

THE Indicator

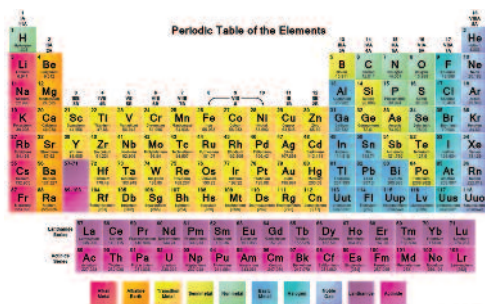
FEBRUARY 2019

Vol. 100 • No. 2

ISSN0019-6924

So Much to Celebrate!

2019 is the
150th
Anniversary of
The Periodic
Table of
Chemical
Elements



Periodic Table of the Elements

The image shows a standard periodic table of elements, color-coded by groups. The title "Periodic Table of the Elements" is centered above the table. The elements are arranged in rows and columns, with their symbols and atomic numbers visible. The table includes all elements from Hydrogen (H) to Oganesson (Og).

See related article on page 28.

PRESIDENTS DAY



Be My  Valentine

BLACK HISTORY MONTH

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

THIS MONTH IN CHEMICAL HISTORY

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

I have in past years devoted my first column of the year to a look at the significant work in the chemistry of 100 years ago as reflected in the "Annual Reports of the Progress of Chemistry" of the Chemical Society of London. So this month's column will begin an examination of the contents of Volume XVI for 1919 (published in 1920). It is a relatively slim volume for obvious reasons. From the opening of the first section on General and Physical Chemistry: "this Report synchronises with the return of many scientific workers from occupations connected more or less directly with the conduct of war, to conditions of life which may be expected to provide the opportunity for a resumption of scientific investigation for its own sake....the period under review may be justly described as a lean year." And further, and significantly: "physical chemistry during the next decade is likely to be very largely influenced by the intrusion of those ideas which are, more or less intimately, associated with the quantum hypothesis." Prophetic words, indeed.

Questions about atomic structure loom large at that time, and were addressed in three major lectures by F. Soddy, J.C. Nicholson, and J.H. Jeans. Soddy was the colleague of Rutherford, discoverer of isotopes, and a pioneer researcher in radioactivity. Nicholson was a well-known spectroscopist. Jeans was an astrophysicist whose popular books on science had a wide following. Nicholson used the "observation" of an infinite (!) number of lines in the emission spectra of the structurally simplest elements (hydrogen ?) to argue against the theories of Rutherford and Bohr. Adding additional weight to his arguments is a paper by Sir J. J. Thomson that also rejects the Bohr hypothesis that the angular momentum of the electron is quantized. Thomson continues to model more complex atoms than hydrogen as containing alternate shells of attractive and repulsive forces with intervening positions in which the electrons are in (static?) equilibrium. On the other hand Soddy and Jeans enthusiastically embrace the Rutherford and Bohr models. We can smugly assert that we know who wins those arguments, but, to use the jargon of science historians, that is a Whiggish approach to history.

A section is devoted to the question of atomic disintegration by collision with alpha particles. Rutherford has demonstrated that when nitrogen atoms are impacted by high energy alpha particles hydrogen atoms (protons) are ejected (and presumably, though this is not made clear, carbon nuclei are also formed). The yield in such collisions is extremely small, of the order of one in 100,000.

The influence of Alfred Werner's recent contributions to coordination chemistry is evident in a section on valence. The author R. De has examined the compound chloropentamine-cobaltic chloride and deduces that of the three valence electrons of the cobalt(III) atom "one... is bound to the chlorine atom contained within the complex while the other two, situated outside the complex, are free and correspond with valencies of the polar type." This seems to me an obvious re-statement, in somewhat complicated terms, of Werner's views.

A section on chemical change and radiant energy considers Perrin's theory that many phenomena observed in both physical and chemical transformations can be explained by assuming that they are determined by the emission or absorption of radiant energy. This comprehensive review covers fluorescence, phosphorescence, radioactive disintegration, and chemical change (!). The reviewer laments that the distinguished proponent of such ideas has simply failed to note much preceding work on this subject. In particular the contributions of Lewis and Einstein have been ignored. Perrin seems to have been fixated on what he considers as obscurities in the origins of quanta as first described by Planck.

To continue with more conventional chemistry a detailed investigation of the photo-induced reaction between hydrogen and chlorine has been undertaken by Chapman building on earlier work by Bodenstein. The significance of the role of trace amounts of foreign substances, particularly oxygen, has been established. The reaction is first order in each of the intensity of light absorbed, the concentration of hydrogen, and the concentration of chlorine, and inversely as the concentration of the oxygen retarder. Light is absorbed by the chlorine molecules which are thus activated and react with hydrogen molecules. Oxygen can deactivate the activated chlorine molecules. This mechanism agrees well with the observations of Chapman et al.

Langmuir has proposed a model for the action of heterogeneous catalysts. He postulates that the surface of a solid catalyst becomes coated with a monolayer of one or other of the reactants in the surrounding gaseous or liquid medium. This adsorption may change the chemical nature of the adsorbed species; for example a molecule like hydrogen may become dissociated into its constituent atoms that then become the reactive species. Langmuir has presented experimental evidence that supports this novel theory. These ideas of Langmuir's remain the basis of some current theories of heterogeneous catalysis.

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February 2020	December 28, 2019

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to the Editor.

February Calendar

NEW YORK SECTION

Tuesday, February 5, 2019

New York Nanoscience Discussion Group
See page 8.

Thursday, February 7, 2019

Chemical Marketing and Economics Group
See pages 8-9.

Thursday, February 7, 2019

Long Island Subsection
See page 10.

Tuesday, February 12, 2019

Westchester Chemical Society
See pages 10-11.

Friday, February 15, 2019

Board of Directors Meetings
See page 8.

Tuesday, February 19, 2019

Biochemical Topical Group
See pages 11-12.

Wednesday, February 20, 2019

Organic Topical Group
See page 12.

also

Thursday, March 7, 2019

Westchester Chemical Society
See page 14.

Thursday, March 7, 2019

Long Island Subsection
See page 15.

Friday, March 8, 2019

Board of Directors Meetings
See page 8.

Wednesday, March 13, 2019

Metro Women Chemists Committee
See page 13.

Thursday, March 14, 2019

Biochemical Topical Group
See pages 16-18.

Thursday, March 28, 2019

Westchester Chemical Society
See pages 14-15.

Thursday, April 4, 2019

Long Island Subsection
See page 15.

Friday, April 12, 2019

Nichols Symposium and Dinner
See pages 6-7.

Saturday, April 27, 2019

Chemists Celebrate Earth Week
See page 17.

Tuesday, June 4, 2019

New York Nanoscience Discussion Group
See page 8.

Friday, June 7, 2019

Friday, September 13, 2019

Friday, November 15, 2019

Board of Directors Meetings

See page 8.



NORTH JERSEY SECTION

Wednesday, February 13, 2019

NMR Topical Group
At Princeton Univ. See Page 21.

Monday, February 25, 2019

North Jersey Executive Meeting
See page 21.

also

Tuesday, March 5, 2019

ChemTag
At New Providence HS. See page 21.

Tuesday, March 5, 2019

Mass Spectrometry Topical Group
See March issue for details.

Wednesday, March 20, 2019

NMR Topical Group
See March issue for details.

Monday, March 25, 2019

North Jersey Executive Meeting
At Merck.

Wednesday, March 27, 2019

North Jersey Chromatology Group
See March issue for details.

Wednesday, March 27, 2019

Younger Chemists Committee
See March issue for details.

March 2019

Chemistry Olympiad exams start.
Details TBA.

Tuesday April 9, 2019

Wednesday April 10, 2019

Jean Dreyfus Lectureship
See page 21.

March 31 - April 4, 2019

ACS National Meeting
In Orlando, FL. <https://www.acs.org/content/acs/en/meetings/national-meeting.html>

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Just in Time for Black History Month!



African American Women
Chemists in the Modern Era

JEANNETTE E. BROWN

AFRICAN AMERICAN WOMEN CHEMISTS IN THE MODERN ERA

Jeannette E. Brown, former Research Chemist for Merck & Co. Inc. and a former Faculty Associate at the New Jersey Institute of Technology

- Details the successes and achievements of contemporary African American women chemists
- Focuses on chemists and chemical engineers working after the Civil Rights Act of 1964
- Written in an interesting oral history style

African American Women Chemists in the Modern Era focuses on contemporary women who have benefited from the Civil Rights Act and are now working as chemists or chemical engineers. This book was produced by taking the oral history of women who are leaders in their field and who wanted to tell the world how they succeeded. It features eighteen amazing women in this book and each of them has a claim to fame, despite hiding in plain sight. These women reveal the history of their lives from youth to adult. Jeannette Brown aims to inspire women and minorities to pursue careers in the sciences, as evidenced by the successful career paths of the women that came before them.

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



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

Award Recipient: 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 Molecular Level Studies of Carbon Based Nanomaterials
in the Environment

Professor Howard Fairbrother,
Department of Chemistry
Johns Hopkins University

Carbon based nanomaterials include for example, carbon nanotubes, fullerenes, graphene and nanocellulose. In aquatic environments, these carbon based nanomaterials are an integral component of many next generation environmental technologies (e.g. membranes), but concerns remain about their potential negative environmental implications (e.g. toxicity). In common with all nanomaterials, surface chemistry plays an important role in regulating the properties and behavior of carbon based nanomaterials due to their extremely large surface area to volume ratios. In my presentation I will show how fundamental, molecular level information on the surface properties of carbon based nanomaterials can be used as the basis to understand environmentally relevant properties, ranging from particle stability and contaminant sorption properties, to biodegradation and sustainability.

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 Physical Chemistry of Environmental Interfaces

Professor Vicki 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

- Please reserve _____ places for the symposium & banquet at \$135/person ACS member
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_____	_____
_____	_____
_____	_____

Indicate numbers in your group who choose: Chicken _____, Prime Rib _____, Salmon _____

Mail Tickets to:

Name: _____ E-mail Address: _____

Address: _____

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, February 15, 2019 (Electronic Board of Directors Meeting), Adelphi University, NY

Friday, March 8, 2019 (Board of Directors Meeting), Adelphi University, NY

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/>



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, February 5, 2019 and
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>



CHEMICAL MARKETING & ECONOMICS GROUP

IFF: Personal Care Innovation

Date: Thursday, February 7, 2019

Times: Registration and Networking –
11:15 AM - 12:00 Noon
Luncheon 1:00 Noon - 1:00 PM
Talk and Webcast 1:00 - 2:00 PM

Place: Penn Club
30 West 44th Street
New York, NY

(See flyer on page 9 for all details.)

ACS NY Section
CME**IFF: PERSONAL CARE INNOVATION**

CME ACS NY Luncheon/Webcast • Thu February 7, 2019 • Penn Club

Abstract

The fascinating personal care product market is expected to reach USD 650 billion globally by 2024 and is growing due to rising awareness of health and hygiene as well as scientific advancements. There are 4 highly notable trends occurring in the personal care space: Sustainability, Beauty within, Holistic microbiome, and Customized / Personalized beauty on demand.

Ingredients, sourcing and even packaging are becoming important to consumers. Driven by the sustainable movement in the food world, the personal care space is starting to mirror this trend with younger consumers placing growing importance on sustainable supply chains, traceability, and generally, trust in a product, trust in a company.

Consumers are starting to realize that beauty doesn't start and stop with what they put on their bodies, but what they put into their bodies. The microbiome, gut and skin alike has been one of the hottest topics in Personal Care. Scientific advances in data analysis and AI are rapidly bridging our understanding of how genes translate into microbiome chemistry and how that chemistry can promote "a better you." Lastly, personalization or customizable beauty is a trend that continues to rapidly evolve through technological discoveries and the added luxury that consumers consider worth a premium.

Join us on February 7 to learn what trends will help shape the face of Personal Care Innovation for the coming years.



International Flavors & Fragrances Inc.

Speaker: Auroon Majumdar, Director of R&D Strategy and Technology Scouting at International Flavors & Fragrances. His current responsibilities include pipeline strategy development, portfolio management and technology / capability scouting for IFF's Taste, Scent, and Nutrition businesses. Prior to joining IFF, Auroon spent 10 years at PepsiCo in a variety of different roles working across the company's multiple billion dollar food and beverage brands. Most notably during his tenure at PepsiCo, Auroon led the R&D platform for Starbucks Ready-to-Drink. Auroon holds a BE in Biomedical Engineering and a MS in Innovation Management from Stevens Institute of Technology. The crux of his expertise is anchored around Innovation and Technology Management and connecting market opportunities to product concepts by identifying the necessary enabling technologies to deliver against them.

**Event Schedule**

Location:
Penn Club
30 W 44th Street, NYC
Event Times: (ET)
11:15 am - 12:00 noon
Registration and
Networking
12 noon - 1 pm Luncheon
1 pm - 2 pm Talk - Webcast
Luncheon Fees
\$120 for non-members
\$90 for members
Check for Early-bird savings
Webcast: \$30. Free webcast
recording for ACS members

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LONG ISLAND SUBSECTION

Seminar Events for Spring 2019

Mechanisms of Opening and Closing of the Bacterial Replicative Helicase

Speaker: Dr. David Jeruzalmi
Professor of Chemistry and
Biochemistry
The City College of New York

Synopsis:

Assembly of bacterial ring-shaped hexameric replicative helicases on single-stranded (ss) DNA requires specialized loading factors. However, mechanisms implemented by these factors during opening and closing of the helicase, which enable and restrict access to an internal chamber, are not known. We have investigated these mechanisms through analysis of the structure of the *Escherichia coli* DnaB helicase•bacteriophage λ helicase loader (λ P) complex. We show that five copies of λ P bind at DnaB subunit interfaces and reconfigure the helicase into an open spiral conformation that is intermediate to previously observed closed ring and closed spiral forms; reconfiguration also produces openings large enough to admit ssDNA into the inner chamber. The helicase is also observed in a restrained inactive configuration that poises it to close on activating signal, and transition to the translocation state. Our findings provide insights into helicase opening, ssDNA entry, and closing in preparation for translocation.

Dr. Jeruzalmi will also discuss various exciting City College's NSF-REU (research experience for undergraduates) Opportunities.

Date: Thursday, February 7, 2019

Times: Social with Light Refreshments -
5:30 PM

Seminar Start: 6:00 PM

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

Place: Queensborough Community
College, Science Building
Room S-112

Directions:

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

WESTCHESTER CHEMICAL SOCIETY

Special Seminar – “Tripodal Ligands in Bioinorganic and Organometallic Chemistry: Carbon Dioxide Functionalization and Mercury Detoxification”

Speaker: Gerard Parkin, D.Phil.
Professor, Department of
Chemistry
Columbia University
New York, NY



Abstract:

Despite the fact that certain metal ions are essential for life, some are highly poisonous. For example, while zinc is essential for humans, as exemplified by its roles in carbonic anhydrase and

liver alcohol dehydrogenase, its congeners, cadmium and mercury, are most toxic. Synthetic analogues, i.e. small molecules that mimic the structure and function of enzymes, provide an important means to afford insight into the natural systems. Tripodal ligands provide a means to obtain such analogues and the research described will focus on the application of tripodal ligands in the chemistry of zinc and mercury. In addition, these ligands provide access to novel hydride compounds of zinc and magnesium that are capable of a variety of catalytic transformations. For example, these catalysts are capable of functionalizing carbon dioxide, a transformation that is of particular interest considering that carbon dioxide is a ubiquitous and typically inert compound.

Biography:

Gerard Parkin received his B. A., M. A., and D. Phil degrees from the Queen's College, Oxford University, where he carried out research under the guidance of Professor Malcolm L. H. Green. In 1985, he moved to the California Institute of Technology as a NATO postdoctoral fellow to work with Professor John E. Bercauw. He joined the faculty of Columbia University as Assistant Professor in 1988 and was promoted to Associate Professor in 1991 and to Professor in 1994. He served as Chairman of the Department from 1999 – 2002. He has also served as Chair of the New York Section of the American Chemical Society,

Chair of the Inorganic Chemistry and Catalytic Science Section of the New York Academy of Sciences, Chair of the Organometallic Subdivision of the American Chemical Society Division of Inorganic Chemistry, and Chair of the Gordon Research Conference in Organometallic Chemistry.

He is an elected Fellow of both the American Chemical Society and the Royal Society of Chemistry and is the recipient of a variety of international awards, including the ACS Award in Pure Chemistry, the ACS Award in Organometallic Chemistry, the RSC Corday Morgan Medal, the RSC Award in Organometallic Chemistry, the RSC Ludwig Mond Award, and the RSC Chem Soc Rev Lecture Award. He is also the recipient of the United States Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring, the United States Presidential Faculty Fellowship Award, the Columbia University Presidential Award for Outstanding Teaching, and the Lenfest Distinguished Columbia Faculty Award.

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

Date: Tuesday, February 12, 2019

Times: Refreshments 5:30 PM
Lecture 6:00 PM

Place: Westchester Community College
Gateway Building, Room 110
75 Grasslands Road
Valhalla, NY 10595

Cost: Free and 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.



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

**Extracellular Vesicles in Diagnostics
and Therapeutics**

Organizers: Richard A. Cerione, PhD
Cornell University

Jemy A. Gutierrez, PhD
Pfizer

Jorge Schettini, PhD
Pfizer

Claire Steppan, PhD
Pfizer

Gregory Tesz, PhD
Pfizer

Theresa Wilson, PhD
Pfizer

Alissa Weaver, PhD
Vanderbilt University School
of Medicine

Alison Carley, PhD
The New York Academy of
Sciences

Sonya Dougal, PhD
The New York Academy of
Sciences

Keynote Speaker: Xandra Breakefield, PhD
Harvard University

Speakers: Elena V. Batrakova, PhD
University of North Carolina,
Chapel Hill

Richard A. Cerione, PhD,
Cornell University

David C. Lyden, MD, PhD,
Weill Cornell Medical College

Harmeet Malhi, MBBS
Mayo Clinic

Susmita Sahoo, PhD
Icahn School of Medicine at
Mount Sinai

Johan Skog, PhD
Exosome Diagnostics, Inc

Alissa Weaver, PhD
Vanderbilt University School of
Medicine

In this symposium, we will review the most recent advances in extracellular vesicles (EV) research and their increasing impact on diagnostics and drug development for cancer, neurodegenerative disease, metabolic disease, and cardiovascular disease.

Date: Tuesday, February 19, 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

(continued on page 12)

BIOCHEMICAL TOPICAL GROUP

(continued from page 11)

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 January 8, 2019.**

For more information and to register for the event, go to: www.nyas.org/EV2019

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



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

Phase Separation in Biology and Disease

Organizers: Clifford Brangwynne, PhD
Princeton University

Jason Imbriglio, PhD
Merck

Neal Zondlo, PhD
University of Delaware

Sara Donnelly, PhD
The New York Academy of Sciences

Sonya Dougal, PhD
The New York Academy of Sciences

Speakers: Clifford Brangwynne, PhD
Princeton University

Zhijian "James" Chen, PhD
University of Texas,
Southwestern

David Cowburn, PhD
Albert Einstein College of
Medicine

Abby Dernburg, PhD
University of California,
Berkeley

Nicolas Fawzi, PhD
Brown University

Martin Jonikas, PhD
Princeton University

Tanja Mittag, PhD
St. Jude Children's Research
Hospital

Rohit Pappu, PhD
Washington University in
Saint Louis

Geraldine Seydoux, PhD
Johns Hopkins University
School of Medicine

This one-day symposium will bring together scientists from academia and industry to dissect the latest advances in the field of biological phase separation and discuss the implications for human disease.

Date: Wednesday, February 20, 2019

Time: 8:30 AM – 4:30 PM (reception to follow)

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

Cost: ACS and NYAS members save \$50 or more on this event. Please select the appropriate non-member Registration Category and use the Priority Code "ACS". **The Early Bird Discounted Registration deadline is January 11, 2019.**

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

www.nyas.org/PhaseSeparation

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



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.

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 lolani 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 re-

search 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 lolani 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, March 13, 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.



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Analysis:

Thermal		Defects
Polymers		Castings
Chemicals		Corrosion
Metal Phases		Quality Check
Contaminations		Product Failure
SEM - EDS		DSC - TGA
AUGER		ESCA
FTIR		XRD

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micronanalytical@compuserve.com

302-998-1184
www.micronanalytical.com
3815 Lancaster Pike Wilmington DE, 19805

WESTCHESTER CHEMICAL SOCIETY

FUTURE MEETINGS

Science Café – “Plastics: The Good, the Bad and the Ugly”

Speaker: Joseph W. Krumpfer, Ph.D.
Department of Chemistry
Pace University
Pleasantville, NY 10570



Biography:

Dr. Joseph W. Krumpfer received his B.S. in Chemistry at Seton Hall University in South Orange, NJ and his Ph.D. in Polymer Science and Engineering at the University of Massachusetts - Amherst. He was awarded a Post-Doctoral Researcher Fellowship at the Max Planck Institute for Polymer Research in Mainz, Germany. Currently, he is an assistant professor of Inorganic and Polymer Chemistry at Pace U., with research interests in conductive and light-emitting polyquinolines, silicone-inorganic oxide equilibration reactions, and pre-ceramic polymers and materials for high temperature applications.

Talk Summary

Dr. Krumpfer will introduce the effects of the environmental impacts of polymers, both positive and negative, along with recent advances in mediating polymer waste problems. He will also give a brief outlook into how these materials can solve many of the most pressing problems facing our society.

Date: Thursday, March 7, 2019

Times: Lecture and Discussion 5:30 PM (Snacks, coffee, tea, cold drinks freely available, as well as a cash bar.)

Place: Stone Manor Restaurant
101 Saw Mill River Rd. (Rte. 9A)
Hawthorne, NY 10532
1-914-703-4112

Cost: \$3.00 Students; \$5.00 All Others

For further information:

contact Peter Corfield

E-Mail: pcorfield@fordham.edu

Phone: 1-914-762-4468

Text: 914-980-9128 or

914-218-7607

Please RSVP by text or email to Peter Corfield if you expect to come, to help us plan. But if you do not RSVP, you can still drop by!

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.



LONG ISLAND SUBSECTION

Seminar Events for Spring 2019

FUTURE MEETINGS

The other scheduled seminars are as follows:

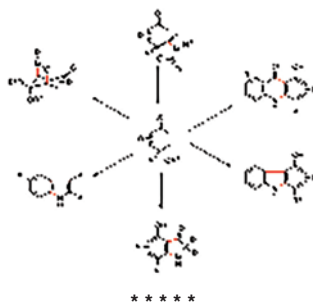
Heterocycle Syntheses from Quinoids

Speaker: Dr. Shengping Zheng
The Hunter College of CUNY

Abstract

Heterocycles are ubiquitous in nature and arguably the molecular basis of the pharmaceutical industry: Well over half of all known organic compounds and about 90% of new drugs are heterocycles. Our group is interested in developing new methodologies on the synthesis of different heterocycles from quinoids, such as quinone monoketals, quinone imine ketals, and quinols. These quinoids can be easily prepared in one step from the commercially available phenols or anilides by hypervalent iodine oxidation. Our group has developed new synthesis of acridones, isoxazolidines, indoles, carbazoles, pseudoindoxyls, and oxazolidinones from quinone monoketals and quinols in one or two steps.

Date: Thursday, March 7, 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

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LONG ISLAND SUBSECTION

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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 hAPP₂₂₋₂₉ as it has previously been shown with hAPP₂₂₋₂₉. Raman spectra of aggregates formed from hAPP₂₂₋₂₉ were distinctly different from those of hAPP₂₂₋₂₉ 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 hAPP₂₂₋₂₉ 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 hAPP.

Date: Thursday, April 4, 2019

For all these seminar events, the times and place are as follow:

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>



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

Adult Stem Cells and Regenerative Medicine

Organizers: Elaine Fuchs, PhD
The Rockefeller University
Michael Franti, PhD
Boehringer Ingelheim
John Hambar, PhD
Boehringer Ingelheim
Joerg Hoeck, PhD
Boehringer Ingelheim

George Zavoico, PhD
B. Riley FBR

Sara Donnelly, PhD
The New York Academy of
Sciences

Sonya Dougal, PhD
The New York Academy of
Sciences

Keynote Speaker: Elaine Fuchs, PhD
The Rockefeller
University

Speakers: Helen Blau, PhD
Stanford University School of
Medicine

Heinrich Jasper, PhD
Genentech

Carla Kim, PhD
Children's Hospital Boston,
Harvard Medical School

Mark A. Krasnow, MD, PhD
Stanford University School of
Medicine

Emanuelle Passegué, PhD
Columbia University Irving
Medical Center

Thomas Rando, MD, PhD
Stanford University School of
Medicine

Irving Weissman, MD
Stanford University School of
Medicine

This interdisciplinary symposium will convene leading experts in adult stem cell research, tissue regeneration and bioengineering to discuss cutting edge research at the intersection of these disciplines, with the overall aim of translating current stem cell knowledge into clinical applications.

Date: Thursday, March 14, 2019

Time: 8:30 AM – 6:00 PM
(reception to follow)

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

Cost: ACS and 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 February 1, 2019.

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

www.nyas.org/StemCells2019

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



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

See program on pages 6 and 7.

Date: Friday, April 12, 2019



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




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

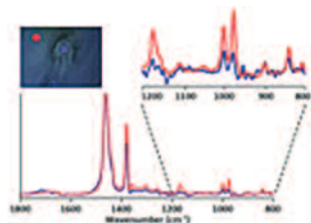
Perspectives on the Future of IR Spectroscopy: IR Beyond the Diffraction Limit at Submicron and Nanoscale Spatial Resolutions Via Photothermal Techniques.

By: Debbie Peru

The December meeting of the New York (New Jersey) Regional Section of the Society for Applied Spectroscopy (NYSAS) was held on December 5, 2018, in at the Horiba Optical Spectroscopy center in Piscataway, NJ. The guest speaker was Curtis Marcott one of the selected tour speakers offered by the Society of Applied Spectroscopy for the 2018 program.

Polymer Film Defect Identification

Optical image of a defect in a 240- μ m-thick isotactic polypropylene (iPP) film. Optical photothermal IR spectra collected in reflection indicate that the blue spectrum recorded from the defect region consists of less crystalline iPP than the red spectrum of iPP collected outside the defect region.



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

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Curtis Marcott is currently a Senior Partner at Light Light Solutions, a spectroscopic consulting firm. A former research fellow at Procter & Gamble, and 2011 President of the Society of Applied Spectroscopy and member of the Editorial Advisory Board of Applied Spectroscopy. Dr. Marcott is currently an Affiliated Professor of Materials Science and Engineering at the University of Delaware and an Adjunct Professor in the Department of Chemistry and Biochemistry at Miami University in Oxford, OH.

In this presentation, Curt discussed how spectral data provides fast, easy access to rich information regarding a molecules history and interaction with other molecules in a system. "The problem is that there is a significant amount of effort involved in interpretation" Curt further describes three major limitations of mid infrared that has limited its usefulness for solving real world problems:

1. The spatial resolution is limited by diffraction physics to around 5 μm .
2. Thin (or diluted) samples are needed in order to minimize IR band saturation.
3. Reflection measurements off non-metallic samples typically produce weak signals with distorted spectral line shapes, unless performed using attenuated total reflectance (ATR).

In this talk, Curt briefly discussed the evolution of mid infrared spectroscopy over the past 50 years and focused the discussion on a new breakthrough approach that uses the photothermal infrared (PTIR) response of the sample while eliminating virtually all of the limitations discussed previously. The miRage™ IR Microscope is an innovative new approach that bridges the gap between conventional IR microspectroscopy and nanoscale IR spectroscopy. The device uses a tunable pulsed mid-IR laser to induce a photothermal effect into a sample surface, which is subsequently measured using a visible probe laser focused on the sample. Applications of Mirage discussed included characterization of polymer layers in packaging, bone cross-sections, amide I and amide II orientation in spider silk, and wafer and nucleic acid analysis of epithelial cheek cells.

We had 28 people attend the meeting at Horiba and in addition, we extended an invitation to the New England Regional section of SAS to attend on line. We had 4 additional members attend on line. At the end of the presentation, Curt was presented with an SAS t-shirt, baseball hat, and NYSAS custom designed prism as a token of thanks from the group.

More information about NYSAS schedule of meetings can be found at www.nysas.org.



LONG ISLAND SUBSECTION'S 2018 HOLIDAY SEMINAR

The Long Island ACS (LIACS) Subsection's 2018 Holiday Seminar took place on Thursday, December 6, 2018 from 6:00 PM to 8:00 PM in the CCB Building Room 251/252 of the Nassau Community College, Uniondale, NY.

The Seminar featured Professor Paris Svoronos who gave an enlightening presentation on "The History and Chemistry Associated with the Use of Lethal Gas Weapons during World War I" to a large audience, mixed with area college students, chemistry faculty members and industrial chemists. Dr. Svoronos described the historical sequence of the large scale use of lethal gas, such as tear gas, chlorine, phosgene, mustard gas, during World War I (1914-1918) and their adverse biological effects on the victims. He used the basic chemical principles college students would have learned during their first two year chemistry courses to explain the makings and properties of these gases. At the conclusion, he stressed the importance of using one's intelligence and learned knowledge responsibly to benefit mankind and not to harm it. His presentation received extended applause.

As the last event of the LIACS 2018 Programming, Dr. Dominic Hall and Dr. Kevin Kolack

presented an Outstanding Leadership Plaque to Dr. Adejare Adeniran, the 2018 LIACS Chair, for the time and efforts he generously put in successfully leading the Subsection with a wide range of meetings, events, and seminars. The Holiday Seminar then ended with a raffle, raffling off various chemistry t-shirts, periodic table blankets, electronics, etc., and with the air filled with laughter, happy surprises, and good wishes.



Photos taken during LIACS 2018 Holiday Seminar.

(Photos by Paul Sideris and Ping Furlan)

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

January 28, 2019

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

WESTCHESTER CHEMICAL SOCIETY

On December 6, 2018 Mr. Edward J. Neren spoke on "Mitochondrial Reactive Oxygen Species Non Toxic Integrative Anticancer Therapy Option for Solid Tumors Unresponsive to Traditional Therapy: Palladium/Lipoic Acid Complex". Mr. Neren is a biomedical/pharmaceutical consultant/contractor with Neren & Co. / NerenPossible Services, 3 Belvedere Path, Suffern, NY 10901, which he founded. His contact information is:

Phone: 1-845-357-6039 • E-Mail: eneren@optonline.net

This talk was based on Mr. Neren's presentation at the UMDF Mitochondrial Medicine 2018 Symposium in Nashville, Tennessee, June 27-30, 2018. He spoke on the use of an integrative, alternative, nutritional therapy, a complex of palladium with alpha lipoic acid (PdLAC), along with Coenzyme Q10 (CoQ10. Ubiquinol), Vitamin D₃ and multivitamins containing zinc and magnesium as a "Plan B" for late stage solid tumor patients for whom traditional chemotherapy and/or radiotherapy has failed. This is a nutritional, not a pharmaceutical and, so, is not cleared by FDA as a drug. PdLAC is available commercially as PolyMVA from AMARC, San Diego, CA. Although not an approved drug, it is manufactured in accordance with FDA's Good Manufacturing Practice standards. It is intended for use under the guidance of a physician. It has not been studied in double-blind random clinical trials but there is considerable anecdotal, scientific (cell line studies) evidence supporting its use beginning with a 1992 University of Toronto study, under R. Falk, M.D., that found many remissions in gravely advanced cancer cases. PdLAC migrates into the mitochondria of cancer cells facilitating the generation of reactive oxygen species (ROS). The ROS are toxic to cancer cells when they enter the anaerobic cytoplasm. Cell line studies using PdLAC have been shown to facilitate cell death in a variety of tumors (including melanoma, liver, lung, breast, prostate, colon, brain and pancreas). Outcome based Stage IV studies, including over 500 patients with multiple cancer types, conducted by J. Forsythe, M.D., found that stable disease could be tolerated and transformed into a chronic, livable condition. He reported a 33% survival rate at 5 years (32% at 6 years). Several other studies, with consistent results, were also discussed. In conclusion, the PdLAC/CoQ10/Vitamin D₃ option taken orally as a nutritional shows positive results within three months with minimal patient risk, within palliative care, good medical practice and ethical and FDA guidelines and the legal obligations of a physician, hospital or hospice. A prescription is not required and it is essential that the patient be physician monitored. This approach should not be used to circumvent traditional therapy. The option is a means of slowing, stopping or reducing tumor growth, with the patient having more energy and an improved quality of life. Mr. Neren noted that PolyMVA is discussed, along with other alternative therapies in a book "Outside the Box Cancer Therapies: Alternative Therapies That Treat and Prevent Cancer," by M. Stengler and P. Anderson (available from Amazon). There was a lively question and answer period after the talk, which was given at the Westchester Community College in Valhalla, N.Y.

Mr. Neren received his B.S. from Temple University, Philadelphia, PA. He was a Research Associate in the Department of Biochemistry at the Temple University School of Medicine and in the Department of Hematology at the Temple University Hospital. He subsequently worked at the Technicon Instruments Corp. (now Siemens Healthineers), the BMC Corporation, the Garnett McKeen Laboratories and the American Association for Clinical Chemistry (AACC). In 2008, he became president of Balneology Products, Inc. (note balneology is the study of therapeutic springs). Mr. Neren is also a balneotherapist and briefly discussed balneotherapy). He also founded Neren & Co./NerenPossible Services, to which he currently devotes his time.

After the talk Mr. Neren and several of the attendees enjoyed a dinner together at a nearby restaurant. The photo on the left is of Mr. Neren and the other WCS board members who attended the meeting.



Joseph Krumpfer, Paul Dillon, Edward Neren, Jody Reifenberg, Peter Corfield and Rolande Hodel

(Photo courtesy of Paul Dillon)

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, February 25, 2019

Time: 6:30 - 8:30 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, February 20, 2019.**



NMR TOPICAL GROUP JANUARY MEETING



The NMR Topical Group will host its kick-off meeting of 2019 on **Wednesday, January 16, 2019** at Rutgers University. Dr. Justyna Sikorska, the new co-chair of NMR Topical Group in 2019, is going to join the group as the evening speaker. Justyna is an NMR spectroscopist at Merck &

Co., Inc. with her research interests comprising different aspects of drug discovery process. She has worked in different stages of drug discovery process ranging from identification of new drug leads to optimization of their binding pharmacophore and establishment of their structure-activity relationships. Justyna is going to present the highlights of her research work including the biological testing, isolation, structure elucidation of natural products as well as the development of Intermolecular NOEs for Pharmacophore Mapping (INPHARMA)

method enabling determination of the ligand binding mode.

If you are interested in joining us, or have any ideas or suggestions for us, please contact us at qi.gao1@merck.com and justyna.sikorska@merck.com. We are looking forward to another great year.

Qi Gao and Justyna Sikorska

Next Meeting: Wednesday, February 13, 2019, at Princeton University.



CHEM TAG

Speaker: Ilze Kancans

The topic will use the NGSS Task prescreen, https://www.nextgenscience.org/sites/default/files/resource/files/Achieve%20Task%20PreScreener_Final_9.21.18.pdf and the task screener <https://www.nextgenscience.org/resources/science-task-screener> to go over existing projects, labs, etc to see how they fit in to NGSS.

Date: Tuesday, March 5, 2019

Place: New Providence High School



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
Sokol Seminar Room
(Science Hall 102)
Montclair, NJ

Cost: Free of charge

2018 ACS AWARD FOR CREATIVITY IN MOLECULAR DESIGN AND SYNTHESIS

On **Thursday, November 30, 2018**, at the Palace in Somerset, NJ, the Organic Topical Group hosted the 2018 ACS Award for Creativity in Molecular Design and Synthesis. Dr. Ann Weber, Senior Vice President – Drug Discovery at Kallyope Inc, was recognized for her pioneering work in drug discovery, leading to the discovery of innovative therapeutic agents, and her strong advocacy for women in chemistry. Notably, Dr. Weber is the first woman and second industrial chemist to win the award. The symposium featured numerous networking opportunities and seminars from Professor Jon Ellman of Yale University, Dr. Emma Parmee of Merck Research Labs, Professor Vy Dong of University of California-Irvine, Professor Christina Woo of Harvard University, and Professor Greg Fu of Caltech. The award address from Dr. Weber highlighted the medicinal chemistry that was key to the discovery of vibegron, JANUVIA®, and MARIZEV® during her time at Merck Research Labs, as well as her current work at Kallyope. The Organic Topical Group would like to congratulate Dr. Weber and thank the speakers and attendees for a wonderful day of science.



Dr. Ken Fraunhoffer, Chair of the Organic Topical Group, presents the 2018 ACS Award for Creativity in Molecular Design and Synthesis to Dr. Ann Weber

(Photo courtesy of Dr. Steve Silverman)



The Organic Topical Group committee members and speakers after the award symposium. Pictured from left to right are: Prof. Yalan Xing, Prof. Greg Fu, Dr. Mike Zacuto, Prof. Enver Izgu, Dr. Emma Parmee, Dr. Mike Smith, Dr. Ann Weber, Dr. Sue Zultanski, Dr. Ken Fraunhoffer, Prof. Jon Ellman, Prof. Vy Dong, Prof. Christina Woo, and Dr. Steve Silverman.

(Photo courtesy of Dr. Jake Janey)

NORTH JERSEY WOMEN'S CHEMISTS COMMITTEE (NJWCC)

From Sniff to Sip: A Sensory Adventure into the Fragrance of Wine

The North Jersey Women's Chemists Committee (NJWCC) in conjunction with the North Jersey Section of the American Chemical Society (NJACS) hosted our first installment of our women's entrepreneur series. From Sniff to Sip: A Sensory Adventure into the Fragrance of Wine was held on December 12th at Vibe in Riverdale Square Mall. The all-inclusive event held 50 attendees from a variety of backgrounds such as the ACS, Eastern Analytical Society (EAS), Women's Flavor and Fragrance Committee (WFFC), and Society for Cosmetic Chemists (SCC) as well as non-scientists and their families with backgrounds in acting, firefighting, nursing and web design to name a few. The crowds' diversity allowed for some very fun and lively discussions on the wines, the fragrances and what memories and feelings they invoked.

Our two speakers, Kelly Jones and Heidi Bonwell traded off stories and colorful tips about wine and fragrance throughout the event where guests were able to sniff Kelly's amazing wine fragrances while sipping some of Heidi's expertly selected wines. The scents and wines complimented each other and brought out the best in each for a unique sensory experience for all of the guests.



Scent Sommelier Kelly Jones', the founder of Kelly+Jones, <https://www.kellyandjones.com> unique perspective on wine took away the stuffiness for wine beginners while taking the game up a notch for the experienced wine connoisseur. Kelly shared her passion for fragrance, how it got her kicked out of a wine tasting room and inspired her to start her own company. Kelly showed our guests how to get the most out of a fragrance, how to use the instruments of the trade and what inspired her unique fragrances. Kelly + Jones is a boutique fragrance brand featuring olfactive experiences inspired by the vineyard and beyond. Kelly has been featured in Food and Wine, Wine Enthusiast and on The Today Show.



Heidi Bonwell is the Regional Manager Tomasello Winery <http://www.tomasellowinery.com>. Heidi's passion for wine began in 1990 as an exchange student in Australia. She started growing her palate and knowledge base while living in Benalla, Victoria where she was able to visit many of the wineries in the state. Heidi is certified with distinction as a Wine & Spirits Education Trust, Level 2 (WSET 2) expert and is regional manager at Tomesello Winery. Heidi shared her passion for wine, how she turned it into a rewarding career and some tricks of the trade on all things wine- starting with to how to get the most out of that first sip, what is the best temperature to bring out the best flavor and how to properly store left overs.

A few comments from our attendees:

"Attending the event was insightful and captivating. The wine representative explained in detail each wine sample and food items that could accompany both the whites and the reds. Furthermore, having the aromatic representative explain many scents and their relationship to taste, made the evening event engaging." *K. Jarotski*

"The sniff and sip was very informative for beginner wine drinkers. For example I did not know you were not supposed to wear perfume to a wine tasting. I never thought that the smell of my perfume could influence the taste of wine." *L. Gillespie*

"I know very little about wine and was not sure what to expect at the event. I was very pleasantly surprised by all the things I learned about wine and the creation of different fragrances. Both presenters were knowledgeable and enthusiastic about their areas of expertise. The beautifully decorated venue also added to the entire experience." *L. Sofia*

(continued on page 24)

NORTH JERSEY WOMEN'S CHEMISTS COMMITTEE (NJWCC)

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"The very creative topic is what attracted me to attend the event. When I entered the venue on the evening of the Sniff and Sip event I was highly satisfied by the open space to mingle with the other attendees as well as the speakers and the committee members. I was also very impressed by the way the space was used and how beautiful the tables and bar area looked; it very much matched the theme of the night. Everyone was very friendly and seemed like-minded as we were all open to learning. I really learned so much more than just about fragrances and wine; lots of tidbits of information from the presenters and the questions asked by the attendees. I was especially grateful when Lauren taught us all how to properly use a fragrance blotter. It all exceeded my expectations and I cannot wait for the next event!" *R. Adwar*

A special thank you to **our sponsors** and to the people who donated to Tackle Kids Cancer



and helped us to raise over \$150 for the cause. <http://www.tacklekidscancer.org/>. The Children's Cancer Institute at Hackensack University Medical Center started an initiative to raise funds and awareness for pediatric cancer patients called Tackle Kids Cancer.

Please visit our website <https://www.njacs.org/topical-groups/women-chemists> to get



more information on the wines and fragrances from the Sniff and Sip event and more tips from our experts as well as learn more about other upcoming events.





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!

Call for Applications

FREDDIE AND ADA BROWN AWARD

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

Award Amounts

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

Who is Eligible

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

Grades

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

Letter of Recommendation

Math or Science/Chemistry Teachers or Guidance Counselor

Statement

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

Selection Criteria

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

Transcript

Official transcript required.

Financial Need

Not Required.

Applications available on the web:

www.njacs.org/freddieadabrown

or from your school guidance office.

Return Application To

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

Due Date

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

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

Call for Nominations

COMMITTEE ON THE HISTORY OF THE NEW YORK SECTION

Over the past twenty-three years the New York Section has participated in the designation of seven National Historic Chemical Landmarks and four New York Section Historic Chemical Landmarks. A brief description of these National and local section landmarks may be found on the NY Section Home Page at 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.

In the News

SYRRIS ORB DELIVERS CONTROLLED SYNTHESIS OF ACTIVE INGREDIENTS

An Orb jacketed reactor from Syrris is helping Italian company NIS Materials to reproducibly synthesize new materials used as active ingredients for products such as paints, polymeric coatings and concrete. Marco Marchetti, founder and CEO, explained: "Currently, we do a lot of work with the building and construction sector, synthesizing active ingredients with specific properties – for example, antibacterial or anti-odor products – for use in paints and coatings. Moving forwards, we plan to use our background in biomaterials to expand into biomedical applications. Reproducible synthesis depends on strict control of reaction parameters such as pH, temperature, time and rate of reagent addition, which can all affect the properties of the active ingredient. It is particularly important to control the reaction pH, temperature and stirring, since even slight changes can compromise the end product."

"The Orb is easy to set up and use, and offers exceptional control of pH and other reaction parameters, enabling us to continuously optimize our processes. To increase the level of automation, we use the Orb with a Syrris Atlas syringe pump and a Reactor Master module – a user-friendly device that allows us to set up reactions, store and analyze experimental data, and compare different synthesis profiles. We also have the Reactor Master PC software for occasions when full PC control is preferred. I am very satisfied with the Orb. It offers the control and reproducibility that is vital to all of our experiments, and is the best system in the marketplace."

For more information, visit <https://syrris.com/product/orb-jacketed-reactor>

National

LET ACS PLAN YOUR NEXT CHEMISTRY EVENT FOR FREE!

One-hundred and fifty years ago, Dmitri Mendeleev first presented his periodic system to the Russian Chemical Society, forever shaping the way we look at the elements. His system, which organized the elements based on atomic weight, valence, and measurable properties, laid the foundation for today's Periodic Table. In honor of this, The United Nations has declared 2019 to be the International Year of the Periodic Table.

Register now to join hundreds of groups from around the U.S. and the globe for a live celebration of one of chemistry's greatest achievements. Explore the early efforts of scientists to organize the elements, be the first online to answer elemental "Table Trivia," and meet the scientists who are expanding the table by discovering new super-heavy elements.

Register Your Group for Free

What Your Group Will Learn

What were the conflicting proposals from around the world for how the elements should be organized and why did our current system rise to the top?

Be the hero of your next party with "Table Trivia" from ACS Reactions!

How were the most recent, super-heavy elements discovered and does the Periodic Table have any more room to grow?

More information coming soon...

What is ACS Program-in-a-Box?

ACS Program-in-a-Box is the easiest event you'll ever host because "it's all in the box." With very little effort (acquire the space and gather the crowd), you can host an energetic science event that engages chemistry students and early career chemists.

Register now to receive a physical box of materials and resources delivered directly to you at no cost and a link to join the live interactive video on **February 26th** at 6:45pm ET.** Learn more and sign up at www.acs.org/PIB

**ACS Program-in-a-Box is now international! If you are an active ACS International Chemical Sciences Chapter or ACS International Student Chapter, you may qualify to receive a physical box. Register above and we will contact you to confirm eligibility and shipping information.

Physical boxes are an exclusive benefit for active ACS-affiliated groups (Student Chapters, ChemClubs, Local Sections, etc...) All other groups will receive a digital download of box materials. **Physical boxes can only be shipped to non-P.O. Box addresses. The ACS PIB team will contact you after registration to confirm your shipping eligibility and information. If you have any questions about your group's eligibility for receiving a box, please contact us at multimedia@acs.org.

Featuring

Carmen Giunta
Le Moyne College

Alexa Billow
ACS Reactions

Samuel Lemonick
C&EN



**INTERNATIONAL
YEAR OF THE
PERIODIC TABLE
2019**