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Keary Engle, Ph.D.
2023 Leo Hendrik Baekeland Awardee
See page 19

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THE INDICATOR

Editor
DR. BRIAN GIBNEY
brg33@newyorkacs.org
Associate Editor
DR. KATHLEEN GILBERT
kgilbert@njacs.org
Acting Advertising Manager
DR. NEIL JESPERSEN
Phone 516-883-7864 • Cell: 347-658-9898
jespersn@stjohns.edu

INDICATOR COMMITTEE

Chair
DR. BRIAN GIBNEY
brg33@newyorkacs.org
New York Section Representative
DR. NEIL JESPERSEN
jespersn@stjohns.edu
North Jersey Section Representative
DR. JUSTYNA SIKORSKA
justyna.sikorska@merck.com

SECTION WEB MASTERS

NY Section – DR. BRIAN R. GIBNEY
postmaster@newyorkacs.org
NoJ Section – Pending

NORTH JERSEY SECTION https://www.njacs.org

Chair, DR. SANDRA KEYSER
Senior Safety Specialist, Merck
Rahway, NJ 07065
732-939-6412 • skeyser@njacs.org
Chair-Elect DR. ROBERT MENGER
Associate Scientific Director,
Bristol Myers Squibb,
556 Morris Avenue, Summit, NJ 07901
908-934-4384 • robert.menger@bms.com
Secretary, BETTYANN HOWSON
49 Pippins Way, Morris Township, NJ 07960
973-822-2575 • chemphun@gmail.com
Section Office
49 Pippins Way, Morris Township, NJ 07960
973-822-2575 • chemphun@gmail.com

NEW YORK SECTION http://newyorkacs.online/

Chair, DR. PING Y. FURLAN
US Merchant Marine Academy
300 Steamboat Road, Kings Point, NY 11024
516-726-5783 • furlanp@usmma.edu
Chair-Elect, DR. ERIC CHANG
Pace University
Department of Chemistry and Physical Sciences
One Pace Plaza, New York, NY 10038
(212) 346-1425 • echang@pace.edu
Secretary, DR. DANIEL AMARANTE
Mercy College
School of Health and Natural Sciences
555 Broadway, Dobbs Ferry, NY 10522
damarante@mercy.edu
Section Office, BERNADETTE TAYLOR
Office Administrator
St. John's University, Dept. of Chemistry,
8000 Utopia Parkway, Queens, NY 11439
732-770-7324 • btaylor@NewYorkACS.org

THE Indicator

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The monthly newsletter of the New York & North Jersey Local Sections of the American Chemical Society. Published jointly by the two sections and distributed to their 6,200 members.

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April 2024	March 16, 2024
May 2024	April 16, 2024
June 2024	May 16, 2024
September 2024	August 16, 2024

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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 Local Sections of the American Chemical Society unless so stated.

THIS MONTH IN CHEMICAL HISTORY

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

I continue to look back at the new chemistry of 90 years ago as reflected in the pages of The Chemical Society's Annual report for 1934 (Volume XXXI) published in London in 1935.

Work by Hieber, Manchot and others has led to a considerable increase in understanding of metal carbonyls, nitrosyls, and related compounds. Five monometallic carbonyls of the transition elements are known. The first, discovered by Mond, is nickel tetracarbonyl, $Ni(CO)_4$. The others are chromium, molybdenum, and tungsten hexacarbonyls, and iron pentacarbonyl. Langmuir in the 1920s pointed out that in these volatile carbonyls it appears that each CO contributes 2 electrons to the central metal atom allowing it to reach the number of electrons in the next noble gas. Consequently, monometallic carbonyls are not formed by elements of odd atomic number; cobalt "tetracarbonyl" is actually a dimer, $Co_2(CO)_8$. Sidgwick has published a book "The Covalent Link" summarizing his and co-workers theoretical work on these compounds. They conclude that the co-ordination of carbon monoxide is through the binding of the carbon atom to the metal. This is supported by measurements of dipole moments; interatomic distances; heats of formation; force constants, and the parachor.

Stock has published a book summarizing his Baker lectures at Cornell University on the hydrides of boron and silicon. This includes some 80 papers by Stock, his collaborators, and others. The boranes isolated from reaction between magnesium boride and phosphoric acid belong to two series: the more stable B_nH_{n+4} including diborane, n = 2; and the less stable hydroboranes, B_nH_{n+6}. I now quote from the reporter: "The structure of B_2H_6 is a perpetual puzzle, and in spite of the great ingenuity displayed by numerous writers, it appears that no completely satisfactory solution has yet been reached. " The UV absorption spectrum of diborane resembles that of ethylene rather than that of ethane; and that of B_4H_{10} has similarities to that of butadiene! When the ammonia addition compound of diborane is heated to 200^0 for several hours the very stable $B_3N_3H_6$ (borazine). Is obtained. This appears to be an inorganic analog of benzene with alternating boron and nitrogen atoms in the ring.

Two types of natural diamond have been discovered that differ in some of their physical properties. A laminar type is transparent in the UV up to 2250 Å; the ordinary diamond is opaque in the UV below 3000Å. There are also differences in electrical conductivity. X-ray diffraction studies indicate that the newly discovered laminar diamonds have a mosaic structure and are more optically isotropic than ordinary diamond. Density, refractive index, dielectric constant, and Raman effect are identical for both types. The investigators believe that the differences are not due to trace impurities.

Reactions between sulfur and chlorine, studied by Lowry and his collaborators during recent years, have produced a series of compounds whose structures are slowly being elucidated, "Sulfur monochloride" S_2Cl_2 is probably a mixture of two forms: ClSSCl and $SSCl_2$. Sulfur tetrachloride, SCl_4, seems to be polar and may best be formulated as $(SCl_3)^+Cl^-$. A new chloride S_3Cl_4 has been isolated. Its structure is believed to be $[(ClS)_2SCl]^+Cl^-$.

If you are waiting for some long overdue insights into new organic chemistry in 1934 please be patient. I promise you that in my next and final installment.

March Calendar

NEW YORK SECTION

Sunday, March 3, 2024
The Chemistry of Love
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Thursday, March 7, 2024
Long Island Subsection
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Thursday, March 7, 2024
Westchester Chemical Society
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Board of Directors Meeting
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NYACS Nanoscience Discussion Group
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Hudson-Bergen Subsection
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NORTH JERSEY SECTION

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North Jersey Executive Committee Meeting
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North Jersey Chromatography Group
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Thursday, March 21, 2024
North Jersey NMR Topical Group
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SAVE THE DATES

Thursday, April 11, 2024
NJACS Drug Metabolism Discussion Group
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Friday, April 12, 2024
2023 Baekeland Award Symposium
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Stay in the know.

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NEW YORK SECTION MEETINGS

http://www.newyorkacs.online

2024 NEW YORK ACS BOARD MEETINGS

The New York ACS Board of Directors meetings dates for 2024, are, as follows:

Monday, March 11, 2024 (hybrid)
Friday, April 12, 2024 (in person)
William H. Nichols Distinguished Symposium and Medal Award Dinner
The Sonesta Hotel, White Plains, NY.
Monday, June 10, 2024 (hybrid)
Monday, September 16, 2024 (hybrid)
Monday, November 25, 2024 (hybrid)

These meetings will be held on the campus of the United States Merchant Marine Academy in Kings Point, NY (directions) in the Library's Crabtree Conference Room. These meetings are open to all members, however, an RSVP for in-person attendance is required 5 days before the meeting, i.e. the Wednesday before the Monday meeting. All members who would like to attend any of the meetings should inform the New York Section office by emailing Ms. Bernadette Taylor. Prof. Ping Furlan will Chair all meetings. The meetings will start at precisely 6:30 PM.

More information will be posted in future monthly issues of *The Indicator* and on the New York ACS website.

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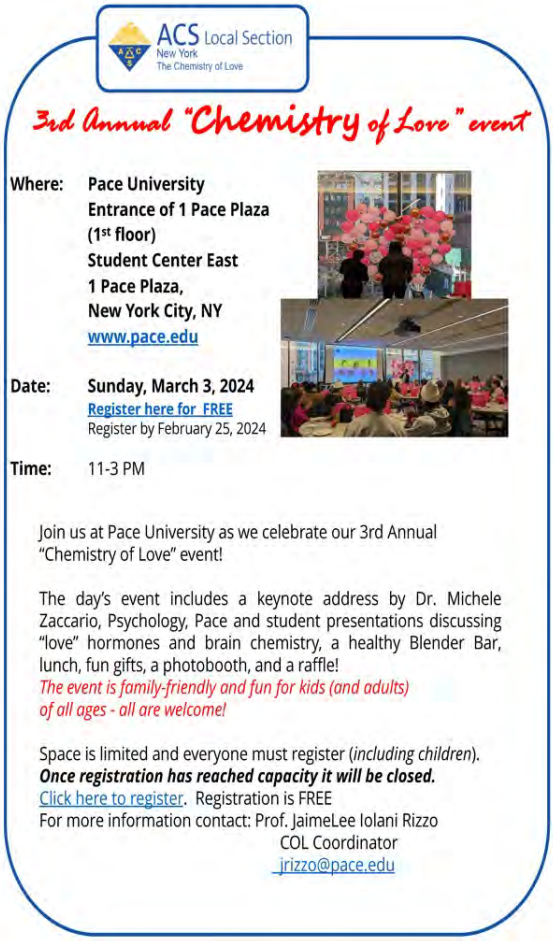


THE CHEMISTRY OF LOVE

Celebrate the Chemistry of Love with with a fun-filled and informative discussion of love, the most fundamental human need. The day's event includes a keynote address by Dr. Michele Zaccario, Psychology, Pace and student presentations discussing "love" hormones and brain chemistry, a healthy Blender Bar, lunch, fun gifts, a photobooth, and a raffle!
Registration is FREE for this in-person event, but *seats are limited* so register early.

Speaker: Dr. Eric Chang
Pace University

Date: **Sunday, March 3, 2024**

Place: Pace University
Time: 11:00 AM – 2:00 PM
Registration is required

2024 WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM & AWARD BANQUET

PHYSICAL CHEMISTRY AND SUSTAINABILITY

A distinguished symposium honoring

Professor Emily A. Carter
Princeton University

for groundbreaking quantum insights in sustainable catalysis

Date: Friday, April 12, 2024
Sonesta Hotel, White Plains, NY
Hotel website

Time: 1:30 PM – 9:00 PM
Download Brochure here
Register here

Symposium Program

1:30 PM **Welcome**
Professor Ping Furlan, 2024 New York ACS Chair, US Merchant Marine Academy

1:35 PM **Opening of the Distinguished Symposium**
Professor Eric Chang, 2024 New York ACS Chair-Elect, Pace University

1:45 PM **Computational Discovery of Metal-Organic Frameworks for a Changing World**
Professor Laura Gagliardi, University of Chicago

Addressing the energy challenges that we face globally requires the coordinated efforts of scientists, engineers, and policy makers. Chemistry has the potential to drive quantum leaps in technology. With theory, computation, and machine intelligence we can accelerate the search for solutions to water scarcity, decarbonization, and clean energy. Metal-organic frameworks (MOFs) are versatile platforms for various applications including catalysis for complex reactions and water harvesting. I will first present our ongoing efforts to understand and design the water-filling mechanism for water-harvesting MOFs.[1]I will then describe our combined computational and data-driven study of MOF-supported catalysts. Utilization of machine learning algorithms in conjunction with experimental data can not only predict superior catalytic materials, but also under which experimental conditions they are most optimal.[2].

2025 WILLIAM H. NICHOLS MEDAL – CALL FOR NOMINATIONS

The New York ACS solicits nominations for the 2025 William H. Nichols Medal, the first award established by the American Chemical Society. Since 1903, the Nichols Medal has honored a chemical scientist for outstanding original research.

Nominations for the 2025 Nichols Medal are due May 31, 2024

Supported in part by the William H. Nichols Fund For Chemistry at the Boston Foundation

2024 WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM & AWARD BANQUET (continued)

2:30 PM **Designing Metal-Oxide-Based thermochemical Redox Materials and Processes: Solar Fuels and Energy Storage (continued)**
Professor Ellen Stechel, Arizona State University

In this talk, we unveil cutting-edge developments in metal oxide-based thermochemical redox materials and processes[1], applicable to solar fuels and energy storage. We start by exploring how the high-temperature endothermic reduction of redox-active metal oxides, capable of releasing oxygen gas under achievable operating conditions, effectively converts thermal energy into stored chemical energy. A subsequent re-oxidation step then either recovers this energy as heat or drives further chemical reactions. The ability to indefinitely repeat these two steps opens the door to sustainable energy cycles. Here we will focus on two interrelated processes: reversible re-oxidation with oxygen and bond-breaking re-oxidation with CO2 and/or water. This presentation will also highlight the groundbreaking design of a novel perovskite metal oxide material, Ca2/3Ce1/3Ti1/3Mn2/3O3 (CCTM2112), specifically engineered for enhanced thermochemical hydrogen production. This material, predicted solely from theoretical considerations and validated experimentally, showcases a unique cation redox chemistry. Utilizing quantum-based modeling [2], we reveal how the deliberate manipulation of cation composition on both A and B sub-lattices leads to a material with optimal oxygen vacancy formation energies and superior redox dynamics to facilitate splitting of water and carbon dioxide. This presentation will delve into the intricacies of CCTM2112's thermodynamics, demonstrating its potential. Our findings not only introduce a high-performing material but also open new avenues in the design of redox-active materials through a deep understanding of their electronic characteristics.

3:15 PM *Coffee Break*

3:45 PM **Observing Molecular Transport through Living-Cell Membranes – Pushing the Boundary of Physical Chemistry toward Biology**
Professor Hai-Lung Dai, Temple University

Why should we store food in refrigerator to avoid bacteria contamination? But why refrigeration cannot keep the food fresh for a long period of time? How do bacteria develop antibiotic resistance? How are vesicles used for delivering mRNA vaccines into human body? All these questions can find answers from understanding molecular transport through cell membranes. Nonlinear light scattering in the form of Second Harmonic Generation, due to its symmetry properties, has been proven effective for observing molecular adsorption and transport at the surfaces of colloidal objects, including living biological cells. This method affords membrane specificity, real time resolution, and the ability to image single cells in examining molecule-membrane interactions. This talk will lay out the basic physical principles of the newly developed Second Harmonic Light Scattering (SHLS) method and illustrate how SHLS can be applied to examine molecular adsorption and transport at cell membranes. In addition to answering the questions above, this method has been used to determine the fundamental mechanism of the century-old Gram stain for classifying bacteria, understand effects of molecular structure and membrane structure in influencing molecular transport through cell membranes, and characterize membrane phase transition and membrane asymmetry.

Supported in part by the William H. Nichols Fund For Chemistry at the Boston Foundation

2024 WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM & AWARD BANQUET (continued)

4:30 PM **A Physical Chemist's Journey to Combat Climate Change**
Professor Emily A. Carter, 2024 Nichols Medalist, Princeton University

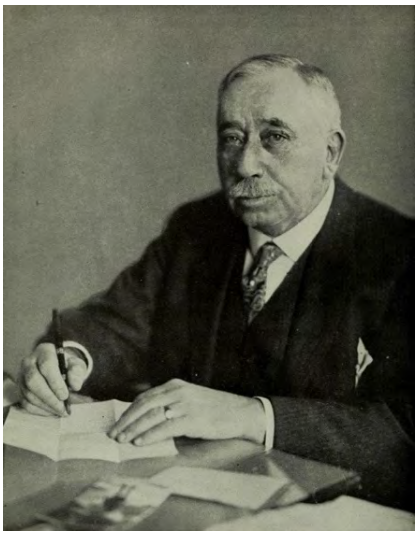
When I first became fully cognizant of what fossil fuel burning was doing to our planet, I vowed to use my expertise full-time to transition the world to sustainable energy. But now it is terribly clear that to preserve the planet for future generations, this action – far from complete - is not nearly enough. We must stop emitting carbon into the atmosphere from all sectors, aiming not just for net-zero but net-negative emissions. More than 15 years ago, I pivoted my quantum simulation research to design materials for clean electricity (solar cells, fusion, fuel cells). More recently, we design catalysts for renewable fuels and chemicals production, via electro-/solar-thermo-chemical water splitting and photo/electro/solar-thermo-chemical carbon dioxide reduction. However, recycling CO_2 is not enough; we must develop sustainable processes to convert and store CO_2 in useful, durable products. I will describe our quantum embedding simulation methods that accurately simulate sustainable production of fuels and chemicals catalytically using electricity and/or light, and introduce its use for studying processes related to direct ocean capture of CO_2 to form minerals, a strategy for getting to negative emissions.

5:45 PM *Social Hour*

6:45 PM **Medal Award Dinner**

Presiding;	**Dr. Ping Furlan** 2024 Chair, ACS New York Section
ACS Greetings:	**Dr. Mary Carroll** ACS President
Introductory Address:	**Dr. Michael Berman** Air Force Office of Research
Medal Presentation:	**Dr. Ping Furlan**
Acceptance Address:	**Dr. Emily A. Carter** Nichols Medalist

THE WILLIAM H. NICHOLS MEDAL AWARD



Dr. William H. Nichols, shown at right, established this annual award, the first of its kind, in 1902 to honor a chemical scientist for original research. Since its inception, the New York ACS has administered the award. It has been perpetuated through the generosity of Dr. Nichols, his family, and the Nichols Foundation, Inc. The Nichols Medal has been presented to 20 Nobel Laureates – including two double Nobel Laureates – and one Nobel Laureate twice, and 33 National Medal of Science recipients. Leo H. Baekeland won the Nichols Medal in 1910 and nine Nichols Medalists have also received the Leo H. Baekeland Award presented by the North Jersey ACS!

Read more here

Supported in part by the William H. Nichols Fund For Chemistry at the Boston Foundation

2024 WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM & AWARD BANQUET (continued)

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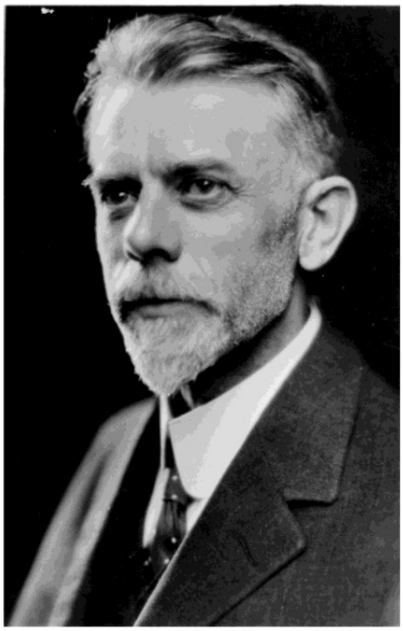
BANQUET RESERVATIONS DEADLINE – APRIL 1, 2024

100Th ANNIVERSARY

SCIENTIFIC NOTES AND NEWS

THE Nichols Medal of the New York Section of the American Chemical Society was presented to Professor Charles A. Kraus, of Brown University, at the Chemists' Club on March 7. Presentation addresses were made by Dr. Clarke E. Davis, Dr. F. G. Cottrell and Professor Marston T. Bogert, and Dr. Kraus made an address on "The theory of radicals as applied to modern chemistry."



Dr. Charles A. Kraus
1924 Nichols Medalist
1939 ACS President

UNDERGRADUATE RESEARCH SYMPOSIUM – CALL FOR ABSTRACTS

The Student Activities Committee of the New York ACS invites all undergraduates to present their research at the 71st Annual Undergraduate Research Symposium. This year's URS will be held at Medgar Evers College – CUNY on May 4, 2024 from 8:00AM – 2:00PM and will feature a keynote address by Prof. Markin Parasram of New York University. Registration is FREE.

Abstracts are due April 2, 2024

Anaerobic Heteroatom Transfer Reactions Promoted by Photoexcited 1,3-Diploles

Speaker: Marvin Parasram, Ph.D.
Assistant Professor
Department of Chemistry
New York University
Date: **Friday, May 4, 2024**
Place: Medgar Evers College
– City University of New York
Time: 8:00 AM – 2:00 PM

Registration: Student Presenters
Faculty Mentors
Exhibitors
Guests

Abstract: Heteroatom units, such as carbonyls, C(sp^3)–OH and C(sp^3)–NH_2 bonds, are prevalent motifs in many medicinally important compounds. Methods to incorporate these important functional groups at the expense of hydrocarbons rely on the use of non-commercial heteroatom transfer agents, precious transition metals, and/or costly engineered enzymes. Also, these methods often require exogenous oxidants to promote the C–heteroatom bonding event, which greatly limits substrate scope. Our laboratory focuses on the employment of economical 1,3-dipoles as versatile reagents that can serve as the hydrocarbon activator and the heteroatom atom source for the heteroatom incorporation of aliphatic systems under benign visible-light irradiation. Our contributions involve the cleavage of alkenes leading to valuable carbonyl derivatives and the direct C–H oxidation of hydrocarbons via anaerobic oxygen-atom transfer from photoexcited nitroarenes. Using photoexcited azoxys, an anaerobic nitrogen atom transfer event can occur leading to the aziridination of alkenes. Mechanistic studies reveal that the 1,3-dipoles are the sole photo-absorbing species, which leads to the formation of diradical intermediates that are responsible for heteroatom transfer events.

Download flyer here

HUDSON-BERGEN SUBSECTION – CALL FOR ABSTRACTS

25th Annual Student Research Symposium and Award Night – Call for Abstracts

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, chemistry/biochemistry majors from the participating colleges, are also being recognized (they receive the Hudson-Bergen Chemical Society Award consisting of a certificate and a gift certificate). All the presenters will receive certificates of participation. Students who wish to make presentations (~10 min each) must send an abstract via e-mail to mleonida@fdu.edu, by **April 5, 2024**. The abstract should be in MS Word (font Times New Roman 12) 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. There is no registration fee.

Using DNA Sequencing to Understanding Protein Structure and Function

Speaker: Neel H. Shah, Ph.D.
Assistant Professor
Department of Chemistry
Columbia University
Date: **Friday, April 26, 2024**
Place: Fairleigh Dickinson University
Time: 4:30 PM Student Presentations
6:00 PM Dinner and Awards
6:45 PM Plenary Lecture

Abstract: As chemists, we often seek to understand how the structure of a molecule defines its properties. This can be done by making small, methodical changes to a molecular structure and measuring changes in the properties of that molecule. For example, a medicinal chemist may synthesize derivatives of a drug and examine how the addition or removal of specific atoms or functional groups impacts the potency, selectivity, or bioavailability of that molecule. This exercise may yield an improved drug, but it will also yield a deeper understanding of the key chemical features driving the activity of that drug. Similarly, a biochemist might make single amino acid substitutions, or mutations, in a protein and measure how these mutations impact the function of that protein. Although this time-tested approach has allowed biochemists to methodically dissect the roles of individual functional groups or atoms within large, complex protein molecules, it can be laborious and low-throughput. In this presentation, I will describe our efforts to increase the scale and throughput by which we can probe structure-activity relationships in proteins. Our methods leverage the power of next-generation DNA sequencing, coupled with cell-based assays for protein function, to rapidly make thousands of protein measurements at once. These approaches are revealing new insights into protein regulation and molecular recognition.

Download flyer here

LONG ISLAND SUBSECTION

Optimizing the Metabolic Stability of Phosphodiesterase 5 Inhibitors

Speaker: Dr. Jole Fiorito
Assistant Professor
Department of Biological and Chemical Sciences
New York Institute of Technology
Date: **Thursday, March 7, 2024**
Place: via Zoom (register here)
Time: 6:45 PM

Abstract: Phosphodiesterase 5 (PDE5) is a cyclic guanosine monophosphate-degrading enzyme involved in numerous biological pathways. Inhibitors of PDE5 are important therapeutics for the treatment of neurodegenerative diseases, including Alzheimer's disease (AD). We previously reported the first generation of quinoline-based PDE5 inhibitors for the treatment of AD. However, the short *in vitro* microsomal stability rendered them unsuitable drug candidates. Here we report a series of new quinoline-based PDE5 inhibitors. Among them, compound **4b**, 8-cyclopropyl-3-(hydroxymethyl)-4-(((6-methoxypyridin-3-yl)methyl)amino)quinoline-6- carbonitrile, shows a PDE5 IC_{50} of 20 nM and improved *in vitro* microsomal stability ($t_{1/2}$ = 44.6 min) as well as excellent efficacy in restoring long-term potentiation, a type of synaptic plasticity to underlie memory formation, in electrophysiology experiments with a mouse model of AD. These results provide an insight into the development of a new class of PDE5 inhibitors for the treatment of AD.

Biography: Dr. Jole Fiorito earned a Master of Science in Pharmaceutical Chemistry and her Ph.D. in Pharmaceutical Sciences from the University of Catania, Italy. Following graduate school, she became a post-doctoral researcher at Columbia University in the TAUB Institute for Research on Alzheimer's Disease and the Aging Brain (Dr. Arancio Lab) and the Organic Chemistry Collaborative Center (Dr. Landry Lab). While at Columbia, she developed novel compounds that inhibit phosphodiesterase 5 (PDE5) enzymes and increase the phosphorylation of the transcriptional factor CREB through the nitric oxide signaling pathway, which is found to be impaired in Alzheimer's disease. These technologies are patent pending and have already generated interest from the pharmaceutical industry.
Currently, Dr. Fiorito's research interests are in developing multi-target small molecules against both HAT and PDE5 enzymes that are involved in several multifactorial diseases such as Alzheimer's disease and cancer. Dr. Fiorito has received an NIH Research Enhancement Award (R15) to conduct this research. She hopes her research will lead to novel disease-modifying therapeutics that can address unmet clinical needs.

Download flyer here

Deadline for submitting articles and advertisements for the April 2024 issue is March 16, 2024

LONG ISLAND SUBSECTION

Marie Skłodowska–Curie: The Life of a Pioneer Scientist

Speaker: Dr. Paris Svoronos
Professor Emeritus
Department of Chemistry
Queensboroough Community College
Date: **Thursday, April 4, 2024**
Place: St. John's University
D'Angelo Center, Room 407
or via Zoom (register here)
Time: 6:45 PM

Abstract: Maria Salomea Skłodowska-Curie (1867-1934) was the first ever female to win a Nobel prize, the first ever scientist to win two Nobel prizes and the only person to win her prizes in two different fields. Born in Russia-occupied Poland she emigrated to France to earn her post-high school degrees and eventually became the first ever woman professor at the Université de Paris. Her life, accomplishments and honors will be discussed with emphasis on her impact to radioactivity.

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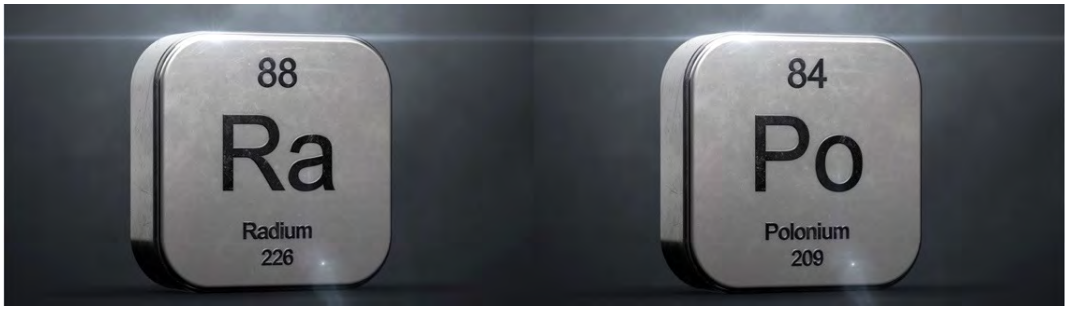


SEMINAR SPEAKERS WANTED

The New York Section wants to add to add you to our Speakers Bureau database of local 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 send an email to Ms. Bernadette Taylor with the following information that will be posted on the Section's website: your name, affiliation, a seminar 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 your fellow members!

COMMITTEE ON THE HISTORY OF THE NEW YORK LOCAL SECTION

The New York Section has participated in the designation of seven National Historic Chemical Landmarks and four New York Section Historic Chemical Landmarks, as detailed on its website. 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 a historic chemical landmark - be it an achievement, a building or association. Send your nomination, with supporting documentation, to Dr. Neil Jespersen, Chair, Committee on the History of the NY Section.

NEW YORK ACS' 11th ANNUAL CHEMISTS CELEBRATE EARTH WEEK EVENT

Where: Jones Beach Energy & Nature Center
150 Bay Parkway
Wantagh, NY

Date: **Sunday, April 14, 2024**
Register here for FREE
Please register by April 3, 2024

Time: 11:00 – 3:00 PM

GET A CHARGE OUT OF CHEMISTRY
ACS Chemistry for Life
April 21-27, 2024 | #CCEW
CHEMISTS CELEBRATE EARTH WEEK

Join us at New York's famous Jones Beach as we celebrate Earth Week at the newly renovated Energy and Nature Center!

The day's event includes an introduction of Jones Beach by the Education Team, a tour of the Nature Center, a self-guided hike through the beach and preserve area, as well as snacks, lunch, and cool earth day gifts!

Space is limited and everyone must register (including children). Once registration has reached capacity it will be closed. There is a parking fee to enter Jones Beach.

Hope to "sea" you there!

Click here to register. Registration is FREE

For more information contact:

Prof. JaimeLee Rizzo
CCEW Coordinator
jrizzo@pace.edu

NYACS CHEMISTS CELEBRATE EARTH WEEK ILLUSTRATED POEM CONTEST

2024 CCEW Illustrated Poem Contest
Get A Charge Out of Chemistry

The New York City Local Section Local Section of the American Chemical Society (ACS) is hosting an illustrated poem contest for students in Kindergarten through 12th grade. Entries must be sponsored by a local school or community group for verification purposes.

Contest Deadline: Friday, April 5, 2024 at 11:59 PM Eastern
Local Prizes: 1st Prize in each category receives a $20 gift certificate
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!
Local 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)

Write and illustrate a poem using the CCEW theme, "Get A Charge Out of Chemistry." 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 the CCEW 2024 theme include:

Batteries Natural Gas Biofuels Gasoline Renewable Energy

Entries will be judged based upon:

Artistic Merit - use of color, quality of drawing, design & layout
Poem Message - fun, motivational, inspiring about yearly theme
Originality Creativity - unique, clever and/or creative design
Neatness - free of spelling and grammatical errors

Contest rules:

- All poems must be no more than 40 words, and in one of the following styles to be considered: Haiku, Limerick, Ode, ABC poem, Free verse, End rhyme, and Blank verse.
- Entries are judged based upon relevance to and incorporation of the yearly theme (Get A Charge Our of Chemistry), word choice and imagery, colorful artwork, adherence to poem style, originality and creativity, and overall presentation.
- All entries must be original works without aid from others. Physical drawings may be scanned or captured via camera and submitted to the online form. 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. If the illustration is created using a digital painting or drawing app, the name of the program must be included on the entry form.
- The text of the poem should be easy to read and may be typed 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.
- Only one entry per student will be accepted.
- Students must be sponsored by a school or another sponsoring group *(e.g. Homeschool Association, Boys and Girls Club, Scout Troop, 4-H, etc.)*.
- 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.

ACS Local Section
New York
Nanotechnology Discussion Group

NEW YORK NANOSCIENCE
DISCUSSION GROUP
Monday, April 15, 2024
Waverly 500
Refreshments: 5:00 p.m.
Science: 5:30 – 7:00 p.m.

New York University
Department of Chemistry
Silver Center
32 Waverly Place
New York, NY 10003
Phone: 212-998-8400

SPEAKERS

Nathalie Pinkerton
New York University
Assistant Professor of Chemical and Biomolecular Engineering, Tandon School of Engineering
NYU Pain Research Center

Irene de Lázaro
New York University
Assistant Professor of Bioengineering, Tandon School of Engineering

Chris DelRe
CUNY Advanced Science Research Center
Assistant Professor in the Nanoscience Initiative

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 be expected to place the work in a context understandable to a broad audience.

NEW YORK UNIVERSITY Department of Chemistry

WESTCHESTER CHEMICAL SOCIETY

Alexander Borodin's Kismet: Chemist and Composer

Speaker: Stephen M. Cohen, Ph.D., MRSC
Writer, Podcast
Host of "The History of Chemistry"
Date: **Thursday,March 7, 2024**
Place: via Zoom (register here)
Time: 7:30 PM

Download flyer here

Abstract:
Nineteenth-century Russian chemist Alexander Borodin was also a composer of some of the best-known music in the world including a posthumous Tony Award for his music in the musical "Kismet." Yet his top-notch chemical contributions are nearly forgotten. This talk explores his life as both a chemist deeply in touch with the latest happenings in European chemistry, and as a composer, a member of The Mighty Handful, who struggled with writing and completing his scores, based on Russian nationalist ideas. He knew he was a divided man, and his colleagues and peers recognized this within him. The chemistry he learned at university, his home life; relationships with friends, students, and peers; music (including samples of some of his compositions); chemical research; and more are topics for this talk.

SAVE THE DATE : STUDENT AWARD RECEPTION AND DINNER

The Westchester Chemical Society will hold its Student Awards Night on **Tuesday, April 23** in Wilcox Hall at Pace University in Pleasantville, NY. The Westchester Chemical Society will not be awarding a Distinguished Scientist Award this year since no nominations were received. The speaker for the evening will be Dr. Michael Tunick who will speak on four decades of Dairy Research with the Agricultural Research Service. More details will be published in the April issue of the Indicator.

NORTH JERSEY SECTION MEETINGS

https://www.njacs.org

2024 NORTH JERSEY ACS EXECUTIVE COMMITTEE MEETINGS

2024 North Jersey ACS Chair Sandra Keyser and the Executive Committee welcome you to our monthly NJACS meetings. The meetings are normally held on the second **Wednesday from 7 pm to 9 pm.** All members are welcome to attend and become more involved in section activities. The dates for 2024 are, as follows:

Wednesday, March 13, 2024 (virtual)
Wednesday, April 10, 2024 (hybrid)
Wednesday, May 15, 2024 (hybrid)
Wednesday, June 12, 2024 (hybrid)
Wednesday, September 11, 2024 (hybrid)
Wednesday, October 9, 2024 (hybrid)
Wednesday, November 13, 2024 (virtual)
2025 Planning Meeting in December, TDB

For links to the virtual meetings and RSVP for in-person attendance at hybrid meetings, please click here to email our Communications Chair.

2023 BAEKELAND MEDAL

The 2023 Baekeland Award Symposium will be held in honor of Prof. Keary M. Engle (The Scripps Research Institute) on April 12, 2024 at Fairleigh Dickinson University in Madison, New Jersey. Dr. Engle will be celebrated for his novel catalytic alkene functionalization reactions, inventing general and versatile strategies for the programmed functionalization of olefins and developing nickel and palladium catalysts that are widely used in academic and industrial research labs around the world. The speakers of the symposium include Dr. Steven Wisniewski (Bristol-Myers Squibb), Tianning Diao (New York University), Peng Liu (University of Pittsburgh), and Scott Miller (Yale University). Detailed program and agenda given on the next page.

2023 BAEKELAND AWARD SYMPOSIUM

American Chemical Society-North Jersey Section
2023 Baekeland Award Symposium

Friday, April 12, 2024 • 1:00 pm – 6:15 pm

Fairleigh Dickinson University, Florham Campus, The Mansion, Lenfel Hall
285 Madison Avenue, Madison NJ 07940

The North Jersey Section of the American Chemical Society established the Baekeland Award in 1944 to commemorate the technical and industrial achievements of Leo Hendrik Baekeland and to encourage younger chemists to emulate his example. The award is presented biennially to a United States-based chemist under 40 years of age in recognition of accomplishments in pure or industrial chemistry, as characterized by the initiative, creativeness, leadership, and perseverance of the individual and indicated by published or unpublished evidence. Professor Keary M. Engle is being recognized for his general and versatile strategies for the programmed functionalization of olefins and the development of widely used nickel and palladium catalysts.

Agenda

1:00 Registration

1:30 **Welcome Address**
Dr. Dorothy J. Phillips, *ACS President-Elect*
Dr Sandra Keyser, *NJ-ACS & Baekeland Symposium Chair*

1:45 **Dr. Steven Wisniewski**
How Base Metals Catalysis Can Impact Process Chemistry

2:25 **Dr. Tianning Diao**
Leveraging One- and Two-Electron Mechanisms in Nickel-Catalyzed Cross-Coupling

3:05 **Dr. Peng Liu**
Modeling Catalytic Organic Reactions

3:45 Break / Refreshments

4:15 **Dr. Scott Miller**
Searching for Selective Catalytic Reactions in Complex Molecular Environments

4:55 **Remarks and Baekeland Award Presentation**
Ms. Bonnie Lawlor, *ACS District III Director*
Dr. Sandra Keyser, *NJ-ACS & Baekeland Symposium Chair*

5:10 **Keynote: Dr. Keary Engle**
Metal–olefin interactions and the catalytic chemistry they inspire

6:00 **Closing Remarks**
Ms. Diane Krone, *NJ-ACS Awards Chair*

Keary M. Engle, PhD
Professor of Chemistry
The Scripps Research Institute
Keynote Speaker
2023 Baekeland Awardee

Steven Wisniewski, PhD
Associate Scientific Director
Bristol-Myers Squibb

Tianning Diao, PhD
Professor of Chemistry
New York University

Peng Liu, PhD
Professor of Chemistry
University of Pittsburgh

Scott Miller, PhD
Sterling Professor of Chemistry
Yale University

Registration Fee: $15 professionals; $5 students, retirees, unemployed
Online registration required by April 1, 2024 at **www.njacs.org/baekeland** due to limited seating.

www.njacs.org

Questions? Contact Dr. Sandra Keyser (skeyser@njacs.org), Chair of the 2023 Baekeland Committee

Organizing Committee: Alan Cooper, Mohammed Elshaer, Miriam Gulotta, Bettyann Howson, Diane Krone, Cecilia Marzabadi, Amanda Mann, Joseph Badillo

2023 BAEKELAND AWARD SYMPOSIUM SPEAKER ABSTRACTS

2023 Baekeland Award Symposium
Speaker Abstracts

Metal–olefin interactions and the catalytic chemistry they inspire

Keary M. Engle, Baekeland Awardee
The Scripps Research Institute, La Jolla, CA

Alkenes are inexpensive, widely available chemical feedstocks that can be sourced from petroleum or renewable resources. The goal of research in the Engle lab is to develop novel catalytic alkene functionalization reactions that introduce new functional groups at each of the alkenyl carbon atoms in a programmable fashion. In this way, simple planar starting materials can be directly converted into densely functionalized, stereochemically defined products, which can then serve as building blocks for structurally complex target molecules that are of academic and industrial importance, including many widely used pharmaceutical agents. To this end, the Engle lab has developed strategies involving directing auxiliaries, native directing groups, and transient directing groups, as well as complementary non-directed approaches that are compatible with a variety of metals, redox manifolds, and coupling partners. Detailed mechanistic studies have shed light on the interplay between the substrate, metal, and ancillary ligands in dictating reaction outcomes, informing new catalyst designs through an iterative feedback loop.

How Base Metals Catalysis Can Impact Process Chemistry

Steven Wisniewski
Bristol-Myers Squibb, New Brunswick, NJ

Process chemists consider several factors when designing synthetic routes to active pharmaceutical ingredients (APIs) including amongst others safety, number and type of chemical transformations, availability of starting materials, sustainability, and cost. Enabling disruptive, rather than incremental, innovation that delivers a step change in synthetic efficiency is critical to achieving business goals, especially with the increasing molecular complexity of new pharmaceutical candidates. Many of these routes utilize transition metal catalysis to forge key carbon-carbon and carbon-heteroatom bonds. Our extensive experience in addition to the significant mechanistic work in the field make palladium the go-to catalyst in process chemistry. We believe that additional tools and methods will be required to continue to enable disruptive outcomes in the synthesis of new pharmaceutical candidates. Therefore, we are upinvesting in Earth-abundant metal catalysis as the distinct reactivity of iron, cobalt, and nickel may enable new disconnections and result in shorter, cheaper, and more sustainable routes to APIs. This presentation will cover the development and impact of base metal catalysis on the synthesis of clinical candidates from Bristol Myer Squibb's portfolio.

Leveraging One- and Two-Electron Mechanisms in Nickel-Catalyzed Cross-Coupling

Tianning Diao
New York University, New York, NY

While palladium-catalyzed cross-coupling reactions have revolutionized the construction of multi-aryl scaffolds in pharmaceutical synthesis, the reactivity of nickel in mediating radical pathways has expanded the scope of cross-coupling to include a variety of alkyl motifs. Through mechanistic investigations and understanding the ligand effects, we have established that strong σ-donor and π-acceptor ligands exhibit redox-activity, facilitating nickel catalysts to initiate radical formation, capture radicals, and direct bond formation from open-shell intermediates. The orthogonal reactivity of radicals with polar functional groups in biomolecules has opened new avenues for synthesizing non-canonical peptides and carbohydrates, which are important for drug discovery. In contrast, two-electron pathways are crucial for nickel-catalyzed bi-aryl coupling. Building on this insight, we have developed a novel ligand that enhances the reactivity of nickel-catalyzed Suzuki-Miyaura couplings, paving the way for the application of nickel catalysts in pharmaceutical process synthesis.

Modeling Catalytic Organic Reactions

Peng Liu
University of Pittsburgh, Pittsburgh, PA

New computational approaches have been used to understand and predict the reactivity and selectivity of various C–H bond and olefin functionalization reactions. Although steric and electronic effects have long been used to control organic reaction reactivity and selectivity, other factors, such as non-covalent interactions and catalyst flexibility and rigidity, are poorly understood and thus rarely leveraged in new reactions. Energy decomposition analysis (EDA) methods were used to quantitatively analyze covalent and non-covalent interactions between the catalyst and the substrate, providing a straightforward way to identify the dominant factors controlling reactivity and selectivity. These approaches were applied to conformationally flexible catalyst systems, including transition metal catalysts with conformationally flexible and hemilabile ligands, asymmetric ion-pairing catalysis, organic reactions in solution, and stereoselective biocatalytic reactions. In collaboration with synthetic experimental groups, we are exploring how the theoretical insights, in particular, quantitative descriptions of noncovalent interactions and catalyst flexibility effects, can be employed to guide rational catalyst design and discovery.

Searching for Selective Catalytic Reactions in Complex Molecular Environments

Scott Miller
Yale University, New Haven, CT

This lecture will describe recent developments resulting from our efforts to develop catalysts for asymmetric reactions, in particular for the preparation of densely functionalized, stereochemically complex structures. Over time, our foci have been on enantioselectivity, site-selectivity and chemoselectivity. In much of our current work, we are studying issues of enantioselectivity as a prelude to the extrapolation of catalysis concepts to more complex molecular settings where multiple issues are presented in a singular substrate. Complex natural products, for example, will be presented as quintessentially complex scaffolds for catalytic modification. Mechanistic paradigms, and their associated ambiguities – especially in light of catalyst or substrate conformational dynamics – will figure strongly in the lecture. Moreover, our focus on peptide-based catalysts has facilitated analogies to enzymes. Finally, several interesting collaborations – often unanticipated by us –will be discussed.

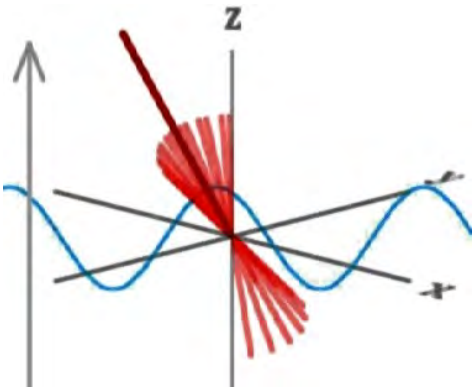
NORTH JERSEY ACS NMR SPECTROSCOPY TOPICAL GROUP

POKY, The Software Suite for NMR Studies

Speaker: Woonghee Lee, I.E.I.P., M.S.,Ph.D.
Assistant Professor
Department of Chemistry
University of Colorado – Denver
Date: **Thursday, March 21, 2024**
Place: via MS TEAMS
Time: 12:00 PM ET

Abstract: NMR spectroscopy is a powerful technique for molecular studies. In biomolecular research, it offers a wide range of unique approaches, from analyzing small compounds to investigating macromolecules, and from examining purified samples to studying complex mixtures. NMR analysis is primarily conducted in dry laboratory settings. Once the sample is prepared and inserted into the spectrometer, nearly all processes are performed using computers. When it comes to spectral analysis of biomacromolecules, such as proteins and nucleic acids, Sparky has been the gold standard program for a few decades. Donald Kneller from the Tack Kuntz group and Tom Goddard from the Tom Ferrin group were early contributors to UCSF-Sparky in the 90s. I took over from the University of California, San Francisco (UCSF) and developed NMRFAM-Sparky at the National Magnetic Resonance Facility at Madison (NMRFAM) until 2020 before I moved to the University of Colorado Denver. Since then, my group has developed the new program, POKY. POKY succeeds all the previous capabilities while provides new and enhanced features, leveraging the recent AI revolution. It is highly automated and efficient, covering assignment, peak picking, relaxation, dynamics, metabolomics, and small compound analysis. Additionally, POKY incorporates self-teaching capabilities. We have identified six different challenges, which we address through four distinct user interfaces. The POKY software suite is readily accessible at https://poky.clas.ucdenver.edu, introducing in a new era of NMR spectroscopy software that combines traditional excellence with cutting-edge AI technology.

Connection Information
This will be a virtual meeting hosted via Microsoft Teams. A direct link to the meeting is located HERE. Further information can be found on the NMR Spectroscopy Topical Group website. Please reach out to Christine Jorge (christine.jorge@bms.com) or Rongeng Zheng (rongfeng.zheng@bms.com with any questions.



Download flyer here

NORTH JERSEY CHROMATOGRAPHY GROUP

The North Jersey ACS' Chromatography Group presents its Green Chromatography Webinar featuring talks by Dr. Michael Hicks (Merck), and Dr. Daipayan Roy (Amgen).

Date: **March 14, 2024**
Time: 1:30 PM to 3:30 PM
Location: via Zoom
Registration: Click here to register
Download flyer here

Speakers

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Attaining sustainability with challenging separations in pharmaceutical methods development
Dr. Michael B. Hicks
Associate Principal Scientist, Merck

Role of Water and Deep Eutectic solvent additives in making SFC greener
Dr. Daipayan Roy
Senior Scientist, Amgen

NORTH JERSEY ACS CHEMISTS CELEBRATE EARTH WEEK

The North Jersey ACS is currently finalizing plans for an exciting in-person event at Edison Museum in West Orange. Stay tuned for the date and time in our newsletter or next Indicator issue!

NJACS CCEW Illustrated Poem Contest "Get a CHARGE Out of Chemistry"

Each year, the ACS sponsors an illustrated poem contest for K-12 students in the US. The North Jersey ACS is participating in the 2024 contest and will accept the top three winners in the grade categories of K-2, 3-5, 6-8, and 9-12 from local schools and sponsoring groups (boys and girls clubs, scouts, home schoolers). This year's theme is "Get a Charge out of Chemistry" and focuses on electrochemistry. All posters must be received by **April 28th, 11:59 pm, ET** and are to be submitted electronically to Bettyann Howson (bhowson@njacs.org). *Grade Category* Winners will receive Amazon Gift Cards - 1st Place $50, 2nd Place $25. 3rd Place $10 and Category Winner Teachers will also receive a corresponding monetary prize. Local 1st place winners advance to the national contest for a chance to win cash prizes. ACS will award $300 to first-place and $150 to second-place national contest winners in each grade category! Resources to help students create their poster can be found here. Please see the flyer for contest details and use the entry form when submitting your poster. NJ-ACS looks forward to receiving your posters!

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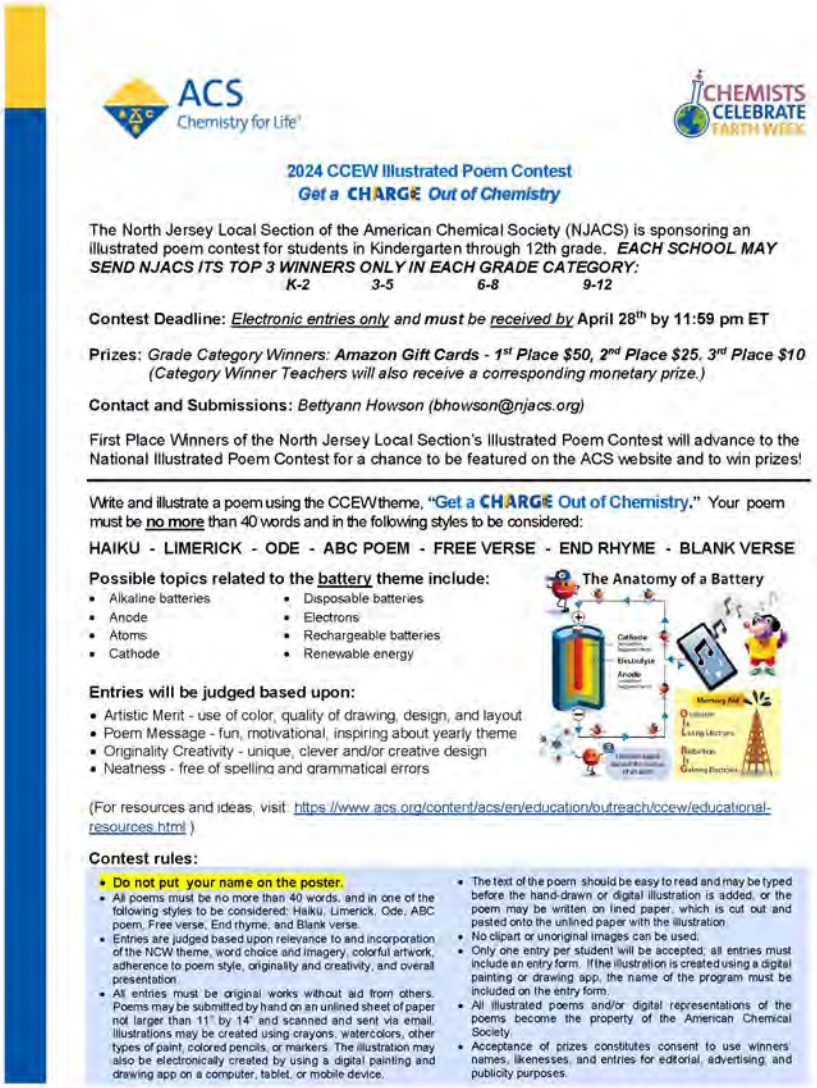

ACS Chemistry for Life®

CHEMISTS CELEBRATE EARTH WEEK

2024 CCEW Illustrated Poem Contest
Get a CHARGE Out of Chemistry

The North Jersey Local Section of the American Chemical Society (NJACS) is sponsoring an illustrated poem contest for students in Kindergarten through 12th grade. ***EACH SCHOOL MAY SEND NJACS ITS TOP 3 WINNERS ONLY IN EACH GRADE CATEGORY:***
K-2 3-5 6-8 9-12

Contest Deadline: *Electronic entries only and must be received by* **April 28th by 11:59 pm ET**

Prizes: *Grade Category Winners:* ***Amazon Gift Cards - 1st Place $50, 2nd Place $25, 3rd Place $10***
(Category Winner Teachers will also receive a corresponding monetary prize.)

Contact and Submissions: *Bettyann Howson (bhowson@njacs.org)*

First Place Winners of the North Jersey Local Section's Illustrated Poem Contest will advance to the 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, "Get a CHARGE Out of Chemistry." 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 the battery theme include:

- Alkaline batteries
- Anode
- Atoms
- Cathode
- Disposable batteries
- Electrons
- Rechargeable batteries
- Renewable energy

The Anatomy of a Battery

Entries will be judged based upon:

- Artistic Merit - use of color, quality of drawing, design, and layout
- Poem Message - fun, motivational, inspiring about yearly theme
- Originality Creativity - unique, clever and/or creative design
- Neatness - free of spelling and grammatical errors

(For resources and ideas, visit: https://www.acs.org/content/acs/en/education/outreach/ccew/educational-resources.html)

Contest rules:

- **Do not put your name on the poster.**
- All poems must be no more than 40 words, and in one of the following styles to be considered: Haiku, Limerick, Ode, ABC poem, Free verse, End rhyme, and Blank verse.
- Entries are judged based upon relevance to and incorporation of the NCW theme, word choice and imagery, colorful artwork, adherence to poem style, originality and creativity, and overall presentation.
- 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" by 14" and 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 typed 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.
- 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.

NORTH JERSEY ACS DRUG METABOLISM DISCUSSION GROUP

The North Jersey ACS' Drug Metabolism Discussion Group is proud to host its Spring symposium and vendor exhibition entitled:

Discovery, Development, and Regulatory Strategy for Biologics and ADCs in Oncology and Immunology

Date: **April 11, 2024**
Time: 8:00 AM to 4:00 PM
Location: The Palace at Somerset Park
333 Davidson Avenue
Somerset, NJ
Registration: Click here to register

Program

8:00 a.m.	Registration / Continental Breakfast / Vendor Exhibit
8:45 a.m.	Introductory Remarks Arian Emami Riedmaier, PhD; Chair, NJ DMDG
9:00 a.m.	The Evolution of First-in-Human Dose Selection for Biologics in Oncology and Beyond Haiqing Wang, PhD; Senior Director, DMPK, Alnylam
9:45 a.m.	Mutants, Loners and Bad Influences (Systems Model of KRAS Pathway Describing Mechanism of Response in G13D CRC) Edward Stites, MD, PhD; Associate Professor of Laboratory Medicine and Pathology, Yale School of Medicine
10:30 a.m.	Vendor Exhibit & Coffee Break
11:15 a.m.	Mitochondrial Bioenergetic Health Index as a Biomarker for Kidney Injury Kiran Deshpande; PhD Candidate, Ernest Mario School of Pharmacy Rutgers, New Brunswick, NJ
11:45 p.m.	Vendor Exhibit & Lunch
12:45 p.m.	Immunogenicity Risk Assessments and Bioanalytical Strategy for IND Enabling Studies for Complex Biologics Sanjay Dholakiya, PhD; Principal Scientist, BMS
1:30 p.m.	Developing Effective Drug Development Strategies for Biologics Samuel Chuang, PhD; Senior Director, Scientific Advisory Services, Charles River
2:15 p.m.	Vendor Exhibit & Coffee Break
2:30 p.m.	ADCs as Therapeutic Options: History, Resurgence and DXd Based ADCs from DSI Tushar Garimella, PhD; Executive Director, Clinical Pharmacology, Daiichi-Sankyo
3:15 p.m.	Medicilon Strategy & Experience for Dual Filing of ADC IND to US FDA & China NMPA Chunlin Chen, PhD; CEO and Founder, Medicilon USA Corp.
4:00 p.m.	Program close

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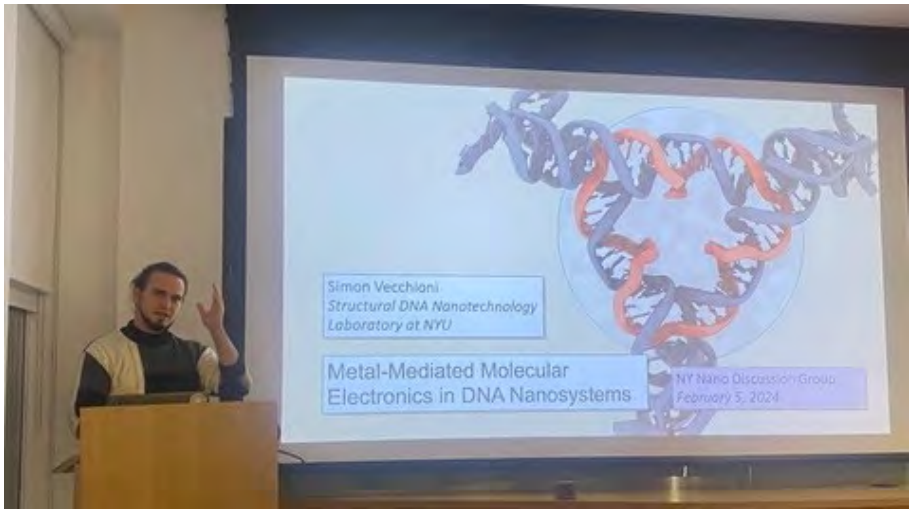
MEETING REPORTS

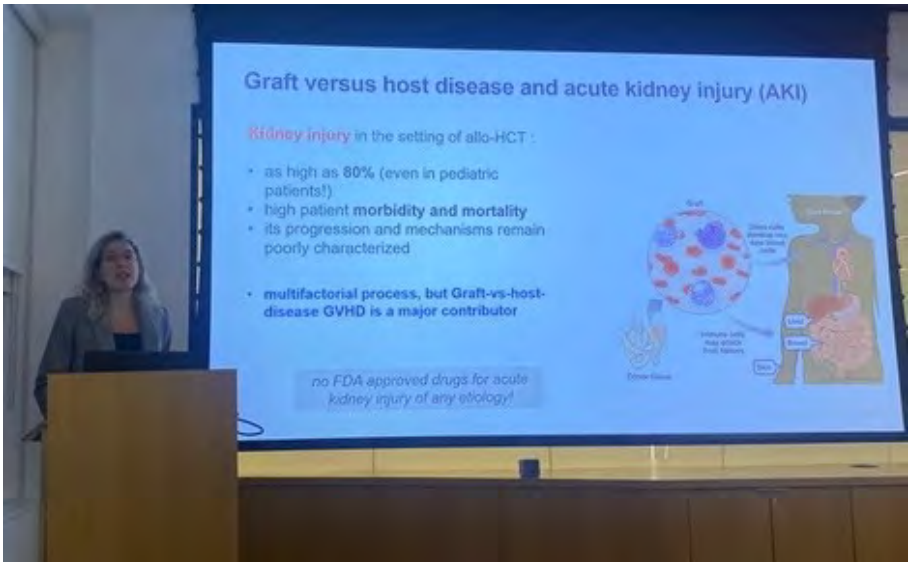
NYACS NANOSCIENCE DISCUSSION GROUP HOSTS EXCITING RISING STAR SYMPOSIUM

New York ACS NanoScience Topical Group recently hosted an engaging Rising Star Session, showcasing the work of three postdoctoral researchers from esteemed research groups. Held at New York University's Waverly Building on February 5, 2024, the event spotlighted innovative research across biology, chemistry, and physics/applied mathematics. At the Session, Dr. Ping Furlan, NYACS Chair, commended the transformative power of nanoscience and acknowledged the dedicated work of Dr. James Canary and the NanoScience Group. The Group, active for the past 15 years, fosters discussion, collaboration, and the advancement of nanoscience in the region.

Simon Vecchioni, from the Seeman, Sha & Canary Associate research group at New York University (NYU)'s Department of Chemistry, commenced the session with his presentation on "Metal-Mediated Molecular Electronics in DNA Nanosystems." Vecchioni's research focuses on constructing DNA double helices containing metal-mediated DNA (mmDNA) base pairs, particularly using Ag^{+} and Hg^{2+} ions between pyrimidine:pyrimidine pairs. This work aims to elucidate structural and electronic properties, making mmDNA structures promising candidates for nanoelectronics.



Dr. Simon Vecchioni (NYU) describes his work which focuses on constructing DNA structures with metal-mediated base pairs for potential nanoelectronics applications.



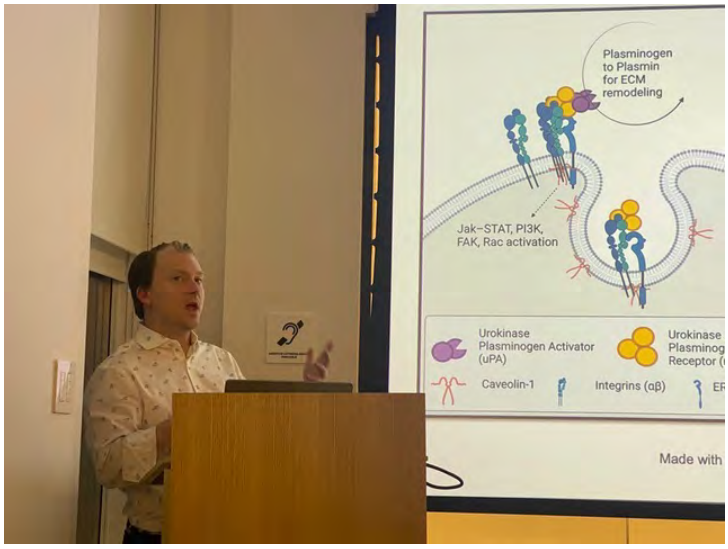
Dr. Magdalini Panagiotakopoulos (MSKCC) presents her work on investigating nanoparticles to target kidneys and treat acute kidney injury (AKI), a serious side effect of cancer therapies without approved drugs

Magdalini Panagiotakopoulos, a Research Associate at Memorial Sloan Kettering Cancer Center (MSKCC)'s Heller Group, took the stage to discuss "Nanodelivery Targets in Cancer Therapy." Her work centers on synthesizing and utilizing biocompatible lipid nanoparticles to enhance cancer treatment efficacy while minimizing side effects. Additionally, she explores nanoparticles targeting the kidneys to address acute kidney injury (AKI), a common side effect of cancer therapies that significantly impacts patient outcomes.

NYACS NANOSCIENCE DISCUSSION GROUP HOSTS EXCITING RISING STAR SYMPOSIUM (continued)

Edwin Pratt, a Research Fellow at Memorial Sloan Kettering Cancer Center (MSKCC)'s Lewis Lab, concluded the session with his presentation on "Multiplexed PET Imaging of Cancer Resistance." Pratt's research aims to enhance cancer imaging by simultaneously monitoring and visualizing multiple PET tracers, thereby significantly increasing the information gleaned from a single PET scan.

The Rising Star Session provided a platform for these talented researchers to showcase their cutting-edge research work and engage in discussions with peers and experts in the field. Attendees left the event inspired by the potential of nanoscience to address pressing challenges in healthcare and beyond.



Dr. Edwin Pratt (MSKCC) discusses his work which focuses on developing advanced imaging techniques for simultaneous imaging of more than one PET tracer.

Event organizers including Drs. James Canary, Dan Heller, Irene de Lazaro, and speakers enjoy a social moment.

The Rising Star Session, held at New York University (NYU) on February 5, 2024, showcased innovative and cutting-edge research with a strong emphasis on interdisciplinary collaboration and scientific excellence.

NYACS NANOSCIENCE DISCUSSION GROUP HOSTS EXCITING RISING STAR SYMPOSIUM (continued)

Led by Drs. Jim Canary, Stephanie Lee, Yoel Ohayon, Dan Heller, Irene de Lazaro, and Alma Perez Perrino, the Group extends an invitation to their April events:

1. **Seeman Memorial Lecture**. Join Nobel Laureate (2016) Dr. Ben Feringa of the University of Groningen for the inaugural Seeman Memorial Lecture on **April 12, 2024, at 11 am**. Additional information available here. Co-sponsored with the International Society for Nanoscale Computation, Science, and Engineering (ISCNSE). Click image below.

1. **Tenure-Track Faculty Session**. Explore insights from Drs. Chris DelRe (CUNY ASRC), Irene de Lázaro (NYU Bioengineering), and Nathalie Pinkerton (NYU Chemical and Biomolecular Engineering) on **April 15, 2024, at 5 pm**. Details available here.

All event photos are courtesy of Ms. Julie Kaplan of the New York University.

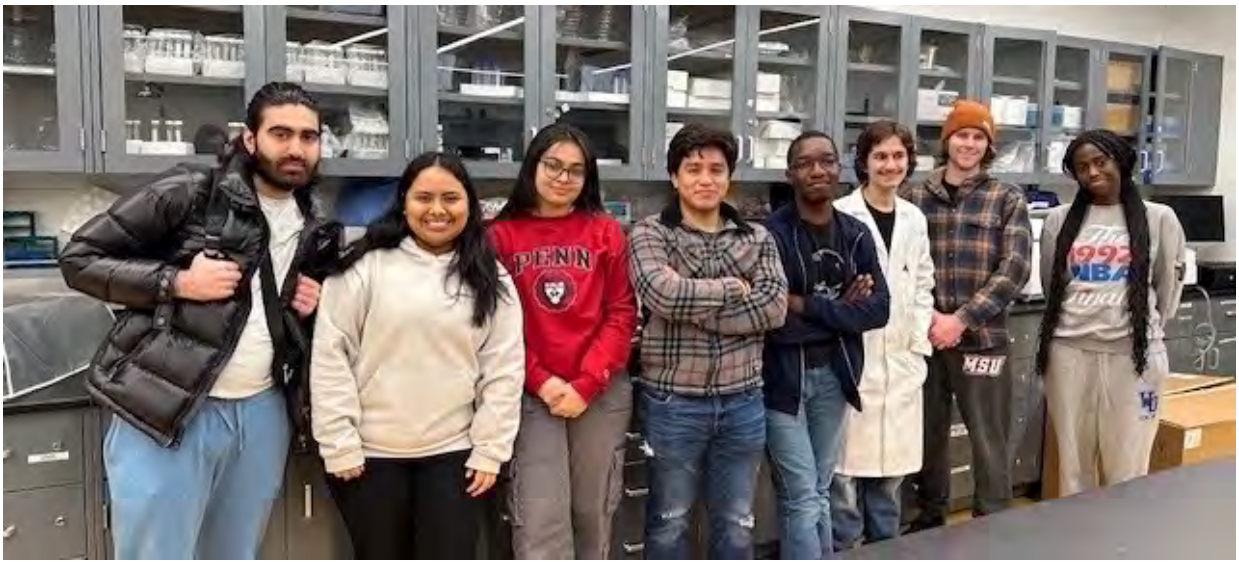
Dr. Ping Furlan, NYACS Chair, welcomes attendees to New York ACS, invites participation in upcoming events, and commends Dr. James Canary and the NanoScience Group for nurturing talent, fostering collaboration, and advancing nanoscience in the region.

NJACS CONGRATULATES THE 2022-23 STUDENT CHAPTER AWARDEES

In the 2022-23 academic year, four of the North Jersey-ACS Student Chapters were active and received recognition by the Education Office at ACS. Congratulations to these student members and thank you for spreading the word about *improving people's lives with the transforming power of chemistry!*

Montclair State University's (MSU) Student Chapter of the American Chemical Society earned a Commendable Award for the Academic Year 2022-2023. MSU, in Montclair, NJ, is an R2 research university focused on undergraduate education with approximately 270 Chemistry and Biochemistry majors. The MSU Chapter has more than 40 active members, five students on the executive board and two faculty co-advisors Professors Jaclyn Catalano and Eli Lee.

Katherine Saravia (President), Teuta Hida(Past President), Zoren Valmonte, Jeff Yumbla participating at the Montclair STEM Fest.



Montclair Chapter Members: Michael Arik, Yuma Sanchez Vidal (Vice President), Chetsi Patel, Fabricio Justiniano (ACS Scholar and past Secretary), Wilthon Gilles (ACS Scholar), Arik Ukella (past publicist), CJ Szafranski (Treasurer), and Chrisnaelle Beaucejour.

The chapter consists of chemistry, biochemistry, and molecular biology majors. The major goals for the chapter set by President Katherine Saravia are to increase student engagement and provide more opportunities for professional growth and development. Annual Social Events include Back to School Make Your Own Ice Cream Social, Oozing Pumpkins, Thanksgiving Potluck, Game/Trivia Event and Senior Appreciation Tea. The chapter also focuses on meeting with invited seminar speakers to discuss career goals along with outreach events to the local community. Last year the chapter conducted hands on experiments at the Montclair School District STEM festival that over 200 K-5 students attended. The chapter will continue to be an active part of Chemistry and Biochemistry Department and the surrounding Montclair Community.

NJACS CONGRATULATES THE 2022-23 STUDENT CHAPTER AWARDEES (continued)

The Seton Hall University ACS Student Chapter earned Commendable and Green Chemistry Awards for the 2022-23 academic year. The chapter hosted a total of 12 events, making great strides towards fostering a stronger and more community-minded department of chemistry. The students piloted several unique events, such as an edible Boba-making event, a Periodic Table Brownies Fundraiser at the annual Undergraduate Research Symposium, and a community outreach event in which we demonstrated the effect of antacids to children through a variety of different liquids. These events were aimed at presenting chemistry in a relatable way, as well as to a broader audience of many academic backgrounds. But more importantly, we have continued our successful internship panels and Research Showcases, in which chemistry-department alumni and professors, respectively, are invited to speak on their experiences and current work. Research showcases serve a dual mutual role, in giving professors a platform to recruit new undergraduate students and providing undergrads with a streamlined way of becoming acquainted with various fields of discovery in chemistry. Additionally, our career panels serve to connect our upperclassmen who are seeking jobs and opportunities in chemistry, biochemistry, and other fields. Our events, overall, serve to broaden the common perception of chemistry and foster bonds within the university, across lines of department and major.

From left to right: Sophia Almeida (Vice President), Ester Carrera (Public Relations Chair), Aliye Pehlivan (Treasurer), Christina DiBuono (Communications Chair), Radha Patel (President), Zoe Raste (Co- Treasurer), Shaan Patel (Secretary), Thomas Payton (Event Coordinator) from Seton Hall University.

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The Student Chapter of Essex County College, shown at the top of the next page. earned Honorable Mention Recognition. The Student Chapter of Essex County Community College brings opportunities for research and awareness to the college community and locally and engages students in the NJACS section with activities such as the NCW, CCEW, and community services. For the 2022-23 academic year chemistry students presented a series of hands-on activities for local grade school students, planted a tree in downtown Newark during Earth Day ceremonies, and provided community services by volunteering in Newark's Food Kitchen.

NJACS CONGRATULATES THE 2022-23 STUDENT CHAPTER AWARDEES (continued)

Essex County College Student Chapter Members: Calixte Abanda, Jada Imalcela, Elizabeth Bakare,Rafiato Bikinga, Sulaiman Zhulqadar, Nickson, Professor Marashai

Caldwell University students Sara Corsi, Adam Zaki, and Gabriela Moran at the Liberty Science Center ChemExpo on October 21, 2023.

NJACS CONGRATULATES THE 2022-23 STUDENT CHAPTER AWARDEES (continued)

The Caldwell University American Chemical Society Student Chapter received an Honorable Mention Award for the 2022-23 academic year. The chapter focused on fun scientific activities for Caldwell University students as well as young children at the Liberty Science Center. In October of 2023 our board members, Adam, Sara, and Gaby, ran an educational slime activity for children visiting the Liberty Science Centers Chem-Expo. In November of 2023, the club held an activity for the students of Caldwell University to show the effect of liquid nitrogen on flowers, leaves, and tennis balls. Our board members are working hard this semester to put together even more events available to Caldwell University students in order to get everyone involved and excited about the activities of our students in the school of natural sciences. We as a club on Caldwell's campus and a chapter of the ACS are focused on making our presence at Caldwell University more prevalent to show that science and chemistry can be fun to those who may not be involved in the sciences.

Officers:

President: Adam Zaki (majoring in Biology)
Vice President: Sadikshya Koirala (majoring in Biology)
Secretary: Sara Corsi (double-majoring in chemistry and English)
Treasurer: Jayden Heron (majoring in Biology)
Outreach and Communications Officer: Gabriela Moran (majoring in Biology)
Faculty Advisor: Marjorie Squires, Ph.D.

MARM 2024

The Central Pennsylvania Section of the ACS is proud to present the 2024 Middle Atlantic Regional Meeting of the ACS on June 5-8 in Happy Valley, PA. The theme of this year's MARM is "Celebrating Discovery" and honors the discovery of oxygen in 1774 by Joseph Priestley.

Website
Abstracts due March 4

MARM 2024 CALL FOR PAPERS – COMMUNICATING SCIENCE

The ACS Committee on Public Relations and Communications (CPRC) invites you to the symposium "Communicating Science" to show fellow scientists how you deploy resources and convey enthusiasm for chemistry and closely related sciences to diverse audiences within and outside of chemistry.

Abstracts due March 4

NEW YORK ACS PROJECT SEED

Project SEED is one of the best programs sponsored by ACS. It allows students to develop the laboratory skills as well as the soft skills necessary for them to succeed in college. It also helps students to build their self-confidence and self-esteem and prepare them to become leaders in their fields. The New York ACS had 41 SEED I and SEED 2 participants. They did research at Columbia University, Stevens Institute of Technology, New Jersey City University, New Jersey Institute of Technology, Rutgers University Newark, Rutgers University in New Brunswick, Rutgers Medical School, Montclair State University, Hudson County Community College, Icahn School of Medicine in Mont Sinai, Rowan University and Jose Marti STEM Academy.
All the New York ACS participants presented at different research posters competitions and won many awards, prizes, medals and scholarships. Here is a list of competitions :

1. Students participated in the Junior Science and Humanities Symposium that took place at Rutgers University in New Brunswick and won awards.
2. The regional Intel ISEF took place at Liberty Science Center and the NY SEED students captured 5 gold medals, 18 silver medals and 15 bronze medals. They also won Special Awards including the Water Prize Award.
3. The ACS NY section annual research posters competition took place at St Joseph College in February and NY seed students won several awards and prizes.
4. All students presented at the Union City Annual Science Fair and the NY SEED students captured most of the awards and prizes.
5. At the New Jersey Academy of Science Annual Poster Research Competition, Two SEED students will represent the State at the National Academy of Science Competition in Washington DC.

All the NY SEED senior students were accepted into college and received scholarships and some got a full ride. They have been accepted to Columbia University, the University of Pennsylvania, Cornell University, Yale University and many other Tier One schools. One student, James Pelaez, will be studying Computational Chemistry and Mathematics at Harvard University. He is also a Bill Gates Scholar. Two students were accepted to Columbia University, they will be studying Biomedical Engineering. Five students received the Project SEED Scholarship. Other students will be studying at local universities on a full ride and they are all majoring in the STEM fields. Dr. Karina VR Schäfer from Rutgers University received the Outstanding Project SEED Mentor Award, as shown on the following page. At the 26th Annual ACS NY Section Poster Research Competition that took place at St Joseph's University, Project SEED students swept all the awards. Here are the winners

1st Place	*2nd Place*	*3rd Place*	
Yara Aguilar	*Carolyn Eloy*	*Andy Gonzalez*	*Merisha Fernado*
Joeliz Correa		*Jade Castillo*	*Jose Rubio*
		Julio Cervante	*Lehansa Marambage*
		Valerie Duran	*Claudio Martinez*
		Aidan Fields	

The NY Section is very proud to run an excellent Project SEED Program that inspire young students to pursue careers in STEM.

KARINA VR SCHÄFER, Ph.D. RECEIVES ACS OUTSTANDING PROJECT SEED MENTORING AWARD

Karina VR Schäfer, PhD, is the recipient of the 2023 American Chemical Society Outstanding Mentor award. The primary research of Dr Schäfer lie in the realm of global change and its effects on terrestrial ecosystems. The research focuses on refining carbon budgets of forest ecosystems through field eco-physiological measurements and modeling. While it is extremely important to assess carbon uptake and storage and changes to uptake capacity that might be expected under rising CO_2 conditions, it is also important to investigate climate solutions such as afforestation, reforestation and forest management. In addition to forests, wetlands store and sequester carbon dioxide but also emit methane. Methane and carbon dioxide gases and associated flows and storage in coastal and freshwater wetlands are investigated through field measurements and modeling.

Dr. Karina Shafer has been a Project SEED Mentor for 14 years. Every summer, she invites 2 Project SEED students from the NY Section to join her group. Her mentees have all gone to college and pursued careers in the STEM fields. She has inspired her mentees to continue to do research. Students who received the training in her lab have entered competitions and won awards, prizes, medals and scholarships. Recently, her two mentees were selected as finalists in the JSHS (Junior Science and Humanities Symposium) sponsored by all the military branches and run by Rutgers University. Few years ago, Keyleen Argueta received a Gold Medal at the Regional ISEF(International Science and Engineering Fair). She received a full ride to Seton Hall University. Keyleen continued to do research in college and now she has received a full scholarship to study medicine.

Students performing field measurements in Summer 2023

NEWS FROM OUR PARTNERS

ACS Chemistry for Life®

YCC The Future of Chemistry 50 YEARS

YOUNGER CHEMISTS COMMITTEE TURNS 50! CAN YOU BELIEVE IT!

The ACS Younger Chemists Committee is celebrating their 50-year anniversary at the Spring ACS National Meeting and Exposition in New Orleans, March 17-20, 2024. They have a series of symposia, workshops, networking socials, and fun activities planned. Check it out here.

GRADUATE RESEARCH SYMPOSIUM

The Division of Organic Chemistry invites graduate students to attend the Graduate Research Symposium being held at the University of Virginia in Charlottesville, VA on July 25-28, 2024. Invited speakers from industry and academia will network with student presenting their research as a poster or talk. Workshops and round-table discussions are being organized to present attendees with available opportunities for their post-graduate school careers.

Apply by March 11

APRIL IS CITIZEN SCIENCE MONTH

Sign up to prepare, participate, report activities (# of Acts), and receive a digital certificate and recognition on the Citizen Science Month website. If you are a project scientist or event organizer, this is a great way to reinspire your communities to participate in your project/event in April. All registered projects and events will also be promoted by SciStarter and its media partners leading up to and during the month of April!

Learn more here

CITIZEN SCIENCE MONTH
ONE MILLION ACTS OF SCIENCE

CALL FOR NOMINATIONS

2024 MIDDLE ATLANTIC REGIONAL MEETING (MARM 2024) AWARDS

E. Emmet Reid Award in Chemistry Teaching at Small Colleges celebrates outstanding achievements in teaching chemical sciences at small colleges within the Middle Atlantic Region. Information on this award and nomination procedures are in this document. Nominations are submitted by a Google Form.

Deadline: April 1, 2024

E. Ann Nalley Middle Atlantic Regional Award for Volunteer Service to the ACS recognizes the volunteer efforts of individuals who have served the American Chemical Society, contributing significantly to the goals and objectives of the Society through their regional activities. Please use this nomination form. Nominations are submitted by a Google Form.

Deadline: April 1, 2024

The William "Bill" Suits Undergraduate Award for Outstanding Service to the American Chemical Society. The Bill Suits award recognizes an outstanding undergraduate student who has provided exemplary volunteer service in the Mid-Atlantic Region of the ACS. Academic records, volunteer service in the region, and a student's application statement will be considered. Please submit the completed nomination form via Google Forms.

Deadline: April 1, 2024

ACS Division of Chemical Education Middle Atlantic Region Award for Excellence in High School Teaching recognizes, encourages, and stimulates outstanding high school chemistry teacher in the Middle Atlantic Region. Please use this nomination form. Nominations are submitted by a Google Form.

Deadline: April 1, 2024

OPPORTUNITIES

For High School Students & Teachers

ChemClub Student Scholarship
Due April 8

ACS Hach Second Career Teacher Scholars
Due May 1

ACS–Hach Post-Baccalaureate Teacher Scholarship
Due May 1

For Undergraduates

ACS Bridge Program
Due March 15

Women Chemists Committee Overcoming Challenges Award
Due April 1

Priscilla Carney Jones Scholarship
Due May 1

For Graduate Students / Postdocs

Irving S. Sigal Global Mobility Award Program
Due March 31

Ciba/YCC Travel Award
Due May 15

Division of Inorganic Chemistry Travel Award
Due June 1

Women Chemists Committee/Eli Lilly Travel Award
Due June 1

For Professionals

Brazilian Women in Chemistry Award
Due March 6

ACS Petroleum Research Fund Grants
Due March 8

2024 Early Career Industrial Investigator Award – ACS Division of Inorganic Chemistry
Due March 11

Global Innovation Grant
Due April 12

Local Section Member Engagement and Enhancement (LS-MEET) Grant
Due May 31

William H. Nichols Medal
Due May 31

Abstracts Due April 1

NEW YORK ACS' YOSRA BADIEI HONORED AS WCC RISING STAR AWARDEE

The ACS Women Chemists Committee Rising Stars Symposium on March 18th at the Spring ACS National Meeting and Exposition in New Orleans will honor Prof. Yosra Badiei of St. Peter's University. New York ACS members recognize Prof. Badiei for her volunteering as a session chair at MARM 2023 last June. Check out her talk, entitled:

Catalyzing change: Molecular catalysis for artificial photosynthesis to empower a diverse and next-generation of sustainable chemists

And nominate a fellow chemist for next year's WCC Rising Stars Symposium.

Nominations Due June 15

JOB BOARD

Starting your career or looking for the next challenge? Review postings at the New York ACS Job Board. Email your job postings to Jobs@NewYorkACS.org for inclusion.

Academic Positions

Full-time Faculty, Chemistry – Bard high School Early College Newark
Apply here

Assistant/Associate Professor of Organic Chemistry – Hofstra University
Apply here

Assistant Professor, Biochemistry – Iona University
Apply here

Director of Operations and Deputy Executive Director (Administrative Officer) – CUNY Advanced Science Research Center
Apply here

Director of the Mass Spectrometry Facility – Stony Brook University
Apply here

Dean, College of Arts and Sciences – New York Institute of Technology
Apply here

Program Officer – ACS-PRF
Apply here

Core Facilities Manager – Barnard University
Apply here

Industrial Positions

Lead Analytical Chemist – Orbital Materials
Apply here

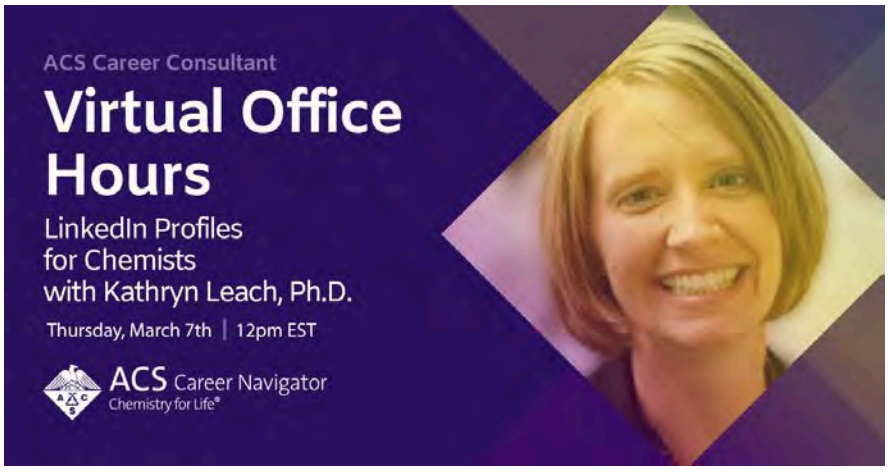
Environmental Chemist II – Evonik
Apply here

Principal Scientist, Analytical Development – VIATRIS
Apply here

Scientist, Analytical Research & Development – Contract Pharmacal Corp
Apply here

Director, Regeneron Genetic Medicines – Regeneron
Apply here

Senior Scientist, Chemistry – Merck
Apply here



NEW YORK ACS ANALYTICAL TOPICAL GROUP

SPONSORED BY THE NY ACS ANALYTICAL CHEMISTRY TOPICAL GROUP

HOW COLOR CHANGED THE WORLD

Speaker: Mary Virginia Orna
Professor of Chemistry, Emerita
College of New Rochelle

Monday, March 25, 2024

12:30 p.m.

Cornelia Hall, Room 108

Color has been an exciting and enjoyable part of human life ever since the color-sensitive eye evolved over a million years ago. However, the junction between color and chemistry, and color and history, is of more recent origin. This talk traces the history of color usage as a chemical endeavor from the earliest records to the present day focusing on four major areas: fashion, pharmaceuticals, food, and fun. It is a trajectory peppered with stories to help us understand the mystery of color as a universal experience and phenomenon; its chemical history, as you shall see, even changed the course of history in the 20th century. This talk is based on her popular book, "The Chemical History of Color" (Springer, 2013).

For more detailed information about the guest speaker, the topic, and this event, **scan the QR code** or go to: www.iona.edu/CSI

ACS Local Section New York

IONA UNIVERSITY