

THE Indicator

APRIL 2019

Vol. 100 • No. 4

ISSN0019-6924

Prof. Vicki H. Grassian, 2019 Nichols Medalist



See article on page 5.

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THIS MONTH IN CHEMICAL HISTORY

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

Here's a piece of publishing history you may be unaware of. A long time ago (over 30 years) I began contributing a column on history of chemistry to SCALACS, the Journal of the Southern California and San Gorgonio Sections of the ACS. (Many of those early columns are collected in a volume pretentiously titled "A Chemical Chrestomathy" that is available on-line from Amazon). Some of my columns were also published on-line by the ACS in a scrap-book feature.

A few years ago your Editor requested my permission to also publish my column in "The Indicator", the Journal of the New York and North Jersey Sections of the ACS. I have been for a while a bi-coastal essayist. The reason why I have seen fit to make this disclosure now is that a few weeks ago a colleague of mine was cleaning out his garage and came across the March 1955 issue of "The Indicator" (Vol. XXXVI No.3). I will share some of the contents of this piece of chemical history with you this month.

The cover story of this issue is the award of the 1955 William H. Nichols medal to Wendell Mitchell Latimer. Latimer was to be honored at a dinner at the Hotel New Yorker (tickets at \$8.00). Latimer was being recognized for his pioneering studies on the thermodynamics of electrolytes, especially the entropies of ions in aqueous solutions. He had a distinguished career at U.C. Berkeley, earning his Ph.D. in 1919. He became full professor in 1931; served as Dean of the College of Chemistry from 1941 – 1949; and Chair of the Department of Chemistry from 1945 – 1949. He was elected to the National Academy of Sciences and received a Presidential Certificate of Merit for contributions during World War II.

Latimer made many important contributions to chemistry. Perhaps the most important, in retrospect, is his recognition of the hydrogen bond in a paper he wrote with a colleague, W. H. Rodebush, in 1920. His over 100 publications were mostly on thermodynamics, but his diverse interests included dielectric constants; geochemistry; thermoelectricity; and radioactivity. He was the first U.S. scientist to liquefy hydrogen, and explored physical chemistry at low temperatures. He authored the influential monograph on "The Oxidation States of the Elements and their Potentials in Aqueous Solutions" published in 1938 and in a revised edition in 1952. He also co-authored a general chemistry text with Bray, and a reference book of inorganic chemistry with Hildebrand.

In the 1930s Latimer started a seminar at Berkeley on nuclear chemistry that attracted attendees including Libby, Seaborg and Wahl. During World War II from 1943 – 1947 he was a director of a Manhattan Project group working at Berkeley on the chemistry of the recently discovered plutonium in which oxidation potentials played an important role.

The Nichols medal was an appropriate additional recognition of Latimer's contributions to chemistry. Prior to 1955 the medal had been awarded to, among others, Nieuwland, Midgley, Baekeland, Seaborg, and Pauling. (Each of these scientists deserves a column – who knows?)

Sadly Latimer died only a few months after receiving this award in July 1955.

I will conclude my reportage on this interesting copy of "The Indicator" in a future column, but let me close this month with a glance at some of the advertisements. Baker and Company are offering a new booklet on platinum metal catalysts for use in manufacture of industrial chemicals and pharmaceuticals. Whatman is offering filter papers (what else?). BIOS labs. has over 5100 chemicals to offer. U.S. Stoneware has introduced Tygon tubing. Fisher scientific has a new method of packaging small quantities of reagents: the Gram-Pac. Owens-Illinois offers accurate Kimble thermometers and hydrometers. My favorite advertisement in this issue is the offer by Harshaw Scientific of a new device, the Rinco Rotating Vacuum-type Evaporator (patent applied for) at the affordable price of \$96.50 (you supply the glassware and the vacuum pump).

(See an additional story on pages 28-29.)

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EDITORIAL DEADLINES

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January 2020	November 28, 2019
February 2020	December 28, 2019
March 2020	January 28, 2020
April	February 28

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The Indicator (ISSN0019-6924) is published on-line monthly except July and August by the New York and North Jersey Sections of the American Chemical Society, Office of Publication, 139 Hudson Avenue, 1st Floor, Totowa, NJ 07512.

All views expressed are those of the editor and contributors and do not necessarily represent the official position of the New York and North Jersey Sections of the American Chemical Society unless so stated. Distributed electronically to members through the website www.TheIndicator.org. Non-members are invited to read it online. Members should register their email addresses at www.acs.org/editmyprofile.

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

April Calendar

NEW YORK SECTION

Thursday, March 28, 2019 (rescheduled)

Westchester Chemical Society
See page 16.

Thursday, April 4, 2019

Long Island Subsection
See pages 8-9.

Friday, April 12, 2019

Nichols Symposium and Dinner
See pages 6-7.

Tuesday, April 16, 2019

Biochemical Topical Group
See page 9.

Wednesday, April 24, 2019

Metro Women Chemists Committee
See page 10.

Wednesday, April 24, 2019

Westchester Chemical Society
See pages 10-11.

Thursday, April 25, 2019

Biochemical Topical Group
See pages 12.

Friday, April 26, 2019

Biochemical Topical Group
See pages 12-13.

Saturday, April 27, 2019

Chemists Celebrate Earth Week
See pages 13-15.

also

Friday, May 3, 2019

Hudson-Bergen Chemical Society
See page 17.

Friday, May 3, 2019

Long Island Subsection
19th Annual Chemistry Challenge
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Friday, May 10, 2019

Organic Topical Group
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Tuesday, June 4, 2019

New York Nanoscience Discussion Group
See page 18.

Friday, June 7, 2019

Friday, September 13, 2019

Friday, November 15, 2019

Board of Directors Meetings
See page 8.

Saturday, October 5, 2019

Science Café - The Periodic Table People
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Tuesday April 9, 2019

Wednesday April 10, 2019

Jean Dreyfus Lectureship
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Friday April 12, 2019

70th Annual Undergraduate Research
Conference
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Prof. Vicki H. Grassian, 2019 Nichols Awardee

The ACS, New York Section congratulates and extends its sincere best wishes to Distinguished Professor Vicki H. Grassian of the University of California, San Diego who will receive the William H. Nichols Medal Award on April 12, 2019 at the Crowne Plaza Hotel in White Plains, New York. The Nichols Medal is presented at an Award Dinner following the Nichols Distinguished Symposium. The title of the Distinguished Symposium is "Interfacial and Multiphase Chemistry Relevant to the Environment." Professor Grassian is being honored for "outstanding contributions to interfacial environmental chemistry."

Professor Vicki H. Grassian received her B.S. degree in Chemistry from the State University of New York at Albany. From there, she did her graduate studies at Rensselaer Polytechnic Institute (M.S., 1982) and the University of California-Berkeley (Ph.D., 1987). Following postdoctoral positions, she began her independent academic career at the University of Iowa as an Assistant Professor. At Iowa, Professor Grassian rose through the academic ranks and in 2010 was named the F. Wendell Miller Professor of Chemistry in the Department of Chemistry with appointments in the Departments of Chemical and Biochemical Engineering and Occupational and Environmental Health. She was also appointed the Founding Director of the newly formed Nanoscience and Nanotechnology Institute by the Vice President for Research, a position she held for a decade, and directed the Nanotoxicology Core of the NIEHS-funded Environmental Health Sciences Research Center in the College of Public Health. In 2013, Professor Grassian became co-Director of the Center for Aerosol Impacts on Chemistry of the Environment (CAICE), a multi-institutional NSF-Chemical Center of Innovation, headquartered at the University of California, San Diego (UC San Diego) campus. In January 2016, she joined the faculty at UC San Diego as Distinguished Professor with appointments in the Departments of Chemistry and Biochemistry, Nanoengineering and Scripps Institution of Oceanography and holds the Distinguished Chair of Physical Chemistry within the Department of Chemistry and Biochemistry. In August 2016, she was appointed Associate Dean of Physical Sciences at UC San Diego and in January 2018 became Executive Associate Dean of Physical Sciences.

Professor Grassian's research focuses on the chemistry and impacts of environmental interfaces. Her work falls under areas such as environmental molecular surface science including indoor surfaces, heterogeneous atmospheric chemistry, climate impact of atmospheric aerosols, and environmental and health aspects of nanoscience and nanotechnology. She has mentored over one hundred students in her laboratory during her career including thirty-two students who have received their PhDs under her guidance. Two of her Ph.D. students received distinguished dissertation awards. Many of her students and postdocs have gone on to develop research programs on environmental interfaces at national laboratories and academic institutions around the world.

She has given over 220 invited talks and presentations on her research including 2018 Florida State University – Hoffmann Lecture, 2017 TEDx San Diego, 2016 Indoor Air Conference Plenary Lecturer, 2015 Goldschmidt Conference Silver Anniversary Plenary Lecturer, 2012 Hascoe Distinguished Lecture at the University of Connecticut, and keynote speaker for the 2012 Dorothy Crowfoot-Hodgkin Symposium at the University of Zurich. She has published over 300 peer-reviewed publications and 16 book chapters. She has edited three books including Environmental Catalysis published by CRC press (2005) and Nanoscience and Nanotechnology: Environmental and Health Impacts published by John Wiley & Sons (2008).

Professor Grassian is the recipient of several national and international awards for her research. In 2018, she received the American Institute of Chemists Chemical Pioneer Award for her significant contributions to the area of heterogeneous atmospheric chemistry and the emerging area of the environmental and health effects of nanomaterials. In the same year, she received the ACS Award for Incorporation of Sustainability into Chemistry Education for her leadership in articulating the roles of both chemistry research and chemical education in sustainability. In 2014, she was awarded the Royal Society of Chemistry John Jeyes Award for her pioneering contributions to the chemistry of environmental interfaces, heterogeneous atmospheric chemistry and the environmental implications of nanomaterials. She also received the ACS Midwest Award in 2014 that recognizes a scientist in the midwest region who has made meritorious contributions to the advancement of pure or applied chemistry, chemical education, and the profession of chemistry. In 2012, Professor Grassian received the National ACS Award for Creative Advances in Environmental Science and Technology for her original and creative contributions in understanding mineral dust aerosol through laboratory studies and their impact on atmospheric chemistry and climate.



**2019 WILLIAM H. NICHOLS MEDAL
DISTINGUISHED SYMPOSIUM AND AWARD DINNER**



**Symposium: "INTERFACIAL AND MULTIPHASE CHEMISTRY
RELEVANT TO THE ENVIRONMENT"**

Award Recipient: DISTINGUISHED PROFESSOR VICKI H. GRASSIAN

Date: Friday, April 12, 2019

Place: Crowne Plaza Hotel, White Plains, NY



PROGRAM

1:30 PM Welcome

Professor Justyna Widera-Kalinowska
2019 Chair, ACS, New York Section
Adelphi University

1:35 PM Opening of the Distinguished Symposium

Professor Ruben M. Savitzky
2019 Chair-elect, ACS, New York Section
The Cooper Union

1:45 PM Sunlight Driven Chemistry in Aqueous Environments:
Implications for Planetary Atmospheres

Professor Veronica Vaida
Department of Chemistry
University of Colorado, Boulder

Atmospheric aerosols on the contemporary and ancient Earth provide unique chemical environments for the abiotic synthesis of biomolecules needed for life. In this presentation, results on the multiphase organic chemistry of oxoacids will be presented to highlight building molecular complexity in the natural environment.

2:30 PM Porous Nanomaterials: From Greener Synthesis to Interactions
with Environmental and Systems in the Environment

Professor Sarah C. Larsen
University of Houston

Porous nanomaterials, such as zeolites and mesoporous silica, are used for applications in catalysis, adsorption, separations and biomedicine. Greener, more sustainable methods for the synthesis of these porous nanomaterials have been developed to reduce the environmental impact of producing large quantities. After synthesis and use in applications, these nanomaterials inevitably make their way into the environment and into biological systems. However, relatively little is known about the molecular level details of the surface chemistry of zeolites and mesoporous silica when exposed to biological and environmental complexes. The insights gleaned from studies of the surface chemistry of mesoporous silica nanomaterials after exposure to natural organic matter and proteins will be presented.

3:15 PM Coffee Break

3:45 PM Pore Scale Changes in Shales after Reaction with CO₂ and Fluids

Dr. Angela Goodman
National Energy Technology Laboratory

It is becoming increasingly important to expand the fundamental understanding of geochemical interactions between CO₂, fluids, and shale. These interactions will significantly impact the processes of 1) storing CO₂ in hydraulically fractured shale formations, 2) using CO₂ as a fracturing agent, and 3) enhancing hydrocarbon recovery in shales via CO₂ flooding. In each scenario, CO₂ will be injected into shale formations where it will interact with shale surfaces (i.e. clays, organic matter), in-situ fluids (i.e. natural brines), and previously injected fracturing fluid. The reactions that occur between CO₂, fluids, and the shale may alter petrophysical properties such as porosity and permeability that may alter flow pathways potentially impacting the storage permeance of CO₂ and the effectiveness of CO₂ to behave as a fracturing agent or to mobilize hydrocarbons. In this work, we use in-situ Fourier Transform infrared spectroscopy, feature relocation scanning electron microscopy, and surface area and pore size analysis using volumetric gas sorption and density function theory methods to characterize and quantify the reactions that occur between CO₂, fluids, and shale.

4:30 PM Interfacial and Multiphase Chemistry Relevant
to the Environment

Distinguished Professor Vicki H. Grassian
Nichols Medalist
University of California, San Diego

The focus of this award talk is on environmental interfaces that are defined as any surface in equilibrium with its surrounding environment. From this broad definition, there are a myriad of different types of environmental interfaces that include atmospheric aerosols, nanomaterials and indoor surfaces. The *physical chemistry* of environmental interfaces puts an emphasis on molecular and nanoscale level interactions that occur in these inherently complex systems. Examples of the complexity of these interfaces and how a deeper understanding can be obtained through molecular-based approaches are highlighted.

MEDAL AWARD BANQUET

5:45 p.m.	Social Hour	
6:45 p.m.	Medal Award Dinner	
Presiding:		Dr. Justyna Widera-Kalinowska 2019 Chair, ACS New York Section Adelphi University
ACS Greetings:		Dr. Bonnie A. Charpentier 2019 President American Chemical Society
Introductory Address:		Dr. Sarah C. Larsen University of Houston
Presentation of the Medal:		Dr. Justyna Widera-Kalinowska
Acceptance Address:		Dr. Vicki H. Grassian Nichols Medalist

For More Information: Please visit the New York Section website at www.NewYorkACS.org

Tickets may be reserved using the following form, or through the New York Section website that accepts credit cards or Paypal. <http://www.NewYorkACS.org>.

******* RESERVATION FORM *******

2019 WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM &
MEDAL AWARD BANQUET in honor of Dr. Vicki H. Grassian

Return to: ACS, New York Section, c/o Dr. Neil D. Jespersen, Department of Chemistry,
St. John's University, 8000 Utopia Parkway, Queens, NY 11439 or fax the form to 516-883-4003

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BANQUET RESERVATION DEADLINE: April 2, 2019

Please make checks payable to: ACS, NEW YORK SECTION

Check for \$_____ enclosed.

New York Meetings

www.newyorkacs.org

ACS, NEW YORK SECTION BOARD OF DIRECTORS

MEETING DATES FOR 2019

The dates for the Board of Directors Meetings of the ACS New York Section for 2019 have been 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 are posted below and on the New York Section website at www.NewYorkACS.org. Prof. Justyna Widera-Kalinowska 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 and locations for 2019 are:

Friday, April 12, 2019 (Nichols Symposium and Dinner), Crowne Plaza, White Plains, NY)

Friday, June 7, 2019 (Board of Directors Meeting), St. Johns University, NY

Friday, September 13, 2019 (Board of Directors Meeting), Adelphi University, NY

Friday, November 15, 2019 (Board of Directors Meeting), Adelphi University, NY

More information will be posted in future monthly issues of *The Indicator* and on the New York website at <http://www.NewYorkACS.org>

St. John's University

8000 Utopia Parkway, Queens, NY

Directions

<https://www.stjohns.edu/campuses/queens-campus/directions>

Adelphi University

1 South Avenue, Garden City, NY 11530

Directions

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

LONG ISLAND SUBSECTION

Seminar Events for Spring 2019

Conformational Consequences and Structural Details of the Self-Assembly of hIAPP₂₂₋₂₉

Speaker: Dr. Ruel Desamero
The York College of CUNY

Abstract

The octapeptide NFGAILSS (hIAPP₂₂₋₂₉), derived from human islet amyloid polypeptide, has been extensively used as a model system to study amyloid formation. However, despite being the target of numerous investigations, information describing specific molecular interactions and conformational details are still lacking in regard to aggregates formed by this peptide. We synthesized peptide analogs of hIAPP₂₂₋₂₉ and employed turbidity measurements in conjunction with FTIR, Raman and fluorescence spectroscopy along with computer modeling to investigate and probe the structure of aggregates formed by the NFGAILSS sequence. Our findings unambiguously indicate that, at neutral pH, hIAPP₂₂₋₂₉ self-assembles into a parallel β -sheet secondary structure in which the aromatic ring of Phe-23 engages in π -stacking interactions. Computational modeling confirms that of the possible ring stacking motifs (sandwich, parallel displaced, parallel staggered and T-shaped geometries) only a parallel displaced stacking arrangement can account for the observed vibrational modes in the Raman spectra. The amide I vibrational mode ca. 1655 cm⁻¹ in the Raman spectra of aggregates from hIAPP₂₂₋₂₉ indicates the presence of a parallel β -sheet secondary structure. Fluorescence data also support these observations and point to the formation of excimers due to ring stacking. These observations are compared and contrasted to results obtained with amidated hIAPP₂₂₋₂₉ (SNNFGAILSS-NH₂) analogs that are only capable of forming amyloid composed of antiparallel β -sheets in which π -stacking interactions involving Phe-23 cannot occur. Consistent with this, the presence of an electron donating substituent on the aromatic ring of Phe-23 was found not to abolish the amyloidogenic potential of hIAPP₂₂₋₂₉ as it has previously been shown with hIAPP₂₂₋₂₉. Raman spectra of aggregates formed from hIAPP₂₂₋₂₉ were distinctly different from those of hIAPP₂₂₋₂₉ in the amide and ring mode vibrational regions and provide evidence of an antiparallel β -sheet structure. Finally, results from these investigations reveal that the hIAPP₂₂₋₂₉ sequence

is sensitive to its chemical environment and can undergo “conformational switching” between parallel and antiparallel β -sheets in response to changes in pH. The ramifications of the above findings are discussed in the context of other amyloidogenic systems and full-length hIAPP.

Date: Thursday, April 4, 2019

Time: 6:00 PM to 8:00 PM
(Refreshments starts at 5:30 PM)

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

Directions to QCC:

<http://www.qcc.cuny.edu/about/getting-here.html>

See flyer on page 25.



**2019 WILLIAM H. NICHOLS
MEDAL DISTINGUISHED
SYMPOSIUM AND AWARD DINNER**

See program on pages 6 and 7.

Date: Friday, April 12, 2019



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

**Microsatellite DNA Expansions in Rare
Genetic Diseases**

Organizers: Christine Bulawa, PhD
Pfizer

Aileen Healy, PhD
Pfizer

Stefan McDonough, PhD
Pfizer

Laura Ranum, PhD
University of Florida

Claire Steppan, PhD
Pfizer

Kari Fischer, PhD
The New York Academy of
Sciences

Keynote: Laura Ranum, PhD
University of Florida

Speakers: Beverly Davidson, PhD
University of Pennsylvania

Joseph Nabhan, PhD
Pfizer

Christopher Pearson, PhD
The Hospital for Sick Children,
University of Toronto

Ekaterina Rogaeva, PhD
University of Toronto

Peter Todd, MD, PhD
University of Michigan

Eric Wang, PhD
University of Florida

Vanessa Wheeler, PhD
Massachusetts General
Hospital

This event will explore recent developments in our knowledge of the biological processes driving repeat expansion diseases, as well as strategies for effective therapeutic intervention, and barriers to drug discovery.

Date: Tuesday, April 16, 2019

Time: 8:30 AM – 5:10 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”. The Early Bird
Discounted Registration **deadline**
is **March 4, 2019**.

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

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Other Details: To Be Announced



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METRO WOMEN CHEMISTS COMMITTEE

Please join us for a seminar sponsored by the NY ACS Metro Women Chemists' Committee:

Butters, Oils, Powders, and Flowers As Antimicrobial Surfaces

Speaker: Dr. JaimeLee Iolani Rizzo
Professor, Department of
Chemistry & Physical Sciences,
Pace University, NY



Abstract:

The challenge to maintain a sterile environment and protect patients in a clinical setting has grown in the recent years, due to the exposure of microorganisms. The discovery of the antimicrobial surfaces in previous research has shown a minimized growth in microorganisms such as bacteria, fungi, and viruses. Challenges still arise in creating surfaces because of the difficulty to industrialize, the non-uniformity throughout the surface, and the activity of the antimicrobial agent being washed off a given surface. Our current work not only focuses on bacteria affecting our internal makeup, but also how the mutagen, UV radiation, can alter the expression of our cells and lead to lethal health issues like cancer. In order to test against bacteria and UV radiation, a variety of natural butters are infused with an array of exotic essential oils, plant powders, and dried flowers at different concentrations. The resultant material is a homogeneous viscous surface. The novel materials have been tested against *S. aureus*, *E. coli*, and *P. aeruginosa* and against UV radiation. We herein report the formulation of these naturally-derived materials and their efficacy against bacteria and UV radiation.

About the Speaker:

Dr. JaimeLee Iolani Rizzo is Professor and Assistant Chair of Chemistry and Physical Sciences at Pace University, NYC. She received an A.S., B.A., M.A., M.Phil., and Ph.D. all through the City University of New York. Amongst other duties, she serves as the Coordinator of the Professions in Health Advisory Team (PHAT) and Faculty Advisor of the Chemistry Club at Pace. She had been named a Distinguished Fellow by the American Chemical Society in 2017 and in 2018 was honored with the Homer and

Charles Pace Faculty Award. She currently serves as Councilor for the New York Section of the ACS and was Chair of the Section in 2012.

Dr. Rizzo's work involves the synthesis and characterization of materials bearing antimicrobial activity where she has 15 patents and numerous publications and presentations relating to her work. She is also a co-author of two textbooks, "Phosphorus Chemistry" and "Organic Chemistry". Her current work relates to the development of antibacterial materials, which comprises completely naturally-based materials which include exotic butters, oils, powders, and flowers. Some of these materials have also demonstrated UV protection.

Date: Wednesday, April 24, 2019

Time: 12:10 PM – 1:10 PM

Place: Pace University
One Pace Plaza
New York, NY 10038

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



WESTCHESTER CHEMICAL SOCIETY

Distinguished Scientist Award and Student Achievement Awards Dinner

Meeting: "Contributions to the Discovery and Development of Quantum Crystallography (QCr)"

Speaker: Lou Massa, Ph.D.
Professor
Departments of Chemistry and
Physics (Ph.D. Programs)
Hunter College and the
Graduate School
The City University of New York

DISTINGUISHED SCIENTIST 2019:

Dr. Lou Massa for "Contributions to the Discovery & Development of Quantum Crystallography (QCr)"



Abstract: X-ray crystallography delivers geometries and electron densities of molecules in the crystalline phase. Of course, that is a tremendous result. That's why crystallography underlies more

science Nobel Prizes than any other subfield of science. As the field progressed, there came ever increasing accuracy of X-ray atomic positions with ever increasing speed. More recently, crystallography gave us bonding non-spherical, but still classical, electron densities attached to atomic positions. There followed the work of Huang, Massa, & Karle, evolving from the work of Massa, & Clinton, suggesting a true quantum mechanical formalism of crystallographic X-ray scattering, i.e., Quantum Crystallography (QCr). That is an emerging line of research aimed at solving the crystallographic problem under the constraints of quantum mechanics. In this way, all quantum properties can be extracted from the crystallography. At first QCr was of course limited to smaller systems, but when combined with a fragmentation technique, called the “kernel energy method (KEM)”, QCr’s reach to larger molecules can be extended to molecules of almost “any size”. At present QCr is evolving widely with many scientists developing their own formalisms and applications, which are activities much to be desired.

Biography: Professor Lou Massa is a Faculty Member at Hunter College and a member of the Chemistry and Physics programs of the CUNY Graduate Center. His education was carried out at Lemoyne College, Clarkson University, and Georgetown University. His Postdoctoral appointment occurred at Brookhaven National Laboratory. He has published in excess of 200 peer-reviewed scientific articles including prestigious and major scientific journals such as *Physical Review Letters*, the *Proceedings of the National Academy of Sciences*, et cetera, and has served as an editorial board member for the scientific journal “*Structural Chemistry*” (STUC) and as Science & Technology Editor for City University of New York Television (CUNY-TV). He hosted for a decade the science TV program called *Science & the Written Word*, and his Oxford University Press book of that same name is based on interviews of scientists featured on the TV

program. He has been an influential and honorable Scientific Adviser and Organizing Committee Member for several major international scientific conferences around the Western world. His scientific contributions and those of his students at Hunter College and the Graduate Center, CUNY, in the field of Quantum Crystallography have been honored during recent international meetings devoted to that field, now one of rapidly rising influence. He has worked with Jerome Karle, William Lipscomb, and Ada Yonath in applications of quantum mechanics to scientific problems of quite wide interest. He is a member of long standing in several scientific societies, including the American Chemical Society, the American Physical Society and the American Crystallographic Association.

Date: Wednesday, April 24, 2019

Times: Social Hour - 5:00 PM

Lecture and Awards - 6:00 PM

Dinner - 7:00 PM

Place: Pace University

The Stephan Friedman Room,
Wilcox Hall

861 Bedford Road – Entrance #1
Pleasantville, NY 10570

Cost: \$30.00; Students - \$20.00

RSVP Required to Dr. Peter Corfield

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

Phone – 1-914-762-4468, or

Text – 1-914-980-9128, or 914-218-7607.

For more information, contact Paul Dillon:

E-Mail PaulWDillon2@hotmail.com

Phone – 1-914-393-6940

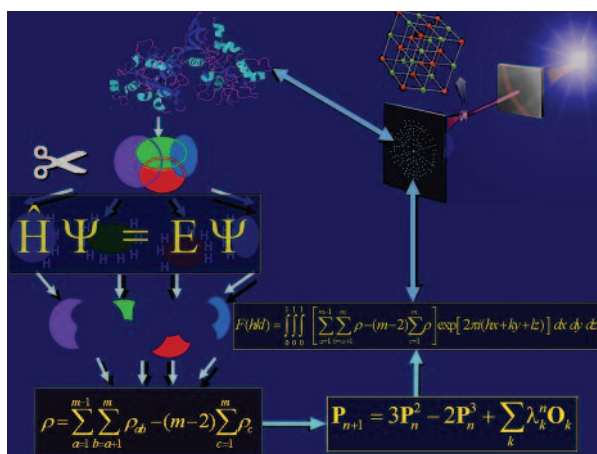


Figure 1. Sketch of Quantum Crystallography, experiment & related mathematics.

(Picture courtesy of Professor Cherif Matta)

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

Translating Genetics into Medicine

- Organizers:** Judy Cho, MD
Icahn School of Medicine at Mount Sinai
- Caroline Fox, MD
Merck Research Labs
- Paolo Guarnieri, MD
Boehringer Ingelheim
- Julie Hawkins, PhD
Boehringer Ingelheim
- Tuuli Lappalainen, PhD
Columbia University,
The New York Genome Center
- Alan Shuldiner, MD
Regeneron Pharmaceuticals,
The University of Maryland
- Dawn Waterworth, PhD
GlaxoSmithKline
- Alison Carley, PhD
The New York Academy of Sciences
- Sonya Dougal, PhD
The New York Academy of Sciences
- Keynotes:** Richard P. Lifton, MD, PhD
The Rockefeller University
- Robert Plenge, MD, PhD
Celgene
- Speakers:** Christopher Brown, PhD
University of Pennsylvania
- Molly Gasperini
University of Washington
- Rajat Gupta, MD
Broad Institute, Massachusetts General Hospital,
Harvard Medical School
- Ruth Loos, PhD
Icahn School of Medicine at Mount Sinai
- Matthew Nelson, PhD, MA
GlaxoSmithKline
- Daniel J. Rader, MD
Perelman School of Medicine,
University of Pennsylvania
- Timothy E. Reddy, PhD
Duke University

This symposium will highlight emerging strategies to experimentally and computationally identify and validate causal genetic associations, and will outline the challenges and opportunities in translating these associations into successful drug discovery programs.

- Date:** Thursday, April 25, 2019
Time: 8:30 AM – 5:00 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 NYAS members save \$50 or more on this event. Please select the appropriate non-member Registration Category and use the Priority Code “ACS”. The Early Bird Discounted Registration **deadline is March 14, 2019. The Abstract Submission deadline is February 28, 2019.**

For more information and to register for the event, go to: www.nyas.org/GenMed2019

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



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

Severe Asthma: Novel Concepts & Therapeutics

- Organizers:** David Artis, PhD
Weill Cornell Medicine
- Roland Kolbeck, PhD
MedImmune
- Jamie Orengo, PhD
Regeneron
- Matthew Sleeman, PhD
Regeneron
- Sonya Dougal, PhD
The New York Academy of Sciences
- Marie Samanovic-Golden
The New York Academy of Sciences
- Keynotes:** Bart N. Lambrecht, MD, PhD
Ghent University

Sally Wenzel, MD
University of Pittsburgh
Asthma Institute

Speakers: David Artis, PhD
Weill Cornell Medicine

Kathleen Barnes, PhD
University of Colorado
School of Medicine

Alison Humbles, PhD
MedImmune

Melanie Konigshoff, MD, PhD
University of Colorado Denver

James Martin, MD
McGill University

Kari Nadeau, MD, PhD
Stanford University School
of Medicine

Jamie Orenge, PhD
Regeneron

Xin Sun, PhD
University of California
San Diego

This symposium will focus on novel insights into the pathophysiology of severe asthma and offer perspectives on potential new therapeutic opportunities.

Date: Friday, April 26, 2019

Time: 8:30 AM – 5:00 PM
(reception to follow)

Place: 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”. The Early Bird Discounted Registration **deadline is March 15, 2019. The Abstract Submission Deadline is February 26, 2019.**

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

www.nyas.org/SevereAsthma2019

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

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

COME AND JOIN US CELEBRATE EARTH WEEK WITH OUR 8th ANNUAL “WALK THE BROOKLYN BRIDGE” EVENT



This year's Chemists Celebrate Earth Week's theme is: “Take Note: The Chemistry of Paper”

We will meet at Pace University in the Bianco Room at 11:00 AM for check-in followed by welcoming remarks, our keynote address, and our celebratory “Earth Day Parade” across the iconic Brooklyn Bridge! Participants will be provided with lunch and Earth Day gifts. The event is free and open to all, but **EVERYONE must register by April 11**. Past the registration deadline there will be a \$15 onsite fee at the event (cash only). To register:

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

Date: Saturday, April 27, 2019

Time: 11:00 AM – 3:00 PM

Place: Pace University
Bianco Room

Cost: Free and open to all. However, past the registration deadline, there will be a \$15 onsite fee at the event (cash only)

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

For more information about Earth Day celebrations, see pages 14 and 15.



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.



Chemists Celebrate Earth Week (CCEW) 2019

“Take Note: The Chemistry of Paper”

Illustrated Poem Contest

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

Contest Deadline: April 5, 2019

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

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

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

Write and illustrate a poem using the CCEW theme, “**The Note: The Chemistry of Paper.**” Your poem must be **no more** than 40 words and in the following styles to be considered:

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

Possible topics related to paper chemistry include:

pulp, tree, recycling

Entries will be judged based upon:

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



Contest Rules:

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



**2019 CCEW Illustrated Poem Contest
Take Note: The Chemistry of Paper
ENTRY FORM**

Please fill out this form, print, and attach to the back of the poems. All fields are required. Incomplete forms will invalidate the entry.

The deadline for the Local Section Contest is .

Student and Organization Information			
Student Name:			
Grade:			
Parent/Guardian Name:		Parent/Guardian Email:	
Parent Address:			
City:		State:	Zip:
School or sponsoring group: <i>(e.g. Boys and Girls Club or Scout Troop, 4-H, etc.)</i>			
Teacher Name:		Teacher Email:	
School Address:			
Address Line 2:			
City:		State:	Zip:
Please send any follow up for the student to the school <input type="checkbox"/> or parent <input type="checkbox"/> address.			
Judging Category by Grade (Check one)			
K-2 <input type="checkbox"/>	3-5 <input type="checkbox"/>	6-8 <input type="checkbox"/>	9-12 <input type="checkbox"/>
FOR LOCAL SECTION USE ONLY			
Local Section Name:			
CCEW Coordinator Name:			

WESTCHESTER CHEMICAL SOCIETY

Dr. Gerard Parkin's talk "Tripodal Ligands in Bioinorganic and Organometallic Chemistry: Carbon Dioxide Functionalization and Mercury Detoxification" that had been scheduled for February 12, 2019 had to be cancelled because of snow. It should be rescheduled. When this occurs, a notice will be published.



WESTCHESTER CHEMICAL SOCIETY

Note that this talk had originally been scheduled for November 15, 2018 but had to be rescheduled because of inclement weather.

Special Seminar – "Chemistry in Cameroon: Quality Control of Drugs"

Speaker: Rolande Hodel, Ph.D.
Adjunct Lecturer
Department of Chemistry
Westchester Community College
Valhalla, NY
Founder and President of
AIDSfreeAFRICA
Ossining, NY 10562
RRHodel@aol.com



Abstract:

AIDSfreeAFRICA's mission is to implement and advance pharmaceutical drug production in Sub-Saharan Africa. Although AIDSfreeAFRICA has been working in Cameroon since 2005, the organization

has only recently decided to tackle the problems that arise because of the general lack of basic laboratory services in the African nation.

AIDSfreeAFRICA is often approached and asked to take samples of pharmaceutical drugs to the USA and test them for their composition and/or quality. The import of pharmaceuticals in Cameroon is largely unregulated. Much of the imported drugs are brought into the country from Nigeria by salespeople who buy and sell drugs with little regard for the origin of the drugs. Additionally, the salespeople are not educated on how to transport or store drugs properly. We suspect that the main problem with

drug quality in Cameroon is degradation due to heat and humidity rather than the counterfeit drugs. However, without the ability to quality control drugs on a large scale, it is hard to say.

In this talk Dr. Hodel will discuss the efforts underway to bring quality control to Cameroon.

Dr. Rolande Hodel, co-chair of the Westchester Chemical Society, was born in Germany, is a US citizen, and is a legal resident of Cameroon. She received an M.S. in Inorganic Chemistry from the University of Kansas; and a Ph.D. in Organic Chemistry from the City University of New York. She has worked for companies such as BASF/Germany, Nanocrystals Technology/NY, Pharmaceutical Discovery Corporation/NY (today Mannkind/CT) and Emisphere Technologies/NY. She founded and is President of a non-profit, AIDSfreeAFRICA that manufactures pharmaceuticals in Cameroon. This talk is based on her more recent work in Cameroon. She is also an Adjunct Lecturer in Chemistry at the Westchester Community College. She is active in the American Chemical Society and its sections and has won various humanitarian awards. She is active in Rotary, Landmark Education, loves ballroom dancing, hikes, swims, skis and does yoga.

Date: Thursday, March 28, 2019

Times: Refreshments: 5:30 PM

Lecture: 6:00 PM

Place: Westchester Community College
75 Grasslands Road
Gateway Building, Room 110
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.

Deadline for items to be included in the May 2019 issue of *The Indicator* is

March 28, 2019

HUDSON-BERGEN CHEMICAL SOCIETY, THE SIGMA XI CHAPTER AND THE SCHOOL OF NATURAL SCIENCES OF FAIRLEIGH DICKINSON UNIVERSITY

The 21st Annual Undergraduate Research Symposium

This is a forum for students and their faculty mentors from colleges and universities that participate in the subsection's activities to present the results of their research. Outstanding graduating students are also being recognized (they receive the Hudson-Bergen Chemical Society Award consisting of a certificate and a book). All the presenters will receive certificates. Students who wish to present posters must send an abstract via e-mail to mleonida@fdi.edu, by April 12, 2019. The abstract should be in MS Word format and must include the names and addresses of the student(s) and their faculty adviser(s) in addition to the title of the abstract. The abstract should not exceed 200 words. The name of the student presenting the poster should be underlined. The posters have to be self-supported. There is no registration fee.

This year's symposium also features the lecture:

Portable Biosensing Devices for Food Quality Monitoring

Speaker: Silvana Andreescu
Department of Chemistry and Biomolecular Science
Clarkson University



Abstract: The growing interest in food quality and safety requires the development of sensitive and reliable methods of analysis as well as technology for the preservation of freshness and quality of food. Portable and inexpensive biosensing devices show potential for addressing the need for rapid on-site measurements. A key issue in the development of these devices is creating suitable surface chemistry with recognition capabilities for the selective binding of target analytes. This presentation will discuss development, manufacturing, analytical characterization and deployment of portable biosensors incorporating receptor molecules and a smart redox active interface for monitoring active and functional ingredients in food, and their possible implementation in smart packaging. To fabricate the sensors, we use nanoparticles that have tunable redox activity, optical

and catalytic properties and can transduce and catalytically amplify signals in chemical and biological detection schemes involving biomolecules. Examples of sensors that utilize printable paper as a functional (bio)sensing platform, modification of paper and procedures enabling roll-to-roll fabrication will be discussed. A unique feature of these devices is the built-in detection mechanism with all the sensing components needed for analysis fixed onto the sensing platform, functioning as a fully integrated reagentless biosensing device. The sensors have been interfaced with portable databases and user-friendly signal transduction methods, and have demonstrated excellent performance when used in the field. Several prototypes designed for food freshness, safety and quality monitoring will be discussed, with examples of applications.

Biography: Silvana Andreescu is the Egon Matijević Chair in Chemistry and Professor of Bioanalytical Chemistry in the Department of Chemistry and Biomolecular Science at Clarkson University in Potsdam, NY. She has received a PhD in Chemistry, specializing in biosensors from the University of Perpignan, France, and University of Bucharest, Romania in 2002, and has been a member of the Clarkson faculty since 2005. Between 2003 and 2005 she was a NSF-NATO postdoctoral fellow at the State University of New York at Binghamton. Her research interests are in analytical and bioanalytical chemistry, nanotechnology, environmental nanotechnology and development of practical biosensors for clinical and environmental monitoring. Recent work involves the use of nano-impact methods to characterize surface properties and reactivity of nanoparticles for environmental and health safety assessment and sensing applications. She is the recipient of a French Government Graduate Fellowship, a NATO-NSF Postdoctoral Fellowship, the NSF-CAREER award, the John W. Graham Faculty Research Award, the Research Excellence Award and a Member of the Million Dollars Club at Clarkson University.

Date: Friday, May 3, 2019

Times: Poster Session - 5:00 PM

Dinner - 6:00 PM

Awards and Lecture - 7:00 PM

Place: Riverside Café

Fairleigh Dickinson University
Teaneck, NJ 07666

Cost: \$10.00 for dinner (dinner cost for presenters will be waived).

Reservations: Dr. Mihaela Leonida (201) 692-2338, e-mail: mleonida@fdi.edu
by April 20, 2019.

LONG ISLAND SUBSECTION

The 19th Annual Chemistry Challenge

Date: Friday, May 3, 2019

For more information, see flyer on page 20.



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

Chemical Biology Discussion Group Year-End Symposium

Organizers: Jason Imbriglio, PhD
Merck
Sara Donnelly, PhD
The New York Academy of
Sciences
Sonya Dougal, PhD
The New York Academy of
Sciences

Speakers: Emma R. Parmee, PhD
Merck

David Spiegel, MD, PhD
Yale University

The Chemical Biology Discussion Group brings together chemists and biologists interested in discussing the latest breakthroughs. This year, the annual year-end meeting features keynote speakers Dr Emma Parmee, Merck and Dr. David Spiegel, Yale University.

Date: Wednesday, May 22, 2019

Time: 1:00 – 5:30 PM

Place: The New York Academy of
Sciences
7 World Trade Center
250 Greenwich Street – 40th Floor
New York, NY 10007

Cost: For full details on pricing, please visit www.nyas.org/ChemBio2019. ACS members may use the Priority Code ACS to avail of NYAS member pricing.

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

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

NEW YORK NANOSCIENCE DISCUSSION GROUP

*Hosted by the New York University
Department of Chemistry*

Speakers to be announced

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

Date: Tuesday, June 4, 2019

Times: Refreshments at 7:00 PM
Science at 7:30 PM

Place: NYU Silver Center
31 Washington Place, between
Washington Square East and
Greene Street, Room 1003
(10th floor)
New York, NY

For more information, contact: James
Canary (james.canary@nyu.edu)

Topical Group History: <http://www.nyu.edu/projects/nanoscience>



NEW YORK SECTION – SCIENCE CAFÉ – “THE PERIODIC TABLE PEOPLE”

FUTURE EVENTS

A Science Café and Contest Celebrating the International Year of the Periodic Table

This is an early notice of a Science Café and contest being held for the NY Section of the American Chemical Society to celebrate the International Year of the Periodic Table. It is being organized by Sally Mitchell and Sr. Mary Virginia Orna, Ph.D., both board members of the Westchester Chemical Society (a local sub-section of NYACS), using grant money from the ACS.

Periodic Table People: An Invitational Essay/Interactive Skit Contest from the American Chemical Society New York Section in a Gala Celebration of the International Year of the Periodic Table

Come One! Come All! Fun, eats, contest, grand prizes, skits, for all levels of chemistry, for teams of faculty members and students. And assemble a Cupcake Periodic Table –

chemistry so good you can eat it!

What? Science Café

Date: Saturday, October 5, 2019

Time: 2:00 PM

Place: TBA

Students at any level of chemistry instruction are invited to submit a faculty-student-team-researched-and-written brief essay (1,000 words or less) describing a personality in the Periodic Table (see list below). The essay should contain biographical information, the contribution of this person to science, and a justification for his/her place in the table. At least two supporting scholarly references (not taken from the internet) should accompany the essay; they will not figure in the word count. The competing teams will perform a 5-minute (or less) skit based on the essay at the NY Section Science Café. Essays/skits will be judged on the depth and clarity of science covered, the quality of research, and historic content as evidenced in the skit. Winning teams will receive one of three Grand Prizes for their schools: a voucher for supplies selected from the Flinn Catalog (1st prize - \$300; 2nd prize - \$200; 3rd prize - \$100). **By September 10**, submit your team's (3 persons minimum, including your faculty member) intent to participate along with your preferred five Periodic Persons to chemsource.info@gmail.com; you will receive your designated "person" by return email, on a first-come first served basis to avoid duplicates. **Before September 30, 2019**, please submit your essay and skit outline along with a captioned photograph of your team to the same email address. Please include the name and location of your institution and contact information. Essay entries and skit outlines will be judged and admitted for performance at the Science Café **by October 1**. Winners will be judged and announced at the American Chemical Society New York Section Science Café on October 5, 2019. Location: TBA Time: 2:00 PM. Refreshments, team prizes, camaraderie!! Come one, come all! To be eligible for one of the grand prizes, you **MUST** present your skit at the Science Café. Essays submitted by email only without a skit will be eligible for a Periodic Table-related prize only.

Periodic Table People (choose your top five and submit to chemsource.info@gmail.com with name of team leader, institution, and email address):

At. No.	Person
62	Vassili Samarsky-Bykhovets
64	Johan Gadolin
96	Marie Curie

96	Pierre Curie
99	Albert Einstein
100	Enrico Fermi
101	Dmitri Mendeleev
102	Alfred Nobel
103	Ernest O. Lawrence
104	Ernest Rutherford
106	Glenn Seaborg
107	Niels Bohr
109	Lise Meitner
111	Wilhelm Roentgen
112	Nicolaus Copernicus
114	Georgy Flerov
118	Yuri Organesson

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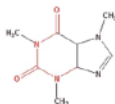
For more information and application, visit:

science.iit.edu/acsNYNJ



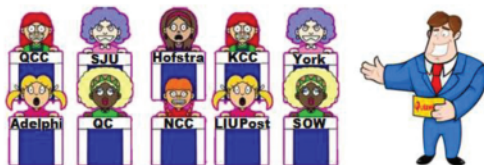
**The Long Island Subsection
Of the New York American Chemical Society**

Proudly Sponsors



**THE 19TH ANNUAL
CHEMISTRY CHALLENGE**

18
Ar
Argon
39.948



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

When: Friday, May 3, 2019

Where: Queensborough Community College, Science Building Rm S-112

Time: 5 – 6 pm – Social with Food; 6 – ~8 pm - Chemistry Challenge

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

Registration: <https://tiny.cc/lz0n3y>

Contact: Dr. Daniel Resch (daniel.resch@ncc.edu)

Cost: Free (before 4/26), \$10 / team (after 4/26) – Checks should be made out to "NYACS Long Island Subsection" and sent to Dr. Philip Mark [Nassau Community College, 1 Education Dr, Garden City NY 11530]

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

All Are Welcome



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

ACS, NEW YORK SECTION'S 2019 SECTIONWIDE CONFERENCE CUNY – QUEENSBOROUGH COMMUNITY COLLEGE, BAYSIDE, NY

The New York Section's Annual Sectionwide Conference was held on January 19th at CUNY's Queensborough Community College's Oakland Lounge in Bayside, NY. The conference was an excellent opportunity to meet with colleagues and ACS friends after another successful year. Members enjoyed a welcome breakfast at the start. The conference also included award presentations, an outstanding keynote address, poster displays by New York Section SEED students, introductions of the 2019 election candidates, planning sessions for the Section's 2019 activities and a luncheon at a nearby restaurant. Prof. Justyna Widera-Kalinowska, New York Section Chair for 2019, welcomed everyone and acknowledged the outstanding service of the Section's volunteers during 2018. Queensborough's Interim President, Dr. Timothy Lynch, and Assistant Dean for Academics in the Office of Institutional Effectiveness, Dr. Michael Pullin, attended and congratulated the ACS, New York Section for its many successes and outreach activities.

At the award ceremony, Prof. Joseph Serafin received the ACS past chair pin and an engraved ACS plaque for his excellent and dedicated service as Chair of the New York Section in 2018. The 2018 Outstanding Service Award was awarded to Prof. Paul Sideris who has chaired the Long Island Subsection, co-chaired the Undergraduate Research Symposium and served on the MARM Co-ordinating Committee. The Section presented the Nichols Foundation High School Chemistry Teacher Award for 2018 to Dr. Stephanie O'Brien of Commack High School. Stephen Radice, Chair of the Nichols Teacher Jury, described Dr. O'Brien's outstanding teaching skills and achievements.

A number of Salute to Excellence Awards were given for top-notch volunteerism over the past years: Mr. Thomas Franke for excellent leadership of the Biochemical Topical

(continued on page 22)



Dr. Justyna Widera-Kalinowska presented the outgoing NY Section Chair, Dr. Joseph Serafin, with his past chair ACS pin and plaque, and thanked him for his outstanding leadership in 2018.



Dr. Thomas Murphy, interim President of QCC, welcomed the attendees and acknowledged the excellent activities of the New York Section.



Some attendees at the 2019 NY Section Sectionwide Conference held at Queensborough Community College on January 19, 2019.

ACS, NEW YORK SECTION'S 2019 SECTIONWIDE CONFERENCE

(continued from page 21)

Discussion Group in coordination with New York Academy of Sciences; Mrs. Nadia Makar for her tremendous work co-ordinating and supporting the Project SEED program for the Section; Mr. Stephen Radice for outstanding work as chair of the Nichols Foundation Teacher Award Jury, The United States Merchant Academy in Kings Point for their successful outreach chemistry programs for k-12; and Mrs. Marilyn Jespersen for 26 years of excellent service as the NY ACS office secretary.

Following the award ceremony, Prof. Ruben Savizky, 2019 New York Section Chair-elect, presented the names of the candidates for the upcoming 2019 elections and introduced the candidates who were present.

Momoma Rossol, M.S., M.F.A, Industrial Hygenist, President: Arts, Crafts and Theatre Safety, Inc. spoke on "Chemical Safety Issues in the Film Industry." The program began with an interesting video showing how pyrotechnic chemicals are used to simulate bullets hitting walls or people, and, then, she discussed other chemical issues in the entertainment industry.

The annual planning session for the subsections, topical groups, and committees of the New York Section was held during the last hour of the conference, to discuss goals and activities



Dr. Paul Sideris was presented with the New York Section's 2018 Outstanding Service Award for his dedicated work with MARM, the Long Island Subsection and the Undergraduate Research Symposium.



Project SEED students accepted the Salutes to Excellence Award for Mrs. Nadia Makar, who was given the award for successfully coordinating the Project SEED program for the New York Section for many years.



Dr. Ruben Savizky, 2019 Chair-Elect of the New York Section, presented the candidates for office for the 2019 Section elections.



Chair Dr. Widera-Kalinowska presented a Salute to Excellence Award to Mr. Stephan Radice for his excellent work chairing the Nichols Foundation High School Teacher Award Jury.

for 2019. After the meeting, guests enjoyed lunch together at Maria's Mediterranean Restaurant in Bayside, NY.

(All photos courtesy of Dr. Brian Gibney)



Dr. Michael Pullin, Assistant Dean for Academics in the Office of Institutional Effectiveness, also greeted the guests at the Sectionwide Conference.



The United States Merchant Marine Academy received a Salutes to Excellence Award for its much appreciated outreach chemistry programs for students in K-12. Accepting the award from Dr. Widera-Kalinowska is Dr. Ping Furlan.



Keynote Speaker, Momona Rossol, M.S. M.F.A. gave an entertaining and enlightening talk on "Chemical Safety Issues in the Film Industry."



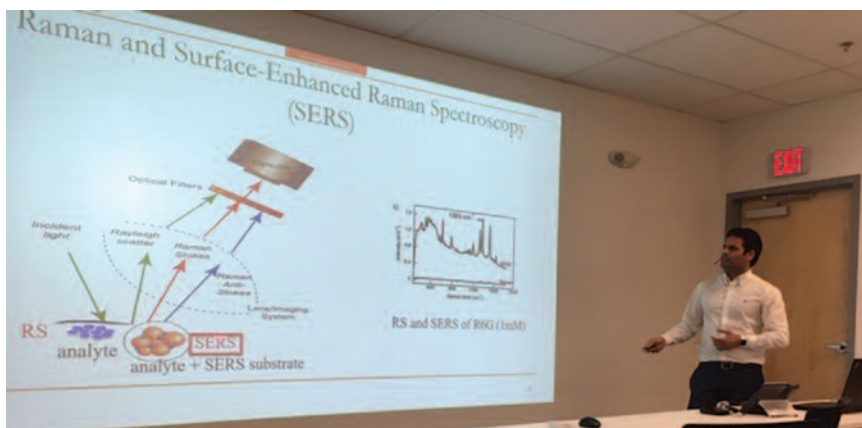
Dr. Stephanie O'Brien, who teaches at Commack High School, received the 2018 Nichols Foundation Chemistry Teacher Award for outstanding teaching of high school chemistry and for inspiring chemistry students. It was presented to Dr. O'Brien by Mr. Stephen Radice and Chair Dr. Widera-Kalinowska.

NEW YORK (NEW JERSEY) REGIONAL SECTION OF THE SOCIETY FOR APPLIED SPECTROSCOPY (NYSAS)

Raman and Surface-Enhanced Raman Spectroscopy (SERS): *In Situ* Nano-sensors and Nano-medicine.

By Debbie Peru

The February 2019 meeting of the New York (New Jersey) Regional Section of the Society for Applied Spectroscopy (NYSAS) was held on February 21st at the Horiba Optical Spectroscopy center in Piscataway, NJ. The guest speaker was Dr. Vinay Bhardwaj, a Research Scientist at the Piscataway Global Technology Center of Colgate-Palmolive, and an Adjunct Professor of Biomedical Engineering at The College of New Jersey.



Vinay describing surface enhanced Raman Spectroscopy during NYSAS Dinner & Networking meeting

Dr. Vinay Bhardwaj received his PhD in Biomedical Engineering from Florida International University (FIU) in Miami, FL. His PhD research was sponsored by US Dept. of Defense on the topic "SERS-Linked Immuno Sensor Assay (SLISA) for environmental surveillance". He did his post-doctoral trainings in SERS and photo-nanomedicine at the Department of Biomedical Engineering in Rutgers, NJ and Department of Chemistry and Forensics at The Western Carolina University, NC. Dr. Bhardwaj has published more than a dozen peer-reviewed articles in SERS and nanomedicine, two book chapters and a Nova Science Publishers, Inc. book about SERS in press. He has been an invited speaker on multiple occasions, and a guest editor in peer-reviewed journals.

Raman spectroscopy is a powerful molecular fingerprinting technique that is evident by the rapid rise in industrial use and research publications over the last decade in diverse fields including; national defense & security, forensics, and healthcare. The primary focus of Vinay's presentation was to highlight several recent advancements in using SERS technologies in the medical field and efforts to commercialize them. The applications discussed focused on: 1) Optical nano sensors for in situ detection, and 2) nanomedicine for targeted administration of drug therapy in cancer and brain diseases.

Vinay described SLISA and Swab sampling methods for using SERS technology in the field. SLISA is a SERS-Linked Immuno Sensor Assay). SLISA uses nanoparticles (gold or silver) cross linked with antigens that are specific for molecules of interest. This approach enhances the specificity of SERS, similar to ELISA testing, but avoids the lengthy washing steps involved in an ELISA test. The use of SLISA with a handheld Raman spectrometer make it a good choice for applications where fast reaction times are needed such as point-of-care, in situ and on-site sensing and monitoring applications. SWAB uses a cotton matrix to enhance the surface area for the nanoparticles to come in contact with molecules of interest. This is an ideal sampling media for collection of fluid evidence found in forensic and crime scene investigations.

SERS technology has the potential for becoming a core technology used in personal sensors where requirements include; portable, rapid, accurate, inexpensive, safe, and easy to use. In medicine, SERS is a label-free approach for in-vivo detection of certain cancers and can be used to speed the drug discovery process to find new potent antibiotics and anti-cancer drugs.

Another area discussed was the use of magnetic nanoparticles tagged with drug molecules to enhance delivery to target organs.

We had 15 people attend the meeting at Horiba. If you missed the meeting and would like to hear a replay of the presentation, send an email to debperu@outlook.com and we will send you a link to the webinar

More information about the NYSAS organization and a schedule of meetings please go to our website www.nysas.org.



The Long Island Subsection of The New York American Chemical Society

Proudly presents

Dr. Ruel Desamero,

from York College of CUNY, Department of Chemistry

Title of Talk: "Conformational Consequences and Structural Details of the Self-Assembly of hIAPP₂₂₋₂₉"

Synopsis: The octapeptide NFGAILSS (hIAPP₂₂₋₂₉), derived from human islet amyloid polypeptide, has been extensively used as a model system to study amyloid formation. However, despite being the target of numerous investigations, information describing specific molecular interactions and conformational details are still lacking in regard to aggregates formed by this peptide. We synthesized peptide analogs of hIAPP₂₂₋₂₉ and employed turbidity measurements in conjunction with FTIR, Raman and fluorescence spectroscopy along with computer modeling to investigate and probe the structure of aggregates formed by the NFGAILSS sequence. Our findings unambiguously indicate that, at neutral pH, hIAPP₂₂₋₂₉ self-assembles into a parallel β -sheet secondary structure in which the aromatic ring of Phe-23 engages in π -stacking interactions. Computational modeling confirms that of the possible ring stacking motifs (sandwich, parallel displaced, parallel staggered and T-shaped geometries) only a parallel displaced stacking arrangement can account for the observed vibrational modes in the Raman spectra. The amide I vibrational mode *ca.* 1655 cm^{-1} in the Raman spectra of aggregates from hIAPP₂₂₋₂₉ indicates the presence of a parallel β -sheet secondary structure. Fluorescence data also support these observations and point to the formation of excimers due to ring stacking. These observations are compared and contrasted to results obtained with amidated hIAPP₂₀₋₂₉ (SNNFGAILSS-NH₂) analogs that are only capable of forming amyloid composed of antiparallel β -sheets in which π -stacking interactions involving Phe-23 cannot occur. Consistent with this, the presence of an electron donating substituent on the aromatic ring of Phe-23 was found not to abolish the amyloidogenic potential of hIAPP₂₀₋₂₉ as it has previously been shown with hIAPP₂₂₋₂₉. Raman spectra of aggregates formed from hIAPP₂₀₋₂₉ were distinctly different from those of hIAPP₂₂₋₂₉ in the amide and ring mode vibrational regions and provide evidence of an antiparallel β -sheet structure. Finally, results from these investigations reveal that the hIAPP₂₂₋₂₉ sequence is sensitive to its chemical environment and can undergo "conformational switching" between parallel and antiparallel β -sheets in response to changes in pH. The ramifications of the above findings are discussed in the context of other amyloidogenic systems and full-length hIAPP.

All are welcome!

When: Thursday, April 4th, 2019

Where: Queensborough Community College, Science Building Rm S-112

Time: 5:30 p.m. – Social w/ Light Refreshments; 6:00 pm – Seminar Start

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

After Seminar Dinner: At a nearby restaurant, \$25 per person.

LONG ISLAND SUBSECTION

The LIACS is a subsection of the New York Section of the ACS. Its objectives include 1) the encouragement of the interchange and sharing of scientific knowledge of chemists and chemical engineers working or residing in the counties of Queens, Nassau or Suffolk, and 2) development of interest in science on the part of all citizens of the area. Please visit our website for our future programs: http://www.newyorkacs.org/sub_island.php

Events and Programs

The Long Island Subsection of the ACS (LIACS) recently sponsored a Baker STEM night event and a Seminar featuring Professor David Jeruzalmi of the City College of New York.

Baker STEM Night

The LIACS and the U.S. Merchant Marine Academy (USMMA) participated in the Great Neck E. M. Baker Elementary School's STEM Family Night for the 5th consecutive year since the Program's inception in 2015. This year, the event was granted a special waiver from the USMMA Superintendent, Admiral J. Buono, to be allowed to happen during the government shutdown period. On the evening of Tuesday, January 22, 2019, fifteen midshipmen along with four faculty members brought eleven experiments to the Event for the local youth to try and helped present additional activities prepared by the Baker School parents' organization. The efforts were greatly appreciated by the students, parents, teachers, and administrators of the Baker Elementary School. It was a fun and rewarding night for all who were involved. The experiments included: What's in the water (LDC), chemistry is colorful(LDC), invisible ink, instant snow, Rocket chemistry (LDC), vacuum space (LDC), chemistry makes scents (LDC), instant hot pack, build a battery (LDC), radiometry, insulator vs. conductor. (LDC = Let's Do Chemistry Kit activity).



LIACS Spring Outreach – Baker STEM Night.

(Photo courtesy of Captain Anthony Nigro)

2019 Spring Seminar Program

On the Thursday evening of February 7, 2019, the LIACS had the greatest honor of having Dr. Jeruzalmi visit us and deliver the monthly LIACS seminar. Seventy-five LIACS members and affiliates enjoyed the enriching and enlightening evening as Dr. Jeruzalmi shared the exciting findings of his research group that provide new insights into how helicase configurations/reconfigures in preparation for translocation. As the Director of the NSF-supported Research Experience for Undergraduates, Dr. Jeruzalmi also talked about various NSF-supported undergraduate research opportunities at the City College of New York and answered many related questions. Dr. Jeruzalmi received a Ph.D. in Biophysics and Biochemistry in 1994 from Yale University. He joined City College of New York in 2002 and was promoted to Full Professor in Chemistry & Biochemistry in 2012. 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.



The LIACS Spring Seminar featuring Dr. David Jeruzalmi of the City College of New York.

(Photos courtesy of Paul Sideris and Jare Adeniran)

The LIACS is a subsection of the New York Section of the ACS. Its objectives include 1) the encouragement of the interchange and sharing of scientific knowledge of chemists and chemical engineers working or residing in the counties of Queens, Nassau or Suffolk, and 2) development of interest in science on the part of all citizens of the area. Please visit our website for our future programs: http://www.newyorkacs.org/sub_island.php.

THIS MONTH IN CHEMICAL HISTORY

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

This month I am presenting a guest column, written by my colleague retired Professor of Chemistry at Cal. State, Los Angeles, Costello Brown, who happens to be African-American. It is a reminder of how things used to be even for chemistry students not so many years ago. I am working on this lightly edited piece during February, Black History Month.

Here is Costello's story:

I can assure you that this may have been the most traumatic experience in my life and maybe the only time when I felt that my life was in danger. Yet, there is no comparison to the heroes of the Civil Rights Movement; my story represents what can happen to ordinary folks doing ordinary things, like washing clothes at a laundromat. I was participating in a college summer internship program at a federal laboratory (Oak Ridge National Laboratory)

Washing Clothes in Oak Ridge Tennessee

At the end of my sophomore year (1961) at Hampton Institute, I applied for and was accepted into a summer research program at Oak Ridge National Laboratory in Oak Ridge, Tennessee. I needed a low-level security clearance, which required that the FBI go out to the Sweet Gum community in Caswell County where I grew up and interview our neighbors about me. They asked questions like "Do you know if he drinks alcohol? Did he ever get into any trouble or bother anybody? Our neighbors gave me a clean bill of health and I was approved for the summer program at Oak Ridge Tennessee.

There were 20 college students from colleges and universities throughout the United States, (but mostly from the south) in the program; 16 were white and four black. We were all housed in a renovated army barrack that had been turned into a hotel. The four black students were housed as roommates in two adjoining rooms on the second floor. Two of the black students were from colleges in Mississippi and two from Hampton Institute (now Hampton University). The other student from Hampton was a physics major and was originally from Sierra Leone, in West Africa. He was very proud to be an African and would often tell the three of us that he was better than we were because, he knew who he was, he was pure African and we had no idea who we were. We often joked that he was "pure" all right "a pure fool."

All four of the black students were told that it would be best if we did not come downstairs and sit in the lounge area. In addition, everyone else could pick mail up daily at the office but our mail was put under the doors of our rooms each day. In contrast to these living arrangements, the summer research experience was going well at the Laboratory, and I was having a really great research experience with an excellent mentor. We were analyzing isotopes of nitrogen from ammonia samples using a mass spectrometer.

But there were a few unanticipated experiences. A white participant in the program went out of his way to be my friend (I seem to remember that he was a Mormon from a college/university in Utah). My friend had a car and I would often ride to the lab with him. One morning on our way to work we decided to stop at a local restaurant to get some breakfast. When we walked in the guy at the cash register told us that the restaurant did not serve colored folks and that I would have to leave. My friend who was white said that he would also leave and after that I did not go to any restaurant in Oak Ridge for the whole summer.

We four black students had been washing our clothes (mostly underwear) in the washbasin in the bathroom and then hanging them up in the room to dry since we had been told that we could not use the local laundromat. The laundromat was about a block and a half away from where we were living. It was hot and humid in the rooms and the wet

clothes, which often dripped onto the floor made it worse. One afternoon, our African colleague announces that he is tired of washing his clothes in the washbasin and that he is going down to the laundromat. He wanted to know if anyone would go with him. The two students from Mississippi shook their heads right away but I said, "I'll go with you." We had all joked that he needed to take his clothes out somewhere and destroy them because the odor was overwhelming. I put my wash into a large brown paper bag and off we went to the laundromat.

As soon as we entered the front door of the laundromat, this older frail looking white lady who seemed to be the only person in the laundromat at the time came up to us immediately and said, "I am sorry but you boys can't wash your clothes in here." My companion then says in a very strong and almost arrogant cocky tone, "I am from Africa and I have a card in my pocket from the State Department that says I can go anywhere in this country and I am not to be discriminated against." She gets right up in front of Garrett, almost nose to nose and says "Fer as I'm concerned, you jest like all the rest of 'em." At this point, I am standing just inside of the entrance so I quickly turn and walk out with my companion following close behind.

We walk about a half a block and as soon as we turn the corner we see three police cars coming directly toward us, sirens blaring and red lights blinking. One of the cars actually drives up onto the sidewalk so that we are hemmed in. At this point my heart is pounding so hard and all I could think of was that my Mother would never see me alive again and that I was going to die right there in Oak Ridge Tennessee. A uniformed officer with boots that went almost to his knees gets out of the car first and approaches my companion. The whole time, I am inching backwards. The officer is talking very fast and nervously; so fast in fact, you can't really understand what he is saying. My companion just looks at him from head to toe, then interrupts him and says in the same strong arrogant tone "Who are you?" "At this point, I know I am dead. Then a plain clothes officer approaches. I am standing as far away as possible with my back to a wall. The officer says, "We got a call that you two boys were disturbing the peace down here". My companion then tells the story about the card in his pocket from the State Department and that he is to be treated differently. The police officer then tells him "you are now in Tennessee and you will have to obey our laws and customs." He then says, "why don't you boys get in the car and I will take you over to Gamma Valley (where the black folks live) and you can wash your clothes over there. I will wait for you and bring you back." I started shaking my head while thinking to myself "no way am I going to get into this police car". I quickly said "no thank you." The lieutenant then says, "if you boys promise me that you will not cause any more problems, I will let you go". I made the promise. The whole encounter took only about 15 minutes but it seemed like hours had passed. We walked back to our rooms and washed our clothes in the washbasin and hung them up to dry for the rest of the summer.

I was only 18 at the time, but I know I would not have had the courage to remain in that laundromat that day after being told to leave. This experience gave me a greater appreciation and admiration for the extraordinary courage of the civil rights heroes who would have chosen to stay in that laundromat until they were arrested. They did choose to remain seated in buses when asked to go to the rear, and they did choose to remain at the Woolworth lunch counters when they were asked to leave. For the choices they made, jobs, homes and yes, even lives were lost. These events during the summer of 1961 and my experiences in contrast, seem in retrospect to be quite trivial.

To this day, I seldom use laundromats. My African companion went on to get a Ph.D. in physics and probably still has the card in his wallet from the State Department stating that he is not to incur discrimination.

North Jersey Meetings

<http://www.njacs.org>

NORTH JERSEY EXECUTIVE COMMITTEE MEETING

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

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

Date: Monday, April 29, 2019

Time: 7:00 - 9:00 PM

Place: Merck & Co., Inc.
2000 Galloping Hill Road
Room K15-1074
Kenilworth, NJ 07033

All are welcome but please let Amjad Ali (at 908-740 3407) know if you plan on attending so he can give security your name.

(See www.njacs.org for any changes.)

For reservations please call NJACS secretary Bettyann Howson (973) 822-2575 or email chemphun@gmail.com or register online at <http://www.njacs.org> prior to **Wednesday, April 24, 2019**.



ACS NATIONAL MEETING

Dates: March 31 - April 4, 2019

Place: Orlando, FL.

For more information, see under National, page 31, or go to: <https://www.acs.org/content/acs/en/meetings/national-meeting.html>



JEAN DREYFUS LECTURESHIP FOR UNDERGRADUATE INSTITUTIONS

Professor Karen Anderson from Yale University will give two seminars at Montclair State University. All are welcome and the event is free of charge.

For additional info, contact catalanoja@montclair.edu.

Lecture 1: "Challenges in Developing New Therapies for AIDS"

Date: Tuesday, April 9, 2019

Times: 4:00 - 5:00 PM

Refreshments starting at 3:00 PM

Place: Montclair State University
Center for Environmental and Life Sciences CELS120
Montclair, NJ

Cost: Free of charge

Lecture 2: "Novel Strategies Targeting Bifunctional TS-DHFR in Parasitic Infections"

Date: Wednesday, April 10, 2019

Times: 3:00 PM - 4:00 PM

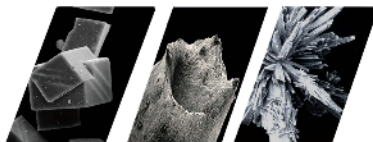
Reception to follow.

Place: Montclair State University
Center for Environmental and Life Sciences CELS120
Montclair, NJ

Cost: Free of charge



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Analysis:

Thermal	Defects
Polymers	Castings
Chemicals	Corrosion
Metal Phases	Quality Check
Contaminations	Product Failure
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AUGER	ESCA
FTIR	XRD

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NORTH JERSEY SECTION'S 70th ANNUAL UNDERGRADUATE RESEARCH CONFERENCE

The Seventieth Annual Undergraduate Research Conference provides an opportunity for talented undergraduate students in the North Jersey Section to give an oral presentation on their research results. All undergraduate students in the North Jersey Section are invited to participate in this very rewarding event. The research presentations will be judged by local chemists working in industry or academia and the student giving the best presentation will be given the 2019 Jean Asell Duranna Award. In addition the top three presenters will be awarded cash prizes. The student award winners and their advisors will then be invited to attend the North Jersey Section's Annual Awards Dinner held at Fairleigh Dickinson University campus in Madison, NJ in May 2019.

Abstract Information: Clearly indicate the title of the presentation and all authors. Abstracts must be no more than 200 words and need to be submitted as a word document attached to an email to Matthew Mongelli at mmongelli@kean.edu.

Abstracts deadline is Friday, March 29, 2019.

Date: Friday, April 12, 2019

Times: 11:30 AM - 4:30 PM

**Place: New Jersey Institute of Technology
Tiernan Lecture Hall 1
Newark, NJ 07102**

For more information about this event contact Matthew Mongelli at mmongelli@kean.edu or Bhavani Balasubramanian at balasubr@njit.edu

National

ACS COUNCIL AGENDA

Editors of Local Section and Division Publications of the American Chemical Society

Ladies and Gentlemen:

The Council will meet in Orlando, Florida, at 8:00 AM, **Wednesday, April 3, 2019**, in Orlando I/II of the Hilton Orlando Hotel.

The agenda for this meeting with supporting documents is also available online at www.acs.org/councilors. This material is sent to you so that you may be fully informed of Council business and have as much information as possible to explain actions taken at the meeting. Please note that immediately after each national meeting we send all Councilors a summary of actions taken by the Board and Council at that meeting. Please ask a Councilor for this summary if you would like to report on the actions taken at the meeting.

Non-councilors again are invited to observe the Council meeting. The space set aside for this purpose will be available to ACS members on a first-come, first-served basis. We urge you to take advantage of this opportunity if you are planning to be in Orlando for the national meeting.

Sincerely yours,
Flint H. Lewis
Secretary and General Counsel
American Chemical Society
1155 16th St., NW, Washington, DC 20036
T 202-872-4461, F 202-872-6338
www.acs.org

NORTH JERSEY NMR TOPICAL GROUP

February Meeting



The NMR Topical Group held its February monthly seminar on February 13, 2019, at Frick Chemistry Laboratory in Princeton University. **Bruce Johnson, PhD**, Structural Biology Initiative from Advanced Science Research Center, CUNY presented a topic of **NMRfx – A New Integrated Software Suite for NMR Data Analysis**. Bruce presented the motivation for developing this comprehensive NMR software suite and illustrated the biomolecule structure calculation cases where NMR signal processing, chemical shift assignment and structure calculation were achieved simultaneously by NMRfx. In the second half of his talk, Bruce presented a live tutorial of the software suite with applications to the assignment of RNA molecules that

(continued on page 32)

NORTH NORTH JERSEY NMR TOPICAL GROUP

(continued from page 31)

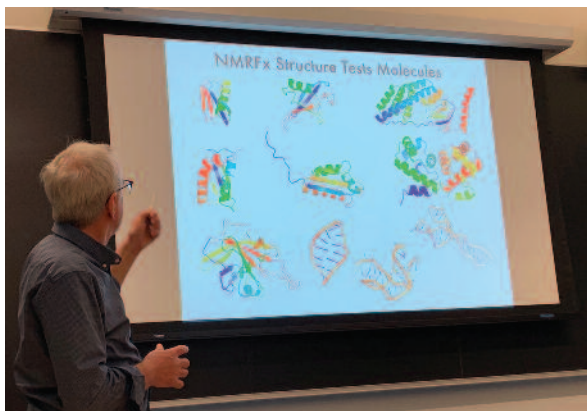
incorporates NMR chemical shift prediction and a new visual assignment tool that enabled the users to correlate assignments among different datasets. The audience actively involved in the tutorial section by raising and discussing diverse technical questions and the algorithms behind the suites, some of which in turn sparked new insights for future feature development for NMRfX.

(All photos courtesy of Qi Gao)

(Article continues on page 33)



Social networking and discussion during the buffet dinner prior to seminar.



Snapshot of Bruce's presentation.



Audience and presenter actively discussing questions at the seminar.

March Meeting

The NMR Topical Group held its March meeting on **Wednesday, March 20th** at Princeton University. Prof. Morten Kjærulff Sørensen from Aarhus University, Denmark presented the invention of multinuclear, cost-efficient benchtop NMR for industry and science.

The Tveskaeg Benchtop NMR Instrument: Multinuclear, Cost-efficient NMR for Industry and Science

Speaker: Prof. Morten Kjærulff Sørensen



Abstract: Nuclear magnetic resonance (NMR) is a powerful tool for quantitative molecular analysis. While high-field NMR spectrometers are based on bulky superconducting magnets, several low-field NMR instruments (based on permanent magnets) have been developed as robust, mobile, low-cost alternatives. The vast majority of low-field NMR instruments are limited to ^1H experiments sometimes combined with a narrowband channel for another high-sensitive isotope. However, practical applications of NMR exist for a large variety of detection isotopes.

To utilize this potential, we have developed a cost-efficient, benchtop/on-line NMR instrument with a broadband channel covering the frequencies of all relevant NMR-active isotopes with fast digital tune/match capability. The Tveskaeg NMR instrument (NanoNord A/S, Denmark) is based on a ~ 1.5 T permanent Halbach magnet, a digital console, and a probe with 2 ml sensitive sample volume (i.d. 9.2 mm). The instrument is suitable for use in laboratories, for fieldwork, and in on-line setups for continuous monitoring applications.

Targeting specific industrial applications, we have conducted a variety of studies to demonstrate the performance of the NMR instrumentation in the laboratory and at industrial positions of use. Some of these applications are: (i) On-line monitoring of catalytic fines in heavy fuel oil onboard ships using ^{27}Al NMR. (ii) Continuous monitoring of ammonium, phosphorus and chloride levels at wastewater treatment plants by ^{14}N , ^{31}P and ^{35}Cl NMR. (iii) Quantification of nutrients in agricultural manure by ^{14}N , ^{17}O , ^{31}P and ^{39}K NMR. (iv) Quantification of salt in food products by ^{23}Na and ^{35}Cl NMR. (v) Quantification of protein and fat contents in milk. (vi) Monitoring of boron and lithium in reactor coolant at power plants by ^{11}B , ^{10}B and ^7Li NMR.

Furthermore, the benchtop instrument is an efficient spectrometer for wide-line solid-state NMR experiments. This is demonstrated experimentally by acquisition of challenging spectra like the ^{14}N spectrum of KNO_3 spanning more than 1 MHz. By introducing interleaved sampling of frequency slices, a highly efficient acquisition is achievable with a sensitivity comparable to high-field NMR experiments.

Overall, our results demonstrate some of the capabilities and the versatility using multinuclear, cost-efficient NMR as a robust analytical tool suitable for both scientific and large-scale industrial applications.

Call for Nominations

ACS NEW YORK SECTION'S OUTSTANDING SERVICE AWARD FOR 2019

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

award. Nominations will be reviewed by a committee consisting of the previous five winners of the award. The Outstanding Service Award for 2019 will be presented at the New York Section's Section-wide Conference in January 2020.

A Nomination letter with supporting information should be emailed to the OSA Committee Chair, Dr. Jill Rehmann at jrehmann@sjcnj.edu. It can also be sent to Dr. Rehmann at St. Joseph's College, Department of Chemistry, 245 Clinton Avenue, Brooklyn, NY 11205.

For more information about the award along with a list of former award recipients, please visit the ACS New York Section's website at http://www.newyorkacs.org/awards_nyacs.html. Nominations close **June 30, 2019**.

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 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.



KAVLI EMERGING LEADER ORLANDO

The Kavli Foundation has agreed to sponsor The Kavli Foundation Emerging Leader in Chemistry Lecture through 2025 featuring two lectures at each ACS national meeting. The Kavli Foundation Emerging Leader in Chemistry Lecture is awarded to an outstanding chemical scientist who is less than 10 years past receipt of his or her Ph.D. and will be under 40 years of age **as of Monday, April 1, 2019**, the date of the lecture. The candidate is a distinguished younger scientist who is highly regarded by his or her peers for significant contributions to an area of chemistry or related multidisciplinary area of chemistry.

The Multidisciplinary Program Planning Group (MPPG) is pleased to host the lecture at the Spring ACS National Meeting in Orlando, FL. We invite ACS Divisions and Committees to submit candidate nominations.

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.



ACS FELLOWS PROGRAM

This email is sent on behalf of Felicia Dixon, Staff Liaison, ACS Fellows Oversight Committee.

To: Chairs, ACS Local Sections
Councilors and Alternate Councilors,
ACS Local Sections
Chair / Staff Liaison, Local Section
Activities Committee

This email is to let you know that the American Chemical Society (ACS) Fellows Program is accepting nominations for 2019 Fellows. The ACS Fellows Program recognizes ACS members who have both documented excellence and leadership that has an impact in the science, the profession, education, and/or management and documented excellence in volunteer service, based on specific results achieved, in service to ACS and its membership and community. **The online nomination system opened on Friday, February 1, 2019 and will close Monday, April 1, 2019.**

Local Section Nominations

Each Local Section may submit as many nominations as there are Councilors authorized for the Local Section. Nominees must be current members of the Local Section. The primary nominator must be an Officer, Councilor, or Alternate Councilor of the Local Section, or some other Local Section member specifically designated by the Chair to prepare the nomination on behalf of the Local Section. However, secondary nominators need not be members of that nominating Local Section. If the Chair is not the primary or a secondary nominator, he/she must attest that the individual is indeed being nominated on behalf of the Local Section. If the Chair is one of the nominees, then the attestation must be supplied by another Officer, Councilor, or Alternate Councilor of the Local Section.

Nominees and primary and secondary nominators must be current members (including retired and emeritus members) in good standing of the American Chemical Society. However, current members of the ACS

Fellows Selection Committee, ACS Fellows Oversight Committee, ACS Board of Directors, and current ACS staff are not eligible to be nominees or primary or secondary nominators.

How to Submit a Nomination

To submit a nomination, go to www.nominatefellow.acs.org. This URL takes you to the online nomination system, which fully integrates with the ACS membership database. Please note that the system opened for nominations on February 1. Resource documents to inform and facilitate the nomination process are available at www.acs.org/fellows.

Reminder: Changes Implemented in 2017

The Code of Conduct section language was updated and an explanation is required for a 'No' response in the online nomination form.

A 'Summary of Impact/Significance' field was added to the Volunteer Service to the ACS Community and Contributions to the Science/Profession sections of the online nomination form.

Please note that unlike other topical ACS awards, where the reviewers have expertise in the area of the award, ACS Fellows reviewers are not expected to be experts in a nominee's professional field. Given this, we emphasize the importance of clearly communicating, via letters of recommendation and the nomination form sections, the nominee's important achievements and the impact of those achievements in both his/her professional and volunteer activities.

Last year many Local Sections submitted nominations, and we hope that even more will participate this year. We also encourage you to invite your friends and colleagues to submit nominations. Nominations are also accepted from ACS National Committees, Technical Divisions, and individual members and all nomination types are weighted equally in the review.

If you have questions, please email us at fellows@acs.org.

Warm regards,
Felicia

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Membership & Society Services Division
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www.acs.org/nationalawards

www.acs.org/fellows;

www.acs.org/chemluminary

ACS Chemistry for Life

American Chemical Society



THE WILLIAM H. NICHOLS MEDAL AWARD FOR 2020

The New York Section of the American Chemical Society is accepting nominations for the William H. Nichols Medal Award for the year 2020. This distinguished award, established in 1902 by Dr. William H. Nichols for the purpose of encouraging original research in chemistry, is the first award that was authorized by the American Chemical Society. The award is presented annually in recognition of an outstanding contribution in the field of chemistry, and consists of a gold medal and a bronze replica. In March or April, the medals are awarded during the William H. Nichols Meeting that features the Distinguished Symposium related to the medalist's field of expertise and the Medal Award Dinner.

Investigators who have published a significant and original contribution in any field of chemistry during the five calendar years preceding the presentation meeting are eligible for consideration by the Nichols Medal Jury. The ACS York Section encourages nominations from academia, government and industry.

Each nomination requires a completed nomination form, biographical and professional data, and seconding letters. Since the nomination process utilizes the ACS New York Section website, please access the nomination form and instructions at www.newyorkacs.org/meetings/Nominations/Nichols.php.

Nominations must be received by May 31, 2019. The Nichols Medal Award Jury will meet in June 2019 to select the William H. Nichols Medalist for 2020.

Questions regarding the nomination procedure should be directed to the ACS, New York Section Office, at njesper1@optonline.net

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: 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!

STUDENTS 2 SCIENCE

National Volunteer Week



Students 2 Science (S2S) offers unique volunteer opportunities for ACS members and friends who are retired, emeritus, professionals in-transition and/or those in the later part of their career. S2S strives to inspire, motivate, and educate elementary, middle and high school students to pursue careers in the STEM subjects. The organization especially needs scientific professionals to serve as role models to its participating students who visit the organization's laboratories and work to solve real life problems while being introduced to a wide variety of 21st century STEM career opportunities.

S2S has been a strategic partner of NJACS for 10 years and offers a great value to STEM education throughout the East Coast. The organization is looking for instructors and lab assistants to volunteer at their East Hanover and Newark sites from 8:30 AM – 2:30 PM. You can volunteer once or as frequently as you would like throughout the school year and what better time to volunteer than **April 7-13, 2019, which is National Volunteer Week?**

Why volunteer? You can interact with other chemistry professionals, network, acquire additional experience in your field, enjoy the satisfaction of inspiring a young person and have a little fun while doing so.

"Volunteering at S2S is important to introduce students to STEM to improve their lives while producing scientist and engineers for the future needs of our society."

David Green, Volunteer

"I enjoy working with the students and seeing their eyes light up when they work on experiments hands on and see their results. I also enjoy the interactions and networking at S2S with the other volunteers."

Alan Cooper, ACS Member
& S2S Volunteer

How do I volunteer? Well that's easy. Contact the organization by calling (973) 947-4880 ext. 516 or email info@students2science.org and let them know you are responding to ACS code #2.

See you in the lab!

Call for Applications

FREDDIE AND ADA BROWN AWARD

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

Award Amounts

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

Who is Eligible

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

Grades

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

Letter of Recommendation

Math or Science/Chemistry Teachers or Guidance Counselor

Statement

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

Selection Criteria

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

Transcript

Official transcript required.

Financial Need

Not Required.

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

Return Application To

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

Due Date

Completed Applications must be post-marked **no later than March 31 Annually**

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

Grants Available

SENIOR CHEMISTS COMMITTEE 2019 MINI-GRANT PROGRAM FOR LOCAL SECTIONS

Dear Local Section Officers:

The ACS Senior Chemists Committee (SCC) is offering a limited number of grants to local sections that wish to sponsor an event or activity that will increase the engagement of senior members and encourage innovative activities that will benefit the local community, schools, or legislative government.

Grant Application: https://fs23.formsite.com/kate1dc/scc_minigrant/index.html

Grant Details:

A limited number of grants (up to \$500) are available to local sections that wish to host an event/activity that meets the above criteria.

Deadline May 31, 2019

Local sections must submit a grant application **by Friday, May 31, 2019**. Grant funds are limited and will be awarded on a first-come, first-served basis.

As per ACS policy, a summary report must be submitted within 30 days of the conclusion of the event or activity.

Summary Report: https://fs23.formsite.com/kate1dc/scc_event_summary/index.html

If you have any questions, please send them to seniorchemists@acs.org. Thanks!

American Chemical Society, 1155 Sixteenth Street, NW, Washington, DC 20036