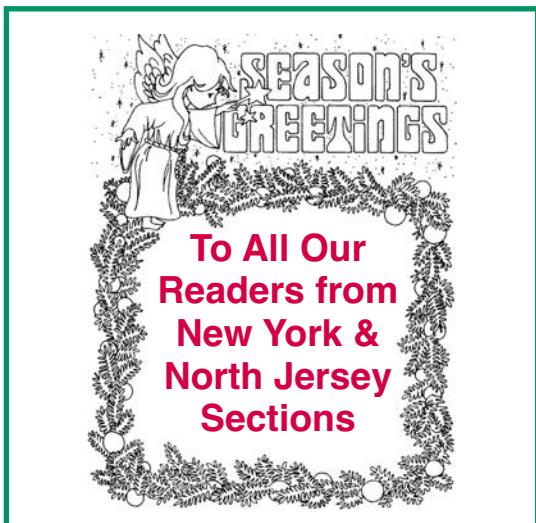
(Photos courtesy of Slawek Kalinowska)

(continued from page 15)

50 Year Member Anniversary

Dr. Mardiros Ardaches Anastasian
 Dr. Janice Vivian Arrol
 Ms. Mildred Bobrovich
 Mr. Frank Philip Cortolano
 Dr. Stanley Walter Dziedzic
 Dr. Toshiyuki Furuyama
 Dr. Gordon Malcolm Graff
 Dr. Michael E. Green

Dr. Fred M. Gretch
 Dr. Susan Band Horwitz
 Dr. Thomas F. Koetze
 Dr. Marc Samuel Lazarus
 Dr. George David Mendenhall
 Dr. Eugene J. Mitacek
 Dr. Nand K. Narain
 Dr. Richard Pizer
 Dr. Henry J. Rosenfeld
 Mr. Peter Steven Shenkin
 Dr. Andrew S. Teller



ACS NEW YORK SECTION CELEBRATES IYPT2019 WITH A GIANT 3D PERIODIC TABLE DISPLAY AT NEW YORK HALL OF SCIENCE

Article Submitted by Dr. Ping Furlan, the IYPT Committee Chair of the New York Section of the American Chemical Society.

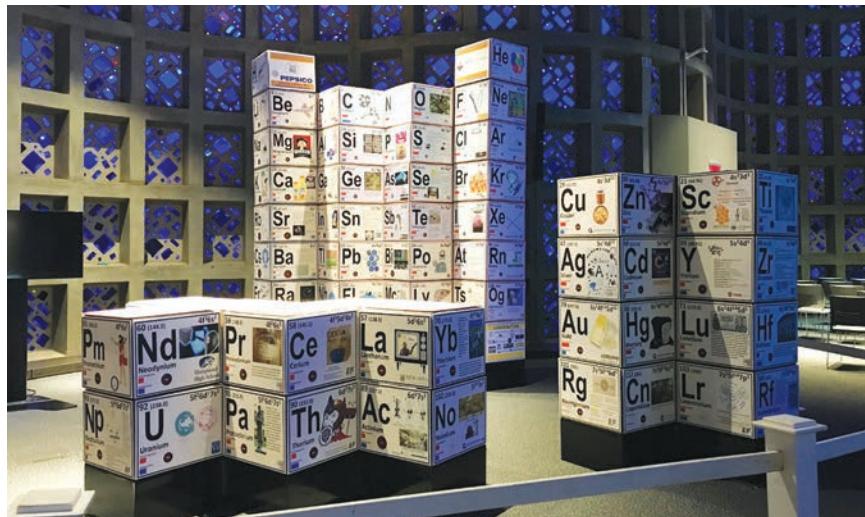
On Friday, October 18, 2019, the American Chemical Society New York Section (NYACS) unveiled a giant 3D Periodic Table at New York Hall of Science (NYSCI) – the Great Hall, as its members commemorated the 150th Birthday of Mendeleev's Periodic Table and the International Year of the Periodic Table (IYPT2019).

The Table, standing tall in all its glory, 12ftx12ftx11ft in size, reveals the hidden pattern of the universe and makes it clear for all to see how elements relate and why they do what they do. Thousands of NYACS volunteers representing 56 organizations, ranging from research labs, universities, colleges, high schools, chemical companies and business centers, participated in and contributed to the designs of the 118 elements and construction of the Table.

Through their high quality, well thought-out, aesthetic, and highly diversified original artworks, contributors tell rich and fascinating stories of their elements and how their elements' discoveries and the discovery of the periodicity helped build the modern world.

By showing their own Si and SiGe chips, the IBM scientists proudly celebrated the elements silicon (Si) and germanium (Ge), two closely related family members in Group 4A, and how these elements enabled IBM, via innovation and the use of the Periodic Law, to lead the computer revolution that has forever changed the way we live.

The Mapham High School honored the element Lithium (Li) with an exquisite painting of Arfvedson, the chemist who first discovered the element in its compound form in 1817. Looking at the Li symbol with that "Mona Lisa" smile, Arfvedson is surrounded by the many uses of lithium, ranging from drugs to batteries. The smile on his face even seemed more glorious after the recent announcement that light weight, rechargeable and high power lithium ion batteries have won their creators the 2019 Nobel Prize in Chemistry.



The giant 3D Periodic Table, designed and constructed by thousands of NYACS volunteers, representing 56 organizations ranging from research labs, universities, colleges, high schools, chemical companies and business centers, was on display till Friday, October 25, 2019 at New York Hall of Science – the Great Hall.

(Photo courtesy of Dr. Mike Melcer)



The volunteers of the NYACS Unveiling of the PT event, October 18, 2019, New York Hall of Science. From left to right: David Ingels-Thompson, Mayte Castro-Cabrera, Andrew Paine and Clarence Cheng of the United States Merchant Marine Academy.

(Photo courtesy of Captain Tony Nigro)

The element sodium (Na), claimed by their superintendent, Admiral Jack Buono, was well celebrated at the United States Merchant Marine Academy. Using information research, one-page assay, one-minute presentation, and finally the graphical representations, students learned about and shared the many modern and maritime uses of sodium. Many felt, that after the IYPT, perhaps element sodium (Na) should be "properly" renamed as "nauticalium".

Through the giant Table display, members of NYACS pay their ultimate tribute to all that the Periodic Table symbolizes: scientific discovery, innovation, human dedication and collective endeavors, and how these legacies have personally impacted who they are and what they do.

Even held on a working day, the unveiling event was well attended, especially with a large number of area high school students. The Hall was crowded with an attentive and enlightened audience who helped bring this magnificent Exhibit to public and greatly appreciated an opportunity to meet and converse with the IBM eminent scientists and technology leaders including Dr. James Wynne, the LASIK inventor, Dr. Lubomyr (Luby) Romankiw, whose magnetic thin-film storage heads enabled a giant step in increased density of storage that led to the era of personal computers, and Ms. Linda Sanford, who headed up IBM globe industries in 1990s that generated 70% IBM's revenue.

(continued on page 18)



The giant 3D Periodic Table, designed and constructed by thousands of NYACS volunteers, representing 56 organizations ranging from research labs, universities, colleges, high schools, chemical companies and business centers, and will be on display at the 58th Eastern Analytical Symposium and Exhibition, November 18-20, 2019, Princeton, New Jersey.

(Photo courtesy of Alison Hyslop, Former Chair of NYACS)

ACS NEW YORK SECTION CELEBRATES IYPT2019 WITH A GIANT 3D PERIODIC TABLE DISPLAY AT NEW YORK HALL OF SCIENCE*(continued from page 17)*

From left to right: Mr. Richard Goodman (James Bryant Conant Award Recipient), Dr. Ping Furlan (NYACS IYPT Committee Chair), Dr. James Wynne (LASIK Inventor), Mr. Joseph Wiener (NYACS IYPT Committee Co-chair), Dr. Lubomyr Romankiw (Magnetic thin-film storage inventor), Dr. Justyna Widera-Kalinowska (NYACS 2019 Chair), and Dr. Neil Jespersen (NYACS Councilor).

(Photo courtesy of Alison Hyslop, Former Chair of NYACS)



On Friday, October 18, 2019, the American Chemical Society New York Section (NYACS) unveiled a giant 3D Periodic Table at New York Hall of Science (NYSCI) – the Great Hall, as its members commemorated the 150th Birthday of Mendeleev's Periodic Table and the International Year of the Periodic Table (IYPT2019).

(Photo courtesy of Alison Hyslop, Former Chair of NYACS)

Congrats to Our Element Design Winners

Award	Winner	Element
Best colored hand-drawn original artwork	Ms. Josephine Parlagreco Mepham High School	Lithium (Li)
Best non-colored hand-drawn original artwork	Mr. Kevin Tranchina Lynbrook High School	Antimony (Sb)
Best implementation of a school logo in a design	Stephanie Dulovic & Kristen Dulovic Adelphi University	Gold (Au)
Most clever design	Mr. Brandon McMurtry Columbia University	Flerovium (Fl)
Best design using an original photograph	Kristyn Gibney & Dalton Gibney Brooklyn College, CUNY	Carbon (C)
Best pop culture reference	Amy Trang Nguyen EF Academy New York	Krypton (Kr)
Most informative submission	Vijay Kumar Siripuram & Marc Flajolet The Rockefeller University	Sulfur (S)
Most humorous submission	Student Chapter of the ACS Iona College	Iron (Fe)
Design with the best word-play	Dilavnur Atmaca EF Academy New York	Cerium (Ce)
Most imaginative design	G. Patel, M. Hashemi, & H. Khoja Jose Marti STEM Academy	Cobalt (Co)
Best use of mythological reference	Jennifer Lin & Eileen McCaffrey Pearl River High School	Promethium (Pm)
Group that impacted the most people with its element	Science & Innovation Club U.S. Merchant Marine Academy	Sodium (Na)
Coordinator that inspired the most original & impressive designs	Ms. Young Seo Michelle Moon EF Academy New York	
Most elements reserved	Dr. Fernando Commodari EF Academy New York	

(continued on page 20)

The giant 3D Periodic Table display will be on display at the 58th Eastern Analytical Symposium and Exhibition, November 18-20, 2019, in Princeton, New Jersey.

ACS NEW YORK SECTION CELEBRATES IYPT2019 WITH A GIANT 3D PERIODIC TABLE DISPLAY AT NEW YORK HALL OF SCIENCE*(continued from page 19)***Thanks to Our Element Design Contributors**

ACS-Hempstead Schools	Lynbrook High School
Adelphi University	Manhattan College
American Institute of Chemical Engineers - New York Section	Manufaktura Naukowcow
Archbishop Stepinac High School	Mattituck High School
Baruch College, CUNY	Mepham High School
Benjamin N Cardozo High School	Monsignor Scanlan High School
Brookhaven National Laboratory	New York University
Brooklyn College, CUNY	Nyack High School
ChemSource, Inc.	Oak Ridge National Laboratory
College of Mount Saint Vincent	Pace University
College of New Rochelle	Pawling High School
Columbia University	Pearl River High School
Consolidated Edison of New York	Peekskill High School
CUNY York College	PepsiCo
Dumont High School	Q Studio Lab
EF Academy New York	Queensborough Community College
Firmenich, Inc.	RMHC Poland
Garden City High School	Rye High ChemClub
Hofstra University	Saint Peter's University
IBM T.J. Watson Research Center	Sleepy Hollow High School
International High School at LaGuardia Community	St. Barnabas High School
Iona College	St. John's University
Iona Preparatory School	St. Joseph's College
Jose Marti STEM Academy	Stern College for Women-Yeshiva University
Laval University	SUNY Old Westbury
Lehman College	The Rockefeller University
Los Alamos National Laboratory	United States Merchant Marine Academy
	University of North Texas
	Vassar College

The giant 3D Periodic Table display will be on display at the 58th Eastern Analytical Symposium and Exhibition, November 18-20, 2019, in Princeton, New Jersey.



Photos courtesy of Alison Hyslop, Cindy Robson, Mike Melcer, Brian Gibney, Vijay Kumar Siripuram, Fernando Commodari and Stephani & Kristen Dulovic.

(continued on page 22)

The giant 3D Periodic Table display will be on display at the 58th Eastern Analytical Symposium and Exhibition, November 18-20, 2019, in Princeton, New Jersey.

**ACS NEW YORK SECTION CELEBRATES IYPT2019 WITH A GIANT
3D PERIODIC TABLE DISPLAY AT NEW YORK HALL OF SCIENCE**

(continued from page 21)

THANK YOU!!!

We once again extend our heartfelt thanks to our

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New York Hall of Science

Chemical Marketing & Economics (CME), NYACS

IBM T.J. Watson Research Center

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New York Section of the ACS

And 1000+ Volunteers

New York ACS International Year of the Periodic Table Committee

Ping Furlan, Paul Sideris, Joseph Wiener, Erin Thelen
Justyna Widera-Kalinowska (NYACS Chair), Paris Svoronos
Neil Jespersen, Brian Gibney, Frank Romano



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



CHEMISTRY SWEET AND PERSONAL: PERIODIC TABLE PEOPLE SCIENCE CAFÉ

Fun and history combined on Saturday, October 5, at the American Chemical Society (ACS) Science Café, “Periodic Table People,” held at Saint John’s University in Queens, NY. To celebrate the International Year of the Periodic Table (#IYPT2019), the café featured a contest in which student-teacher teams in the New York ACS Local Section were invited to research one of the seventeen persons for whom an element in the periodic table is named. Many people don’t realize that this is the most exclusive club in the world, inhabited by such personages as Albert Einstein, Marie Curie, and Nicolaus Copernicus.

In 1869, a Russian chemist, Dmitrii Mendeleev, published what came to be called the “most compact and meaningful compilation of knowledge yet devised.” (Roberts, S. “Is It Time to Upend the Periodic Table?,” *New York Times*, August 27, 2019). Now, in 2019, 150 years later, this so-called “Chemist’s Bible,” is the subject of great celebration but also the object of many questions regarding its viability in moving beyond the 118 elements yet discovered. To recognize Mendeleev’s achievement and also to call the public’s attention to the great utility of the table, the scientific community is promoting a series of celebrations throughout the world. The event in Queens was supported by the ACS International Activities Committee.

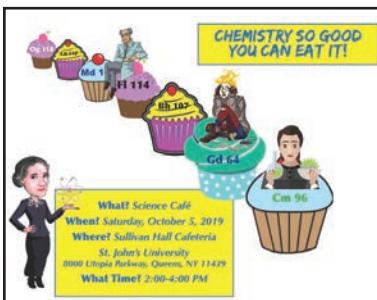


Figure 1. Excerpt from the Science Café Invitation, October 5, 2019.

(All photos courtesy of Sr. Mary Virginia Orna)

represented by idiosyncratic cupcakes arranged according to the medium-long form of the periodic table – after photographs, the students were invited to munch on their favorite element. IYPT souvenirs featured a coffee mug with images of some periodic table people: Lise Meitner, Dmitrii Mendeleev, Marie and Pierre Curie, and Yuri Oganessian (Figure 3); reference periodic tables; IYPT lapel pins donated by the ACS Education Office; periodic table lanyards; and periodic table bookbags donated by the ACS Divisions of History of Chemistry, Chemical Education and Inorganic Chemistry. The day’s proceedings were presided over by the current Chair of the 4,000-member ACS New York Local Section, Dr. Justyna Widera-Kalinowska, Associate Professor of Chemistry at Adelphi

The requirements to compete in the science café (Figure 1) were stringent. First, the teams had to research an individual (chosen from among the 17) by reading the scientific literature; they then had to write an essay based on their research and submit it to the organizers, justifying the person’s place in the periodic table; then they had to attend the event and put on a brief skit summarizing the life and work of the person chosen. Teams ranging from 6 to 13 students, using sound effects, costuming, quotations from primary sources, and sometimes great drama, competed for gift certificates allowing them to select laboratory equipment from the offerings of the Flinn Scientific Company. A group of five impartial judges selected the teams from Rye High School (Rye, NY), the Academy of Mount Saint Ursula (Bronx, NY), and New Utrecht High School (Brooklyn, NY) for the prizes.

Also featured at the café was a large Periodic Table of Cupcakes (Figure 2) confected by high school teacher Sally Mitchell and her students. All 118 elements were

(continued on page 24)



Figure 2. The Periodic Table of Cupcakes.

CHEMISTRY SWEET AND PERSONAL

(continued from page 23)

University, Garden City, NY. The Cafe was organized by Sr. Mary Virginia Orna, Ph. D. (Chemistry Department, College of New Rochelle, ret.) and Sally Mitchell (Chemistry Department, Rye High School, Rye, NY), both members of the board of directors of the Westchester Chemical Society.



Figure 3. (above) Detail of the Souvenir Coffee Mug showing Yuri Oganessian (left) and Marie and Pierre Curie (right).

Figure 4. (right)
Rye High School Team Displaying the Chemical Symbol of their Chosen Periodic Table Person, Lise Meitner (Element 109). Left to right: Sally Mitchell (advisor), Julia Quinn, Claudia Sterkaj, Brendan Quinn, Emily Huyhua, Philip Seidel, and on top of the rock: Nataly Huyhua.



Figure 5. Academy of Mount Saint Ursula Students Taking a Bow after their Skit on their Chosen Person, Marie Curie (Element 96). Left to right: Yesirah Castro, Melissa Nuñez, Savannah Colon, Angela Mas, Danielle Hernandez, Suzana Paljusevic, Kayla Peterson, Rachel Ankamah, Arly Cespedes.



Figure 6. Students from New Utrecht High School after their performance of the Life of Dmitrii Mendeleev (Element 101). Left to Right: Liang Xue Qing (teacher, advisor), Chengen Wei, Yulan Wu (front), Zehui Wu (back), Leyi Lin (front), Yuming Lin (back), Chuanting Hong, Jiajie Lin, Wenjun Fan, Jiaying Zhen, Kenneth Liang, Elena Yu Xu, Ruofei Li, Monica Cen Wu.

LONG ISLAND ACS 2019 FALL SEMINAR PROGRAM

On the evening of Thursday, October 3, 2019, a total of ninety Long Island ACS (LIACS) members and affiliates enjoyed an enriching and enlightening evening with Dr. Dimitrios Katehis of the New York City Department of Environment Protection (DEP). Starting with a clear and engaging overview of wastewater resources process, Dr. Katehis demonstrated the need for deammonification and wastewater recovery, how microbes are used to do chemical conversions and assist in removing nitrogen from wastewater, and the many opportunities that one may find to help improve the wastewater treatment processes. The presentation was very well received and there was a long waiting line after the seminar with people desiring to speak to Dr. Katehis. Dr. Katehis received a B.E. degree in Civil/Environmental Engineering from City College of New York in 1994 and a PhD from CUNY in 2002. Since his graduation and as a specialist in water resource recovery, he has developed and deployed innovative solutions that have saved water utilities hundreds of millions of dollars across the world, while increasing the sustainability of their operations. Currently serving as the Director at the NYC DEP, Dr. Katehis is leading process designs of new deammonification facilities that promises both reduced carbon footprint and treatment cost. Six members enjoyed their dinner with Dr. Desamero after the seminar at Maria's Greek Restaurant, Queens, NY. Our special thanks also go to the Queensborough Community College (QCC) Chemistry Department and the following Student Clubs for supporting the Seminar Program and for providing refreshments: STEM Academy, Chemistry Club, QCC Affiliates of the ACS, STEM Research Alliance, Student Health Club, Biology Club, STEM Research Club, and Environmental Sustainability Club.



Photos taken during Long Island ACS (LIACS) October Seminar featuring Dr. Dimitrios Katehis of the New York City Department of Environment Protection (DEP).

(Photos Courtesy of Dr. Paul Sideris)

WESTCHESTER CHEMICAL SOCIETY

On October 10, 2019 we held a Science Café at the Stone Manor Restaurant in Hawthorne, NY. The discussion leader was Dr. Toby G. Rossman, Retired Professor of Environmental Medicine at the New York University School of Medicine (NYU-Langone). Dr. Rossman led a discussion on "The Science of Aging-Extending Healthy Life." Dr. Rossman runs the monthly Hudson Valley Science Cafés in Newburgh, NY. The café was organized by the Westchester Chemical Society (WCS) Treasurer and Education Secretary, Dr. Peter Corfield.



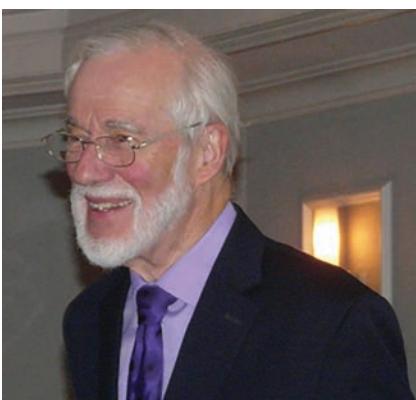
Toby Rossman speaking
(Photo courtesy of Paul Dillon)

Dr. Rossman began with a review of how much life expectancy has extended in recent years, noting the changing demographics in the US whereby the proportion of over 65 is about the same as, and soon to exceed, the proportion of young people. She reviewed the principle causes of death, in particular cancer and cardiovascular disease. She also noted that there are many deaths due to suicide, either as such or indirectly through alcohol and drug abuse. She then reviewed the approaches that can be taken to both extend life and make it healthy, with emphasis on diet and exercise. During and after the talk, there was considerable audience interest, participation and discussion.

Dr. Rossman completed her Ph.D. degree in Basic Medical Sciences (Microbiology and Biochemistry) at NYU. Her husband, his son and grandson (Gordon, Brian and Jake Bauer) attended the café as well as several members of the WCS board of directors [Dr. Peter Corfield (along with his wife, Gillian), our co-chairs, Drs. Rolande Hodel and Paul Dillon (along with his wife, Jane, and daughter, Joyce Reinecke), Joan Laredo-Liddell and Kay Whiten]. Also attending was Dr. James J. Wynne, the 2014 WCS Disting-



The Discussion Leader, Toby Rossman
(Photo courtesy of Rolande Hodel)



Peter Corfield Starting the Café
(Photo courtesy of Paul Dillon)

MERRY CHRISTMAS

guished Scientist Awardee, and his wife, Barbara,

After the café, Dr. Rossman, her husband, Dr. Corfield and his wife, and Dr. Dillon and his wife and daughter\ continued the discussion at a delicious and enjoyable dinner at the Stone Manor.

The remaining photos are of some of the attendees.



Toby Rossman's Husband, Gordon Bauer (on right) and His Son and Grandson, Brian and Jake Bauer

(Photo courtesy of Paul Dillon)



Joan Laredo-Liddell, Barbara and James Wynne

(Photo courtesy of Rolande Hodel)



National

NEW YORK SECTION – MIDDLE ATLANTIC REGIONAL MEETING 2020

Theme: “Chemistry in Focus”

Sponsored by: New York Section of the American Chemical Society

The 48th Middle Atlantic Regional Meeting (MARM 2020) of the American Chemical Society will be hosted by the New York Section and held at the Graduate Center of the City University of New York on June 12, 2020. This one-day mini-MARM will have technical symposia focused on Flavor and Fragrance Chemistry, Cosmetics Chemistry, Environmental Chemistry, Forensic Chemistry, the Chemistry of Life Sciences and Materials Chemistry. MARM2020 will also feature educational programming, career services, an exposition, a Senior Chemists' Luncheon, and an Awards Banquet. Please see the website, www.marm2020.org, for more details. Abstract submissions will open in early 2020.



A mini-MARM sponsored by
the New York Local Section of the American Chemical Society
at the Graduate Center of the City University of New York

Symposia Topics

*Flavor and Fragrance Chemistry
Cosmetic Chemistry
Environmental Chemistry
Forensic Chemistry
Chemistry of Life Sciences
Materials Chemistry*

Featuring

*Career Services
Chemagination
Exposition
Senior Chemists' Luncheon
Awards Banquet*

General Chairs: Alison Hyslop, hyslopa@stjohns.edu
Joseph Serafin, serafini@stjohns.edu
Program Chair: Brian Gibney, bgibney@gc.cuny.edu

THE GRADUATE CENTER
CITY UNIVERSITY OF NEW YORK

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, December 16, 2019

Time: 6:30 - 8:30 PM

Place: Merck-Kenilworth
2000 Galloping Hill Road, Bldg.15
Conference Room K-15-F1074
Kenilworth, NJ 07033

Members may attend through:

[JoinWebEx meeting](#)

Meeting number: 741 458 253

or:

Join by phone

+1 (443) 961-0100 US Toll

Access code: 741 458 253

For reservations please call NJACS secretary Bettyann Howson (973) 822-2575 or email chemphun@gmail.com or register online at <https://www.njacs.org> prior to Wednesday, December 11, 2019.



NORTH JERSEY ACS ELECTION RESULTS

The local section election period was September 9 - October 21, 2019. 12.1% of the membership voted. Due to a loss in overall section membership, the number of councilors for this election term was reduced from four down to two.

Congratulations to the following officers, councilors and alternate councilors.

CHAIR-ELECT (2020)

Mirlinda Biba

COUNCILORS (2020-2022)

Elizabeth (Bettyann) Howson
Sandra Keyser

ALTERNATE COUNCILORS (2020-2022)

Les McQuire

Bill Suits

The 2020 ACS National Meetings will take place March 22-26, 2020, in Philadelphia, PA, and August 16-20, 2020, in San Francisco, CA.



NORTH JERSEY NMR TOPICAL GROUP 2019 SYMPOSIUM

On Wednesday, October 23, 2019 at Princeton University in Frick Chemistry Laboratory, the North Jersey ACS NMR Topical Group hosted its 2019 NMR Symposium during the afternoon and evening hours. The event contained five afternoon talks, an evening Keynote seminar, a networking coffee break, and a catered buffet dinner. The afternoon speaker lineup included Aalim Weljie (U. Penn), John Marino (NIST), Greg Walker (Pfizer), Catherine Royer (RPI), Stephen Kadlecak (U. Penn). The Keynote address was delivered by honored guest speaker Arthur Palmer from Columbia University, with a title of "Theory, Methods and Applications for Conformational Dynamics of Macromolecules." Sixty-five attendees

took part in the events, and were very pleased with the talks and breadth of science. We thank our sponsors, guest speakers, volunteers, and audiences for making the event a great success.

The final NMR Topical Group meeting of 2019 will take place at Rutgers University on Thursday, Nov 21. A guest speaker, Christine Jorge from BMS, will speak on "Quantitative NMR of compounds dissolved in multi-component protonated solvents." The event will include a buffet dinner served at 6:00 PM followed by the guest seminar. Please see our website for additional information and to register for the event.



Honored guest speaker Professor Catherine Royer speaks at the afternoon seminar session.

(More pictures on next page)

OUTLINE

- R_{1p} Chemical Exchange.
- Identification of chemical exchange in methyl groups.
- Dimerization of cadherins.
- What the students did.

A man in a suit stands at a podium in a lecture hall, facing an audience. He is positioned in front of a large projection screen displaying the 'OUTLINE' slide.

Honored invited Speaker Professor Arthur Palmer delivers the evening Keynote Address.

(All photos courtesy of Mita Chaki)



Attendees were networking during the coffee and social break.



Wine, dinner, and networking closed out the evening of a successful 2019 NMR Symposium.

THE 25TH CHEM-EXPO, ANOTHER SUCCESSFUL CELEBRATION OF NATIONAL CHEMISTRY WEEK

By Mita Chaki

NJACS partnered with Liberty Science Center (LSC) at Jersey City, New Jersey to successfully host the 25th ChemExpo, a National Chemistry Week celebration, on Saturday, October 19th, 2019. Approximately 200 volunteers from ten local colleges, two high schools, nonprofit organizations, and industries gathered in the Jennifer Chalsty Center of LSC from 10:30 AM to 3 PM and set up a variety of hands-on activities related to the theme of "Marvelous Metals." The demonstrations were engaging for all ages and explored topics such as memory shape metals, ALON glass strength, metallic glass, penny chemistry, circuitry of metals, playful polymers, thermite, rusting of metals, gallium, iron content of cereal, luster of metals, transition metal salt crystals, use of Fenton's reagent, and much more.

The college and university chemistry chapters competed for the Sister Marian José Smith Undergraduate Public Outreach Award. Dr. Miriam Gulotta coordinated the judging event, while Judges Donovan Thompson, Debra Hazard-Sweet, Keisha Stephen, Mirlinda Biba, and Bettyann Howson evaluated the demonstrations and selected the winners.

Seton Hall University won the first place in the Sister Marian José Smith Undergraduate Public Outreach Award competition. Judge Keisha Stephen said, "They had the children make their own battery with play dough. As a result, the children learned to manipulate variables while they were having fun. I was impressed that their team was the only one with SDS material to share with me when I asked about safety."

New Jersey City University and Drew University took second and third place, respectively. These two teams developed a storyline to go with a series of activities which was great for holding participants' attention.

Bergen County Technical School won the inaugural award in the high school competition for presenting a series of four activities, Metals from food/cereals, Transition of Gallium metal, Ferrofluids/magnetism, Shape Memory metal nitinol- transition. They successfully engaged the visitors with enthusiastic scientific explanations.

Both the volunteers and visitors enjoyed the event. Clara Wu, a freshman from Academy for Allied Health Sciences said, "Volunteering at ChemExpo was an amazing experience. People from different backgrounds and places expressed strong interest in chemistry and tried to inspire their children in learning science. It really changed my perception of the scientific world."

Suzette Stephen, a Girl Scout, said that they (Suzette and other members of her troops) think that the most creative and engaging activity was "Makey-Makey", presented by the Essex County College Chemistry Club. They spent the longest time playing the videogame, piano and the guitar.

Industrial chemist Yuhua Huang said, "The experience was rewarding. I had tons of fun interacting with kids [of various ages] from toddlers to college students. It was inspiring to see that other peer scientists had put such an incredible amount of time and effort to make this event successful."

Lisa Tran, a visitor, said, "It was amazing! My six-year-old little girl, Olivia, and my three-year-old son, Bryan, loved it! We loved learning uses of metals in our daily lives. The team presenting "Learning about Metals Through Circuitry" explained their exhibit the best to our little kids. It was very engaging since it used playdough. Another great one for our little kids was making slime. I wished the event was much bigger because it really was fantastic! It's awesome seeing students ranging from high school to college and adults explain the concepts through the experiments, a great way to introduce young ones to science/chemistry."

Financial support from the NJACS and the corporate sponsor, BASF, made the event possible. The photos are courtesy of Sandra Keyser and Jayasree Sankar. In addition to the contributions of the volunteers, the event was successful due to the support of NJACS Executive Board members, retired chemists, chemistry teachers at participating schools, and representatives from various chemical companies. ChemExpo 2019 was coordinated by Monica Sekharan and Mita Chaki, with the help of committee members Miriam Gulotta and Sandra Keyser.

NORTH JERSEY SECTION AT RED BANK STREET FAIR

The North Jersey Section of the American Chemical Society (NJACS) again setup a table at the 2019 Red Bank Street Fair on Sunday, September 8. Red Bank, part of the former Monmouth County section, but now part of North Jersey. The sunny weather drew a large crowd to the fair. The well designed Chemistry activity set, organized by the Section's immediate past Chair Dr. Miriam Gulotta, attracted many children and their parents to our table. The set empowered kids to explore the nature of dyes in black marker pens demonstrating, that black ink is typically composed of a mixture of inks of different colors. Young scientists also got to pulverize dried cochineal insects using a mortar and pestle. Then they used the extracted dye as paint and found that the color of the dye changed with pH (the addition of lemon juice). The photos below show visitors in action at the NJACS table. Attending section volunteers were: Jeannette Brown, Miriam Gulotta, and Luciano Mueller. The current section chair Amjad Ali and his daughter Sara Ali (an NJACS outreach veteran) also helped out. Many thanks to Jeannette Brown for organizing the logistics.



Figure 1 - Kids monitoring the chromatographic separation of colors of a black ink drawing on a chromatography paper.



Figure 2 - Kids working with dyes they extracted from dried insects witness a change in color from blue to orange upon lowering the pH (i.e. by addition of lemon juice).



Figure 3 - Who says you can't look good and do science! Face painted ladies doing chromatography.

(Photos courtesy of Luciano Mueller and Yunpeng Zho)

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.

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 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

EMPLOYMENT OPPORTUNITIES — SETON HALL UNIVERSITY, NEW JERSEY

Careers at Seton Hall

Thank you for your interest in working with Seton Hall University. All applicants must create an online application to be considered for any open position. jobs.shu.edu



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 in Biological Chemistry, 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 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 renovation and expansion of facilities. CES offers degree programs in Biochemistry, Chemistry, Environmental Science, Forensic Science, and Pharmaceutical Chemistry. NJIT is an R1 Doctoral University, conveniently located in the New York metropolitan area. With an enrollment of nearly 12 thousand students, it is continuing to build internationally-recognized programs in chemical 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,

(continued on page 36)

POSITIONS AVAILABLE

(continued from page 31)

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 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.

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 renovation and expansion of facilities. CES offers degree programs in Biochemistry, Chemistry, Environmental Science, Forensic Science, and Pharmaceutical Chemistry. NJIT is an R1 Doctoral University, conveniently located in the New York metropolitan area. With an enrollment of nearly 12 thousand students, it is continuing to build internationally-recognized programs in chem-

ical 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.

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 college-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 Biochemistry, Chemistry, Environmental Science, Forensic Science, and Pharmaceutical 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 evaluations), and the names and contact information of at least three references. Review 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.

Principal Laboratory Technician – Chemistry

Department of Chemistry and Environmental Science

New Jersey Institute of Technology

New Jersey Institute of Technology (NJIT) has an opening for a Principal Laboratory Technician – Chemistry with technical and service capabilities in the Department of Chemistry and Environmental Science (CES). **The position will start in January 2020.**

Under the supervision of the Department of Chemistry and Environmental Science (CES) Director of Laboratories, provides instructional and instrumentation support services by performing technical work in a CES teaching undergraduate stockroom & labs (analytical, organic, inorganic, biochemistry, instrumental analysis, forensic science, and physical chemistry); orders, issues, prepares, and maintains laboratory materials, supplies, and equipment; and performs related duties as required, all in a safe and effective manner. The ideal candidate will have a

Master's degree from an accredited university in chemistry or a related field with five years or more related experience as a laboratory technician and chemistry instrumentation specialist.

Examples of duties include:

- Set up, modify, operate, service, adjust, make minor repairs to and train others in the proper use of laboratory apparatus and equipment (spectrophotometer, FTIR spectrophotometer, UV-VIS spectrophotometer, Atomic Absorption Spectrophotometer (AA), Bomb calorimeters, Gas chromatography (GC), High pressure liquid chromatography (HPLC), GC-MS, LC-MS, pH meters, conductivity meters, analytical balances, etc.)
- Sets up and prepares teaching lab class demonstrations and experiments according to lab manuals & reference materials, course outline, and without specific instructions. Inventories, orders, receives, and stocks materials, supplies, and equipment for laboratory use.

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 Biochemistry, Chemistry, Environmental Science, Forensic Science, and Pharmaceutical 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 jobs.njit.edu and submit a letter of application and resume, and the names and contact information of at least three references. Review of applications will begin immediately, 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.*