

THE Indicator

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Sandra Keyser, Ph.D.
2024 North Jersey ACS Chair
See page 5



ACS Local Section
North Jersey



ACS Local Section
New York

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THIS MONTH IN CHEMICAL HISTORY

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

The contributions of the Muslim world in the 9th. And 10th. Centuries to the advancement of the sciences are, I believe, greatly underappreciated by most of us. They begin with the establishment of schools of translation from Greek or Syriac manuscripts into Arabic. The caliph Haroun-ar-Rashid – yes he of the Arabian Nights tales – established the House of Wisdom in the late 9th Century in Baghdad and sent out agents to Constantinople to buy manuscripts to be translated. The main translators were Hunayn Ibn Ishaq, a Christian Arab, and his son.

The majority of the translations were of medical works including Hippocrates and Galen. These works included some chemical (alchemical?) remedies, mostly plant-based; the beginnings of a pharmacopeia. Because of differences in the available manuscripts there were multiple versions of the translations. For example, there were 15 Hippocratic works and 90 works by Galen, many of which were almost duplicates. By about 1000 ACE most of the available works of the Greek natural philosophers were available in Arabic. It is noteworthy that in the succeeding centuries these works were translated into Latin by Western scholars who traveled to the Iberian peninsula to learn Arabic in order to make these priceless ancient Greek works available in Latin, the common language of the Christian church in Europe.

Although there are ongoing disputes among scholars as to the impact of the accession to a large body of early scientific thought, it is my opinion that a substantial number of Islamic scholars accepted this new knowledge and decided to build on it – to take it as a starting point from which to move forward with their own studies. Some of the most impressive advances were in areas outside the scope of my columns, notably in optics, astronomy, and mathematics. So I will confine my discussion to alchemy, a (pseudo?) science that flourished in Islam, building on the foundations of Alexandrine alchemy. By the period I am discussing it had become clear that there were two alchemies: practical, and theoretical. Theoretical alchemy derives from the Aristotelian view that there was one primal material, expressed terrestrially as four elements: earth, air, fire, and water. Since all were made from the same primal matter, transmutation was possible. Transmutation was the domain of practical alchemy. The Islamic alchemist Jabir (9th. To 10th. Century) added a new twist. Believing that metals grew in the ground, just like plants, he added salt and mercury from which metals were formed, to the four elements of Aristotle. The “salt” and “mercury” of Jabir are not the common substances we know by those names; they are principles or essences of saltiness and mercury-ness.

There were many important Islamic alchemists who added to both the theory and practice of the field. Among the most significant are Razi and Avicenna, the latter being an important physician as well, whose Canon of Medicine became a standard text in European medical schools for centuries. This all goes to show that Islamic scientists continued the work of the Greeks that preceded them and set the stage for the steady progress of the European science of the Middle Ages.

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THE Indicator

<http://www.theindicator.org/>

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EDITORIAL DEADLINES

January 2024	December 16, 2023
February 2024	January 16, 2024
March 2024	February 16, 2024
April 2024	March 16, 2024
May 2024	April 16, 2024

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Address advertising correspondence to [Advertising Manager](#). Other correspondence to the [Editor](#).

December Calendar

NORTH JERSEY SECTION**Friday, December 15, 2023**

US National Chemistry Olympiad Registration

Deadline

*See page 8***Saturday, December 16, 2023**

Executive Committee Planning Meeting

**NEW YORK SECTION****Wednesday, December 6, 2023**

Science Café

*See page 12***Thursday, December 7, 2023**

Long Island Subsection

*See page 12***Friday, December 15, 2023**

US National Chemistry Olympiad Registration

Deadline

*See page 9***SAVE THE DATE****Saturday, January 20, 2024**

NYACS Sectionwide Conference

See page 11

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NORTH JERSEY CHAIR'S MESSAGE

I am honored to be the Chair of the North Jersey Local Section! Our section is rich with opportunities to become an active member: our vibrant topical groups, including Mass Spectrometry, NMR, Drug Metabolism, Teacher Affiliates, and Organic topical groups; committees, such as our Women Chemists, Younger Chemists, and Communications Committees; and outreach opportunities between Chemists Celebrate Earth Week, National Chemistry Week, Chemistry Olympiad, NJ Chemistry Olympics (NJCO), and Edison Day. The symposia, activities, lectures, poster sessions, outreach events, and meetings are all opportunities to network, learn, and engage with our scientific and non-scientific community. The success of our local section can be attributed to Justyna Sikorska, NJACS 2023 Chair and fearless leader, as well as our Executive Board! Thank you all for your hard work, your dedication, and amazing efforts!

Evidence of our success was supported by our several ChemLuminary nominations in 2023. NJACS was a finalist for 6 separate categories, including Best Activity or Program Stimulating Member Involvement, Outstanding AACT Support Award, Outstanding Engagement with K-8 Students, Outstanding Ongoing NCW event, Outstanding Project SEED Program Award, and Outstanding Performance by a Local Section. We were awarded the Outstanding AACT Support Award, and I'm looking forward to making our case for winning additional awards in the upcoming year!

As chair, I will continue to support and promote our topical groups and committees, as well as run the Baekeland Symposium in April 2024. I would also like to focus on the following goals in the upcoming year:

- Promote membership and engagement in NJACS – with a new and elegant NJACS website that has been facilitated by Justyna and the Website Committee as well as Kathleen Gilbert's excellent monthly newsletter, we have a platform for better communication with our membership. I look forward to supporting science cafes and new events to engross and deeply engage the ACS members who might not be involved at the local level.
- Enhance the leadership pool across NJACS – the NJACS Executive Board meetings are open to the public, and we've brought in a significant number of fresh faces to our meetings in 2023. I'd like to continue to facilitate that new involvement, while also creating additional opportunities within the Executive Board for interested members. This can help develop a pipeline of leadership that will enrich our organization.
- Collaborate and partner with other local sections – 7 different local sections divide up the state of New Jersey, and the opportunities to work with these other local sections are enhanced by our proximity. We should capitalize that geographic accessibility!



**Submit your articles for the January 2024
issue by December 16th**

<http://www.theindicator.org/>

A decade ago, I was a non-tenure-track professor and volunteered for our section's National Chemistry Week Event, ChemExpo. During the event, Marilyn "Bobbi" Gorman asked if I'd be interested in being more involved at the local section level – that question was a turning point and has since led to an abundance of committee work, judging students and events, and serving as an NJACS Councilor (thanks, Bobbi!). In 2020, I changed careers to become a safety professional in academia then industry. I have recently joined EHS at Merck, and the success of my career transition is due in no small part to this local section. The networking and leadership opportunities as well as the support and encouragement of my fellow NJACS Executive Board members catalyzed these momentous changes in my life. NJACS has changed my life for the better, and I'm grateful for the opportunity to work with and lead such an amazing community.

Looking back on this decade, I want to emphasize the myriad opportunities to volunteer and lead within NJACS. Our volunteers bring passion, depth of knowledge, and diverse perspectives our symposia, outreach activities, meetings, colloquia, and our executive board meetings. The richness of our local section is truly inspiring – if you aren't already, I urge you to become an active member within our local section and you'll find that there is much to engage and stimulate you as a volunteer! Please visit our website (www.njacs.org) or contact me at skeyser@njacs.org to find out more!

I wish you all a joyful and fulfilling 2024!

Sandra Keyser, Ph.D.

2024 Chair, North Jersey Local Section of ACS



NORTH JERSEY SECTION ACS ELECTION RESULTS

The North Jersey Section is pleased to announce the 2024 election results!

Chair-Elect: *Robert Menger*

Secretary: *Elizabeth (Bettyann) Howson*

2024-2026 Councilors: Alan Cooper, Sandra Keyser, Amanda Peterson Mann

2024-2026 Alternate Councilors: Cecilia Marzabadi, Justyna Sikorska, Jasmine Lu

Congratulations to our newly elected leaders for 2024!

Interested in running for a 2025 North Jersey ACS section leadership position?

- ✓ Attend the Executive Board meetings each month - they're open to all Section members! [Contact our Communications Chair](#) for details!
- ✓ [Read the Indicator](#) and check out [our website](#) to stay current with our events
- ✓ Volunteer for events and activities by contacting an Executive Board member or [filling out this interest form](#)

2023 BAEKELAND AWARD ANNOUNCED

The North Jersey section of the ACS and the Baekeland Award Jury are pleased to announce that the 2023 Leo Hendrik Baekeland Award winner is Prof. [Keary Engle](#) of The Scripps Research Institute. Prof. Engle is being honored for his work in the catalyzed functionalization of alkenes and alkynes. The Baekeland Award will be presented at the Distinguished Symposium in his honor,



Prof. Engle earned his B.S. in Chemistry, Economics, Mathematics, and Statistics from the University of Michigan in 2007, and his Ph.D. in chemistry from The Scripps Research Institute along with a D.Phil. in biochemistry from the University of Oxford in 2013. After working as an NIH postdoctoral research fellow at California Institute of Technology, Prof. Engle returned to Scripps as an Assistant Professor in 2015. He was promoted to full professor in 2020.

Prof. Engle has advanced the field of C–H activation using mono-N-protected amino acids with palladium(II), developing stable fluoride reagents that are modulated using hydrogen-bond donors, and rationalizing the reactivity of ruthenium catalysts for olefin metathesis based on the Ru–O bond strength. His independent research work that has focused on the introduction of functional groups to any alkene reagent with complete chemo-, regio-, stereo-, and enantioselectivity is impressive and exemplifies the Leo Hendrik Baekeland Award for advancements of the chemistry field.

His collective work has been published in over 100 papers and cited over 19,000 times. Keary has received numerous awards and fellowships including a National Academy of Sciences [Kavli Frontiers in Science](#) Fellow, NSF [CAREER Award](#), and an [Alfred P. Sloan Research Fellowship](#).

Further details about the Baekeland Symposium in 2024 will be featured in upcoming editions of the Indicator and on the [NJACS website](#).



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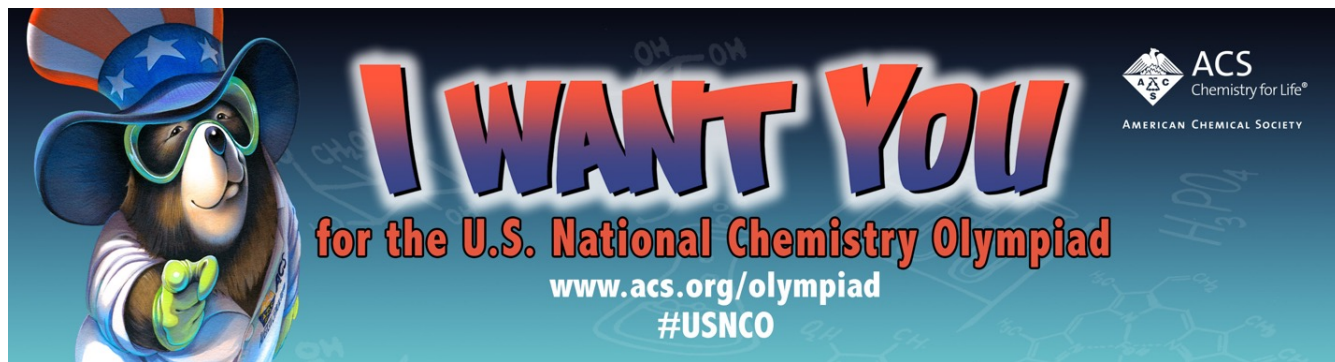
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US NATIONAL CHEMISTRY OLYMPIAD – REGISTER BY DECEMBER 15th

Dear North Jersey Colleagues,

On behalf of the North Jersey Section of the American Chemical Society, I invite your school to participate in the 2024 U.S. National Chemistry Olympiad (USNCO). This program is a multi-tiered competition at the local, national, and international levels that promotes excellence in high school chemistry. In the past 19 years, nine students from NJ ACS have been selected to represent the United States at the International Chemistry Olympiad (IChO). In 2022, we had two students reaching the top 50 nationally, and five others finishing in the top 150. The next IChO will be held in Riyadh, Saudi Arabia from July 21 to July 31, 2024.

Interested students are invited to take the Local Qualifying Exam at participating schools, and teachers may schedule a single testing date at their convenience between March 1 and March 15, 2023. Due to the security breach of the local exam this year (2023), there will be significant changes to the administration of the Local Exam in 2024.

1. All tests will be on paper. The on-line test option will no longer be available.
2. Every student must register at the [USNCO website](#) by **December 15, 2023**. They will be asked to fill in their school's name. Please ask them to use exactly the **same spelling** for your school (e.g. High School vs HS). Different spellings of the same school create logistical challenges for us.
3. Please register your school with North Jersey ACS by **Dec 8, 2023** at [2024 USNCO participation form](#)

More information about the competition is on the USNCO exam [preparation page](#). There is also a promotional video by an IChO [gold medalist](#).

There is no cost to the schools for participating in the competition. All students at an individual school should take the test at the same time. Top scoring students will be invited to take the National Exam in April 2024.

Thank you for promoting the study of chemistry in New Jersey.

*Sincerely,
Bettyann Howson
Chemistry Olympiad Coordinator, NJACS*

US NATIONAL CHEMISTRY OLYMPIAD – REGISTER BY DECEMBER 15th

**American Chemical Society's New York Section, Inc.
NewYorkACS.online**

Hi Chemistry Teachers,

It is my pleasure to invite you to register students to participate in the 2024 U.S. National Chemistry Olympiad (USNCO). The Olympiad is a multi-tiered event. The first tier, the Local Exam, is open to all high school students. Participation in the second and third tiers, the National Exam and the Study Camp, is based on student performance at the previous level. Finally, a team will be chosen to participate in the International Chemistry Olympiad. Below you will find information about the fee waiver we are offering to encourage broad participation in the Olympiad as well as detailed information as to how to register students to participate. The relevant materials needed to register students are attached to this message. Additionally, the information provided below and access to all the necessary forms can be found at our [website](#). I encourage you to register students and provide them with the opportunity to participate in this exciting event.

Sincerely,
Stephen Z. Goldberg
Chair, NYACS Olympiad Committee
goldberg@adelphi.edu or olympiad@newyorkacs.org

FEE WAIVERS AVAILABLE FOR 2024

Schools that have never participated in the Olympiad or have not participated more recently than 2018 may apply for a waiver of the registration fee. Applications will be reviewed in the order received.

REGISTRATION INSTRUCTIONS FOR THE 2024 CHEMISTRY OLYMPIAD

The local exam of the 2024 Chemistry Olympiad will be offered at **10:00 a.m.** on **Saturday, March 9** and **Sunday, March 10**. The exam is a 60 question multiple choice exam lasting 110 minutes. The exam will be offered in an online format and students planning to take the exam should have access to two internet accessible devices during the exam period.

As was the case in previous years, students will need to register with both the New York Section **and** at the ACS Learning Center in order to access the online exam. The national office of the ACS has implemented a new deadline for registering with the Learning Center. **The deadline for registering at the Learning Center is December 15.** Students can register at the Learning Center [here](#).

We recognize that this may present some difficulties and have tried to have the deadline changed. Unfortunately, we have been informed by the national office that the December 14 deadline should be considered a firm deadline.

If you have any questions or need assistance please contact Stephen Z. Goldberg, Chair, NY-ACS Olympiad Committee, at olympiad@newyorkacs.org

NEW YORK SECTION MEETINGS

<http://www.newyorkacs.online>

BOARD MEETING DATES FOR 2024

The New York ACS Board Meeting dates are given below. The meetings will be held at the US Merchant Marine Academy Library Crabtree Conference Room and are open to all. However, an RSVP for in-person attendance is required 5 days before the meeting, 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.

The board meetings dates are, as follows:

Saturday, January 20, 2024 (in person)
Sectionwide Conference

Monday, February 12, 2024 (virtual)

Monday, March 11, 2024 (hybrid)

Friday, April 12, 2024 (in person)

William H. Nichols Symposium and Medal Award Dinner at the Sonesta Hotel, White Plains, NY.

Monday, June 10, 2024 (hybrid)

Monday, September 16, 2024 (hybrid)

Monday, November 25, 2024 (hybrid)

More information will be posted in future monthly issues of *The Indicator* and on the New York ACS [website](http://www.newyorkacs.online).

2024 SECTIONWIDE CONFERENCE KEYNOTE SPEAKER DR. RAYCHELLE BURKS



After working in a crime lab, Dr. Burks returned to academia, teaching, and forensic science research. Her research team is focused on the development of field portable colorimetric and luminescent sensor arrays for the detection of analytes of mainly forensic interest such as explosives, chemical weapons, controlled substances, and latent prints. She writes a science-meets-true crime column called "[Trace Analysis](#)" for *Chemistry World*. Beyond forensics, Dr. Burks collaborates with colleagues in a variety of fields on projects where low cost and reliable rapid screening methods are needed. An in-demand science communicator, Dr. Burks regularly appears on TV, in podcasts, at large genre cons such as DragonCon and GeekGirlCon, and other venues to converse on chemistry, forensic science, and STEM meets pop culture. She is the 2020 recipient of American Chemical Society's Grady-Stack Award for Interpreting Chemistry for the Public. She is a member of several local, national, and international committees, task forces, and projects focused on social justice and STEM. In 2021, Dr. Burks was listed as one of the "[6 women who are changing chemistry as we know it](#)" by BBC Science Focus Magazine.





2024 SECTION-WIDE CONFERENCE
SATURDAY, JANUARY 20, 2024, 10:00am – 1:00pm
Ballroom DAC-416A at St. John's University, Jamaica, NY
Registration is free for this In-Person Event! [Click here to register](#)

PROGRAM

- 09:30 AM** **Continental breakfast will be available**
- 10:00 AM** **ACS, NEW YORK SECTION COMMITTEE PLANNING SESSIONS FOR 2024.**
Educational Activities: Chair: Dr. Alison G. Hyslop
Chemagination, Chemists Celebrate Earth Day, Continuing Education, High School Chemistry Olympiad, National Chemistry Week, Nichols Foundation High School Teacher Award, Project SEED, Student Membership, Student Award Recognition
Member Affairs: Chair: Dr. Joseph M. Serafin
ACS Fellows, Awards, Employment and Professional Relations, History of the New York Section, Indicator, Membership, Outstanding Service Award, Minority Affairs
Program Review: Chair: Dr. Anne T. O'Brien; Dr. Rolande Hodel, Westchester Subsection Chair, presiding Subsection and Topical Discussion Group Chairs
Public Affairs: Chair: Dr. Robert P. Nolan
Academe and Industrial Relations, Environmental Chemistry, Fund Raising, Government Affairs, Information Technology, Public Relations, Speakers Bureau
- 10:40 AM** **REPORTS FROM THE CHAIRS OF THE COMMITTEE PLANNING SESSIONS**
- 10:50 AM** **GREETINGS FROM THE ACS NEW YORK SECTION 2024 CHAIR** **Dr. Ping Furlan**
US Merchant Marine Academy
- 11:00 AM** **AWARD PRESENTATIONS**
Service Plaque and Pin to the 2023 ACS New York Section Chair **Dr. Mary Virginia Orna**
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ACS New York Section Outstanding Service Award **Dr. Joseph Serafin**
St. John's University
Outstanding Four-Year University with Graduate School Chemistry
Faculty Teaching Award **To be announced**
Outstanding Four-Year Undergraduate College and University
Chemistry Faculty Teaching Award **To be announced**
Outstanding Two-Year College Chemistry Teaching Award **To be announced**
Nichols Foundation High School Chemistry Teacher Award **Xue Qing Liang**
New Utrecht High School
- 11:35 AM** **PRESENTATION OF CANDIDATES FOR THE 2024 ELECTIONS** **Dr. Eric Chang**
Pace University
2024 Chair Elect ACS NY Section
- 11:45 AM** **Break** There will be poster presentations by New York Section Project SEED Students
- 12:00 AM** **KEYNOTE SPEAKER:** **Dr. Raychelle Burks**
Title: American University
Abstract:
- 1:00 PM** **CONCLUSION OF THE MEETING:** Join with colleagues for lunch at a local restaurant.

SCIENCE CAFÉ**Opportunities and Challenges with AI**

Speaker: Wendy Cornell, Ph.D.
Manager and Strategy Lead
IBM Research Accelerated
Discovery

Date: **Wednesday, December 6, 2023**

Place: Gianfranco Pizzeria and
Restaurant
88 Virginia Road
North White Plains, NY 10603
914-682-5655

Time: 5:30 PM Social and Snacks
6:00 PM Talk and Discussion
7:30 PM Option to Order Dinner

RSVP: By December 4th via [Email](#)

[Download flyer here](#)

Biography: Wendy Cornell is a manager and strategy lead in the IBM Research Accelerated Discovery pillar where her team is developing AI foundation models to support molecular- and target-based drug discovery. Prior to joining IBM, Wendy led teams at Merck and Novartis in developing and applying natural language processing, machine learning, and physics-based models to support key discovery decision stage-gates. Wendy received her PhD from the University of California at San Francisco (UCSF). An ACS Fellow, she is a past Program Chair and Chair of the ACS Computers in Chemistry (COMP) technical division.

**LONG ISLAND SUBSECTION****Holiday Party & Seminar**

Speaker: Dr. Paris Svoronos
Professor Emeritus
Queensborough Community College

Date: **Thursday, December 7, 2023**

Place: Nassau Community College
CCB Building Room 252
One Education Drive
Garden City, NY 11530

Time: 6:00 PM

[RSVP here by December 4th](#)

Abstract: The history of alcohol- its production, consumption and impact on the human civilization through the centuries will be discussed. The historic period will cover the various antiquity civilizations and will continue until modern times. Its isolation via fermentation as well as industrial applications will be presented. Finally, a short description of the metabolic pathway and side effects will be highlighted.

Details: This is a free event. Dinner will be served at 6:00 p.m. The seminar will start at 6:45 p.m. Registration is required and is limited to 100 people. Campus safety will not ticket cars in student lots from 5:00 p.m. until the conclusion of the event. Questions can be emailed to [Terrence Black](#).

[Download flyer here](#)

MEETING REPORTS

NORTH JERSEY HOSTS SUCCESSFUL CHEMEXPO IN CELEBRATION OF NATIONAL CHEMISTRY WEEK 2023

Contributed by Lucas Koziol

In partnership with Liberty Science Center, the North Jersey chapter of ACS hosted the 29th annual ChemExpo on October 21, 2023 in celebration of National Chemistry Week. Over 2500 visitors came to the Liberty Science Center in Jersey City, NJ to engage in demonstrations centered on this year's theme of "the Healing Power of Chemistry" with student volunteers from colleges and high schools from all across New Jersey. Over 90 student volunteers represented their schools: Caldwell College, Drew University, New Jersey City University (NJCU), Ramapo College, Seton Hall University, and St. Peter's University, as well as Immaculata High School, JP Stevens High School, and Princeton International School of Mathematics and Sciences (PRISMS).

Caldwell College (right) provided a hands-on "poly-glue" demonstration to teach kids about polymers. They compared rigid polymers, as would be used in an arm cast, with soft, slime-like polymers, by using different combinations of Elmer's glue, Borax and laundry detergent. Children of all ages learned how detergents can be used to cross-link long molecular chains to tailor polymer stiffness, and as an added bonus, created and personalized their own colorful polymers and took them home in a Ziploc bag.



Children show off their slime that they made with Caldwell students

THE HEALING POWER OF CHEMISTRY



Drew chemistry student teaches attentive children about vaccines

Drew University (left) put on a comprehensive demonstration about vaccines, teaching kids about how our bodies use Y-shaped proteins called antibodies carrying virus-recognizing fragments that target antigens on the virus cell's surface. Kids added food coloring drops to water bottles to compare how our body's response to infection differs with and without vaccination.



NORTH JERSEY HOSTS SUCCESSFUL CHEMEXPO IN CELEBRATION OF NATIONAL CHEMISTRY WEEK 2023 (continued)

NJCU came out in full force with three full tables of demonstrations. They heroically tackled the notoriously-difficult concept of chirality, providing chemical ball-and-stick models of ibuprofen and thalidomide as examples. They also tried to overlay their right and left hands to explain R- and S-stereochemistry to kids and adults alike. In a more sensory exhibit, they showed that different skin creams, containing as active molecule either capsaicin or menthol, can produce distinct heating and cooling sensations on our skin.



Child assesses the exothermic and endothermic nature of certain creams with Ramapo College

Students at Ramapo College had one table dedicated to “digestion” and a second table dedicated to “indigestion.” The digestion team exhibited a row of bottles containing different common foods that had been dissolved for several days in vinegar (mimicking the acidic environment of our stomachs). These “digested” foods (including milk, strawberries, and gummy bears) were closely scrutinized by kids to analyze the different nutritional contents floating around in the bottles. Fascinating and slightly icky. Not to be outdone, the indigestion team taught children the chemical reaction behind burping.



Seton Hall asks children to assess the acidity of common beverages

Seton Hall University provided a series of exhibits visually showing how antacids function when mixed with different foods all containing different pH. Children could see the more vigorous bubbling action of the antacid as the food increased in acidity. They also gave a visual demonstration of the effects of sunscreen under UV light.

NORTH JERSEY HOSTS SUCCESSFUL CHEMEXPO IN CELEBRATION OF NATIONAL CHEMISTRY WEEK 2023 (continued)

St. Peter's University demonstrated the decomposition of hydrogen peroxide into hydrogen and oxygen using an enzyme catalyst, showing the liberated oxygen gas bubbling through colored liquid and explaining its health benefits (such as its oxidating effect against microbes). Children were also able to create their own brightly-colored take-home bath-bombs. The author is pleased to report that his own children gave their bath bombs an A+.



Child shows off his model that he made with Saint Peter's students



Children observe the decomposition of hydrogen peroxide in the presence of yeast with Saint Peter's students

Not to be outdone, three high schools also presented at this year's ChemExpo, and their chemistry knowledge was top-notch. Immaculata High School students were kept busy with their very popular exhibit on hand sanitizers. Children first learned about the chemistry of each of the components in hand sanitizer. Then, they added each component themselves to make their own bottle of hand sanitizer from scratch. JP Stevens High School came with a large turnout. One experiment was directed to the benefits of tooth brushing. Children were handed toothbrushes pre-loaded with toothpaste, and diligently scraped hard-boiled eggs to explore the whitening action of a key toothpaste ingredient, sodium bicarbonate. The egg-shells, which had been stained with an acid, grew whiter upon scrubbing, demonstrating this cleansing acid-base reaction that happens each time we brush our teeth.



Children learn about the effects of teeth brushing with JP Stevens

NORTH JERSEY HOSTS SUCCESSFUL CHEMEXPO IN CELEBRATION OF NATIONAL CHEMISTRY WEEK 2023 (continued)

The author can only hope his kids were paying attention. Another JP Stevens exhibit was dedicated to understanding the different parts of the electromagnetic spectrum of sunlight, and the role of titanium dioxide as a sunscreen ingredient in absorbing harmful UV components. Volunteers dabbed sunscreen onto silica plates, placed them inside a dark box, and then shined UV light onto them to visually demonstrate the absorption effect of sunscreen. PRISM, coming all the way from Princeton, NJ, also had a strong showing with multiple exhibits to share. In one, they discussed the chemical structure of the chemotherapy drug cis-platin. Using 3D drawings and ball-and-stick-models, they showed how one isomer of the drug is able to fit snugly into the DNA double-helix to prevent tumor cells from replicating, while the other isomer would not have the right 3D geometry. Children were intrigued by this understandable, real-world example of cis- and trans- isomerism. In another exhibit, PRISMS students compared a few different types of face masks commonly used to protect against Covid. They also dissected the ubiquitous surgical mask that we are all familiar with into its three layers. They reported their results from a literature search into each layer and made their own hypotheses about the functions. The author learned that the innermost layer is used mostly to adsorb the moisture from exhaling. It was a great example of the deeper chemistry behind a common everyday object.

Judges Keisha Stephen, Debra Sweet, Susanne Lepore, Mirlinda Biba, Derrick Swinton, and Lucas Koziol evaluated all of the demonstrations and selected the winners in the college competition, while all three teams in the high school category received equal prizes for their excellent work. The first-place prize for the college category went to Ramapo College for their presentation on digestion and indigestion. The runner-up prize went to NJCU for their presentations on chirality, the chemical action of painkillers vs. vaccines, and the heating and cooling effects of cremes on the skin. The third-place prize went to Drew University, for their presentation on the mechanism of action of vaccines in the human body. The prizes were awarded based on the depth of chemical knowledge demonstrated, ability to explain the science in an engaging manner to a broad audience, and overall creativity of the presentations. Congratulations and a big thank-you to all the teams who participated this year!

Financial support from NJACS made this event possible. The event was also made possible by the support and enthusiasm of all the student volunteers, their chemistry teachers and professors, the Liberty Science Center, and the ChemExpo 2023 Steering Committee: Sandra Keyser, Kathleen Gilbert, Marilyn Gorman, and Miriam Gulotta.

NJACS looks forward to another exciting event next year!

**The Indicator is posted to the web on the
1ST of the month at
<http://www.theindicator.org/>**

**2023 NATIONAL CHEMISTRY WEEK ILLUSTRATED POEM CONTEST
NORTH JERSEY LOCAL SECTION WINNERS**

Congratulations

Congratulations to the winners of the NCW Illustrated Poem contest. Thank you to all the student participants, the judges and the teachers for their encouragement.

Middle School:

1st Place

Black Death

Aadya Kumar

Gr. 6

Kent Place School

Summit, NJ

2nd Place

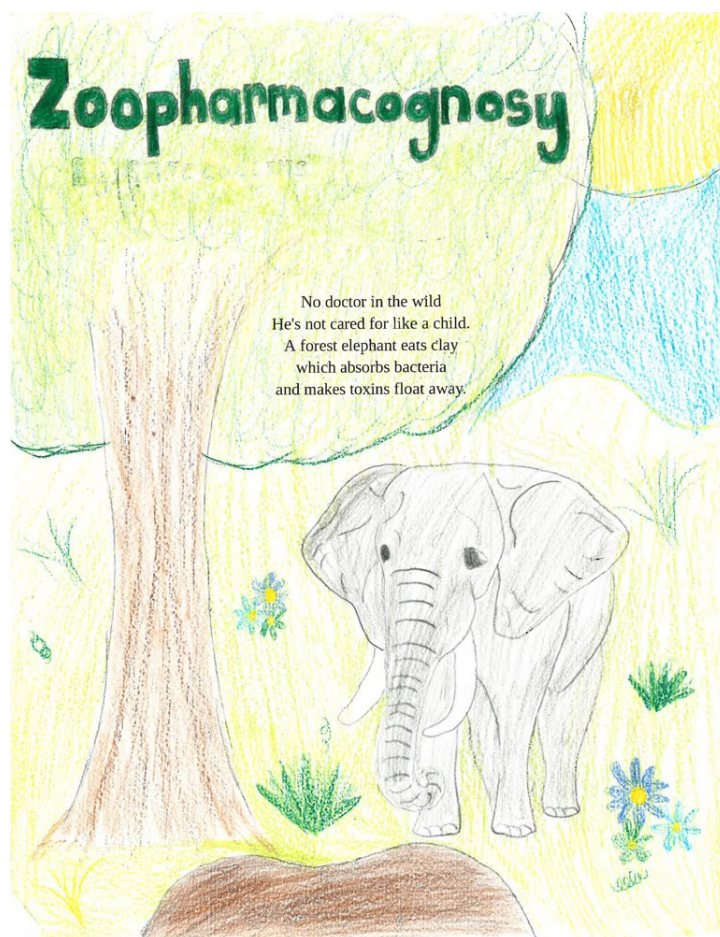
Zoopharmacognosy

Cate Collins

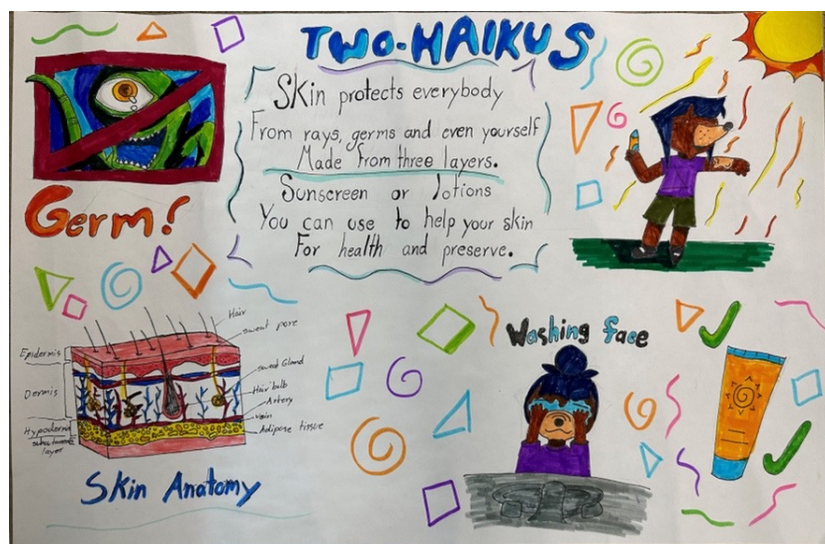
Gr. 8

Gr. 8

Summit, NJ



2023 NATIONAL CHEMISTRY WEEK ILLUSTRATED POEM CONTEST NORTH JERSEY LOCAL SECTION WINNERS (continued)



3rd Place (tie)

Two Haikus

Venus Singana

Gr. 7

Lake Riviera Middle School

Brick, NJ

Power of Mercury

Ananya Mittal

Gr. 7

Kent Place School

Summit, NJ







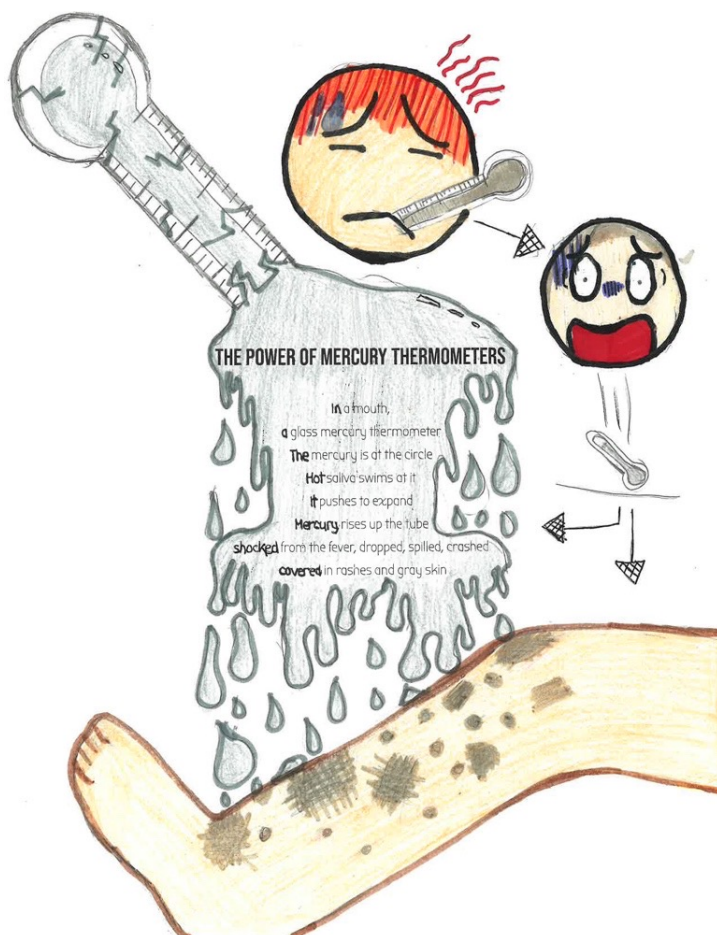
Solving material problems with
evolving solutions since 1966

<p>Thermal</p> <p>Polymers</p> <p>Chemicals</p> <p>Metal Phases</p> <p>Contaminations</p> <p>SEM - EDS</p> <p>AUGER</p> <p>FTIR</p>	<p>Defects</p> <p>Castings</p> <p>Corrosion</p> <p>Quality Check</p> <p>Product Failure</p> <p>DSC - TGA</p> <p>ESCA</p> <p>XRD</p>
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**2023 NATIONAL CHEMISTRY WEEK ILLUSTRATED POEM CONTEST
NORTH JERSEY LOCAL SECTION WINNERS (continued)**

High School:

1st Place

Science and Fairytales

Leyla Tiryaki

Gr. 12

Thomas Edison Energysmart

Charter School

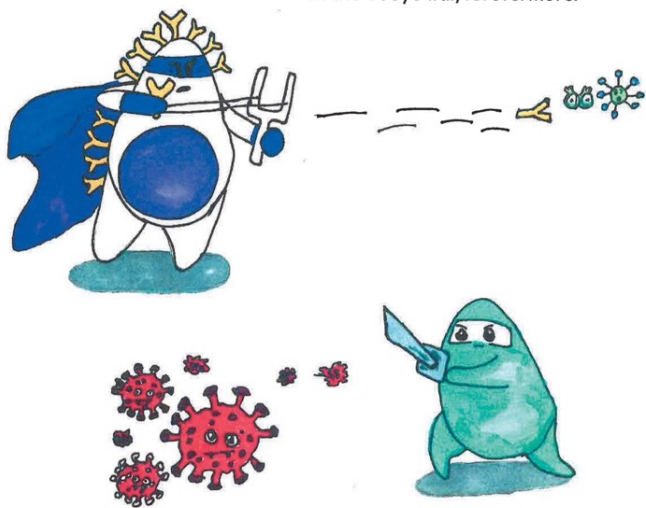
Somerset, NJ



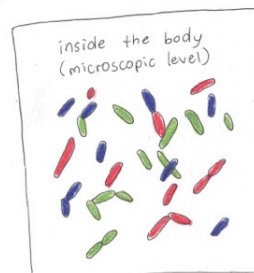
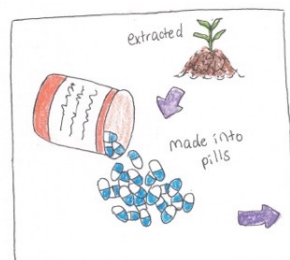
THE HEALING POWER OF CHEMISTRY

Antibiotics

In cells so small,
antibodies play against invaders;
they save the day!
Tiny dancers on a chemical spree,
defend our bodies with glee!
Unseen heroes, in battles they soar.
In the body's war, forevermore!



Amoxicillin, penicillin, metronidazole,
Inhibit the growth of bacterial foes,
Targeting infections, providing relief,
Heroic microorganisms extracted from soil and molds,
Prepped and pressed into perfectly dosed pills,
With many yet to be discovered still,
Tiny but mighty, saving our lives.



2nd Place

In Cells So Small

Nada Nassar

Gr. 10

Fair Lawn High School

Fair Lawn, NJ

3rd Place

Antibiotics

Maleeha Noor Chaudhry

Gr. 10

Noor-UI-Iman School

Monmouth Junction, NJ

**2023 NATIONAL CHEMISTRY WEEK ILLUSTRATED POEM CONTEST
NEW YORK LOCAL SECTION WINNERS**

CONGRATULATIONS!

The New York Local Section congratulates the 82 middle and high school students that participated in this year's Illustrated Poem contest for National Chemistry Week. The first-place winners are shown below. Jolene Cao's illustrated poem won 2nd place in the national contest!

**Middle School
1st Place**

Skin Anatomy

Olivia Logoza

Gr. 8

St. Luke School

Whitestone, NY

High School

1st Place (local) & 2nd Place (Nationally)

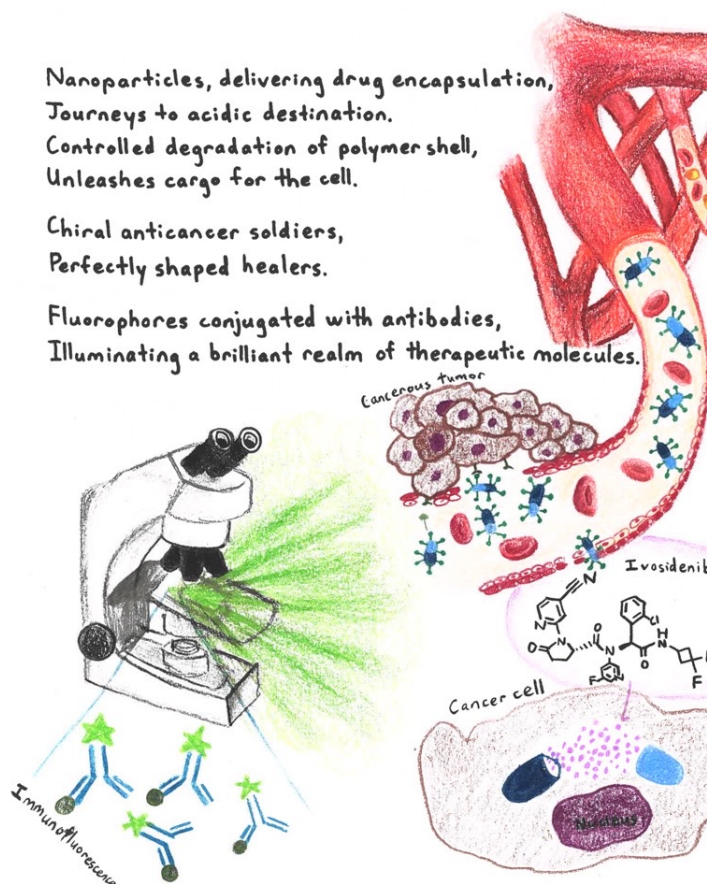
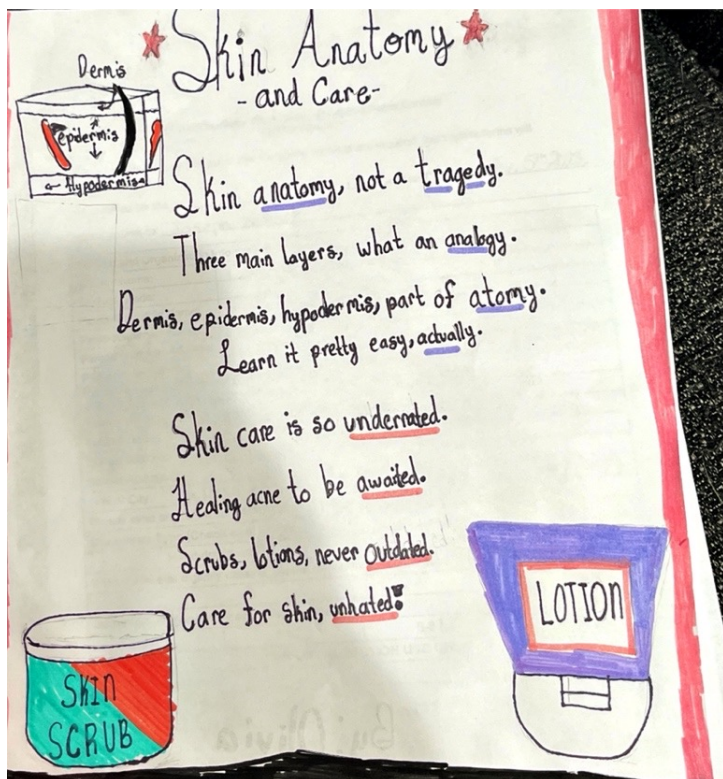
Antibiotics

Jolene Cao

Gr. 11

Smithtown East

St. James, NY



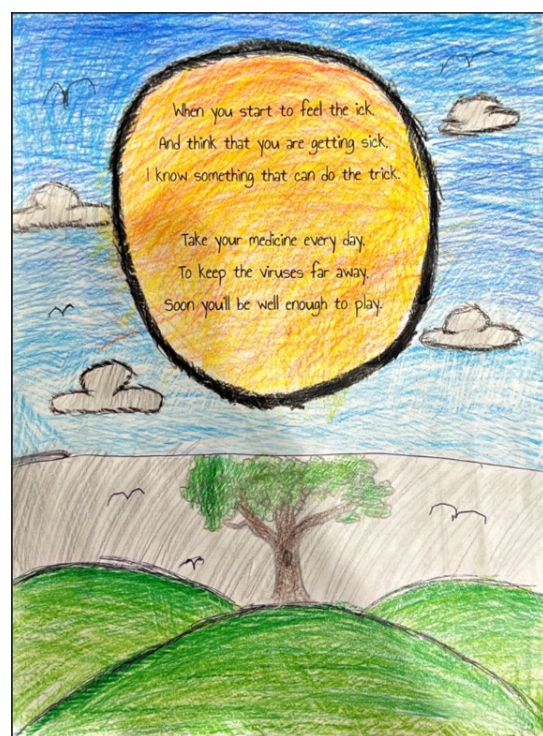
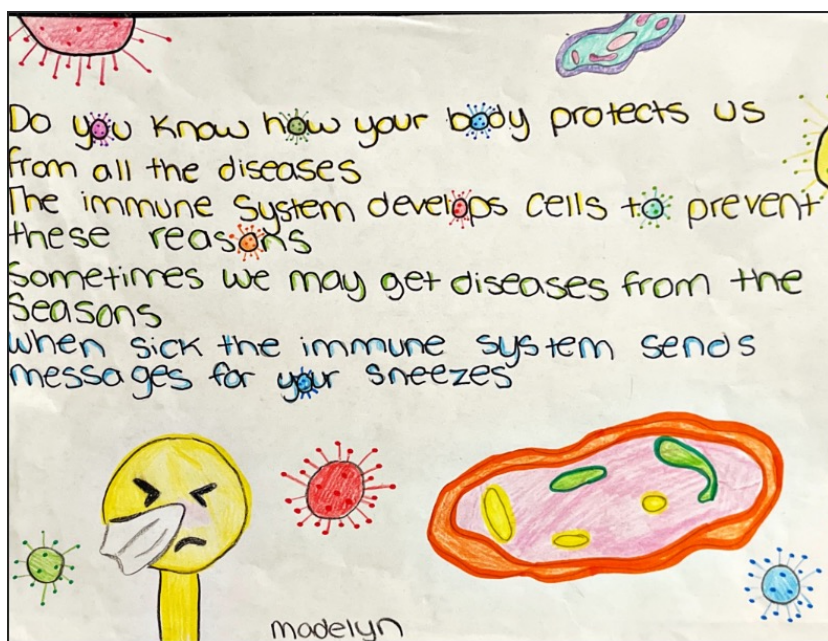
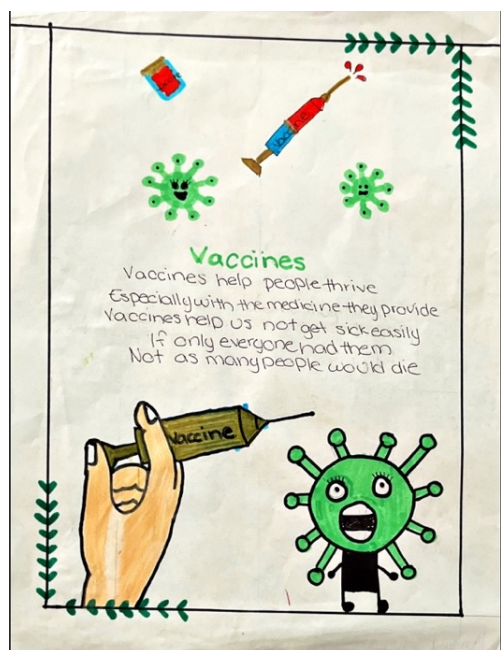
**2023 NATIONAL CHEMISTRY WEEK ILLUSTRATED POEM CONTEST
NEW YORK LOCAL SECTION WINNERS (continued)**

**Middle School
2nd – 4th Place**

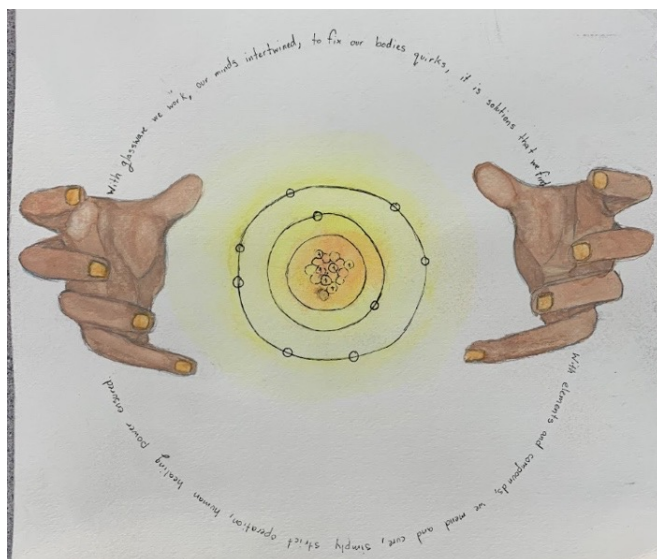
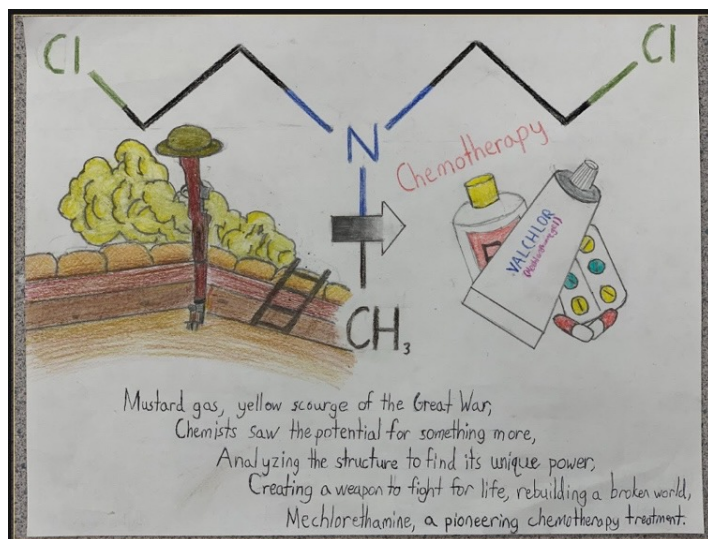
Martina Rivera
St. Luke School
Whitestone, NY

Madelyn Fernadez
St. Luke School
Whitestone, NY

James Ben-Jacob
St. Luke School
Whitestone, NY



**2023 NATIONAL CHEMISTRY WEEK ILLUSTRATED POEM CONTEST
NEW YORK LOCAL SECTION WINNERS (continued)**



**High School
2nd – 5th Place**

Dylan Shen
Smithtown East
St. James, NY

Sophia Gavaris
Smithtown East
St. James, NY

Sanjivani Singh
Smithtown East
St. James, NY

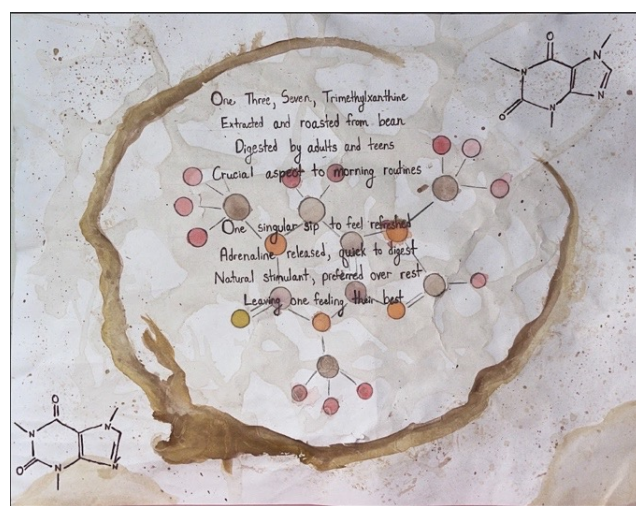
Renee Aquino
General Douglas MacArthur High School
Levittown, NY



Artificial skin, a beacon of hope.
In healing journeys, helping one cope.

Polymers made, patterns spun,
New skin formed, healing has begun.

The realm of skin, where scars do mar,
Chemistry weaves its magic, like a healing star.*



CALL FOR NOMINATIONS

WESTCHESTER CHEMICAL SOCIETY DISTINGUISHED SCIENTIST AWARD 2024 – CALL FOR NOMINATIONS

The Westchester Chemical Society is now accepting nominations for the "[WCS Distinguished Scientist Award 2024](#)". Scientists who live or work in Westchester or the Bronx qualify. The awardee is expected to attend the Awards Dinner (April/May time-frame) and to present aspects of his or her work. Self-nominations are acceptable. Nominations are not carried over from previous years. New and possibly updated nominations should be submitted. Please send a cover letter stating why your nominee should receive the award along with the nominee's resume by **January 15, 2024** to Dr. Peter Corfield at pwrc@earthlink.net.

GRANT OPPORTUNITIES

GLOBAL INNOVATION IMPERATIVES (GII) GRANT

Up to \$25,000 to provide funding for a multi-day forum/conference that contributes to the resolution of global sustainability issues.

DUE DECEMBER 22, 2023

[Learn more](#)

LOCAL SECTION INNOVATIVE PROJECT GRANT

\$3,500 for a Local Section to conceive and implement innovative projects as well as maintain growth.

DUE JANUARY 15, 2024

[Learn more](#)

CORPORATION ASSOCIATES SEED GRANT

Supporting chemical sciences education, public education, and enhanced professionalism in chemistry. Grants up to \$5,000 are awarded.

DUE FEBRUARY 1, 2024

[Learn more](#)



PRESENTS

INTERNATIONAL HIGH SCHOOL STUDENTS RESEARCH SYMPOSIUM

Conducted under the American Chemistry Society's
LSAC/DEIR Grant Funding

SATURDAY | DECEMBER 2

SCALACS invites you to attend/participate in the virtual
International High School Students Research Symposium
Date: **Saturday, December 2, 2023**
Morning Session: **9:00 am to 12:00 noon Pacific Time**
Afternoon Session: **1:00 pm to 4:00 pm Pacific Time**
Topic(s): **Any area relating to STEM subjects**
Mode of Presentations:
Powerpoint via Zoom (15 minutes for each presentation)

Top six (6) presentations will be awarded US\$100 each as
determined by a panel of judges appointed by SCALACS.
Registration is free to all. To register, please visit
www.scalacs.org. **Registration closes on midnight of**
November 27, 2023. For more information, contact
SCALACS office at office@scalacs.org.

EVENT SPONSOR:  **LUMIERE
EDUCATION**
An organization founded by Harvard and Oxford PhDs with
the aim to provide high school students around the world
access to research opportunities with top global scholars.



OPPORTUNITIES

For High School Students & Teachers

Presidential Awards for Excellence in Mathematics and Science Teaching (K-6 Teachers)

[Nominations due January 8, 2024](#)

For Undergraduates

How To Land Your First Job: An Email Guide

[Available now](#)

For Graduate Students / Postdocs

Japan Society for the Promotion of Science Summer Program

[Apply by January 4, 2024](#)

Merck Research Award for Underrepresented Chemists of Color

[Due January 15, 2024](#)

Burroughs Wellcome Fund Postdoctoral Diversity Enrichment Program

[Due January 18, 2024](#)

For Professionals

EPA Green Challenge Awards

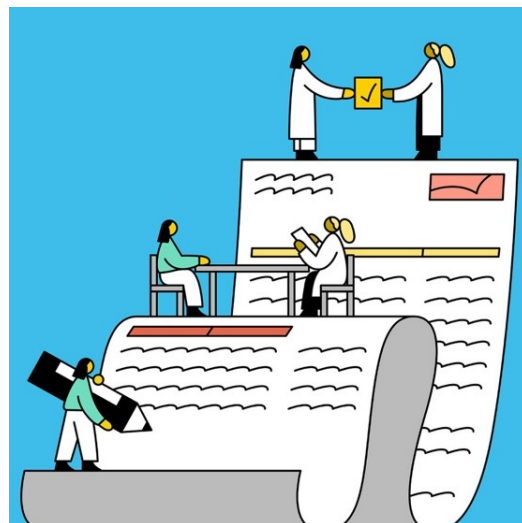
[Due December 8](#)

2YC Community of Practice for 2-Yr College Faculty

[Due December 15](#)

Camille Dreyfus Teacher-Scholar Awards

[Due February 1, 2024](#)



[How To Land Your First Job: An Email Guide](#)



SEMINAR SPEAKERS WANTED

The New York Section wants 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!

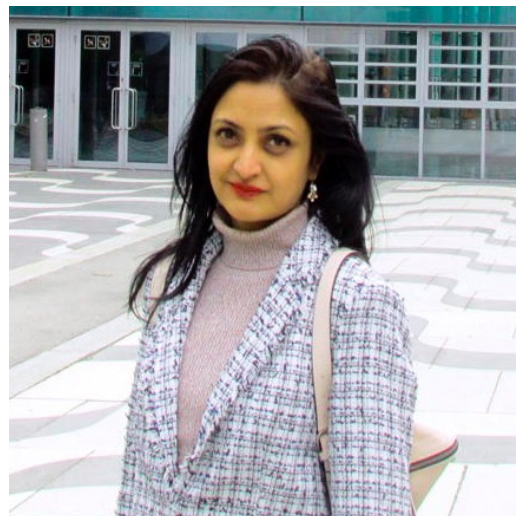
FROM OUR PARTNERS**Chemistry Teachers and Physics Clubs of New York**

The School of Science at Manhattan College and the Chemistry Teachers and Physics Clubs of NY are proud to present a lecture entitled, as follows: Bionanotechnological and Biocomputational Approaches to Developing Tailored Peptide-Based Materials.

Speaker: Prof. Ipsita Banerjee
 Department of Chemistry
 Fordham University

Date: **Friday, December 8, 2023**
 Place: via Zoom
 Time: 8:00 PM

[Email for Zoom login](#)

**Royal Society of Chemistry**

ROYAL SOCIETY OF CHEMISTRY

Lessons in Chemistry:
 In conversation with the author Bonnie Garmus

5 December 2023, 7pm UK time

At the Royal Society of Chemistry, Burlington House, London, and across social

Photo credit: Serena Bolton

Join our colleagues in the Royal Society of Chemistry on **December 5th at 2:00 PM ET** for a conversation with Bonnie Garmus about her debut novel, the NY Times best-seller [Lessons in Chemistry](#) which is now a movie on Apple TV+. Explore the character of Elizabeth Zott's trials and tribulations as a female chemist in the 1960s that is unceremoniously sidelined by male colleagues.

[Register here](#)

2024 Merck Research Award for Underrepresented Chemists of Color

Awardees will receive:

- Merck mentors and opportunities to network with other winners and Merck scientists
- Invitations to career development sessions throughout the year
- Travel and accommodation for the 2024 Award Symposium, hosted at the Merck Rahway, New Jersey site
- The opportunity to present their research at the 2024 Award Symposium

Eligibility

- Underrepresented groups in chemistry, including Black, Latinx, Native American, Alaska Native, South and Southeast Asian, Middle Eastern, Native Hawaiian, and other Pacific Islanders
- Third year graduate students (minimum) or postdocs doing research in chemistry, including but not limited to organic, inorganic, medicinal, analytical, chemical biology, chemical engineering, computational, or physical chemistry at a US-based institution. Open to US and non-US citizens

Application materials sent via email by January 15, 2024

- Research summary (maximum two pages) and CV
- Personal statement describing your eligibility and resiliency as a chemist of color, how this award will impact your career in science, and how you support other underrepresented individuals (one page)
- A faculty member or supervisor's recommendation letter emailed separately to chemistsofcolor@merck.com

Learn more at [merck.com](https://www.merck.com)

To apply, email your application materials to chemistsofcolor@merck.com

JOB BOARD

Starting your career or looking for the next challenge? Review these and other postings at the New York ACS [Job Board](#). Email your job postings to jobs@NewYorkACS.org for inclusion.

Assistant Professor of Biochemistry – Iona College

[Apply here](#)

Adjunct Professor, Instrumental Analysis – Iona College

[Apply here](#)

Lecturer, Chemistry – Barnard College

[Apply here](#)

Pre-Health Programs Advisor - SUNY Old Westbury

[Apply here](#)

Postdoctoral Researcher/Scientist, Protein / Biomaterials Engineer – ProViZiGen

[Apply here](#)

Program Manager, Awards – New York Academy of Sciences

[Apply here](#)

Division of Research Capacity Building Director – National Institutes of Health

[Apply here](#)

QC Chemist III – Amneal

[Apply here](#)

PET Radiochemist – PharmaLogic

[Apply here](#)

Synthetic Chemist, Director – Osmo

[Apply here](#)

Senior Scientist – Merck

[Apply here](#)

Senior Chemist II, Fast innovation Makeup Development – L'Oréal

[Apply here](#)



The graphic features a blue background. On the left is a white line-art representation of an atom with three orbiting electrons. In the center is a yellow heart with a white outline, containing the text "VOLUNTEER OF THE YEAR" in blue, bold, sans-serif font. In the top right corner is the ACS logo, which includes a diamond shape with "A", "C", and "S" inside, and the text "ACS Chemistry for Life® American Chemical Society" to its right. In the bottom right corner, the text "NOMINATIONS OPEN THROUGH DECEMBER 17" is written in large, white, bold, sans-serif font.