THE Indicator

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Professor Neal Deveraj Receives the North Jersey Section's 2019 Leo Hendrik Baekeland Award

See article on page 5.

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THIS MONTH IN CHEMICAL HISTORY

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

I recently acquired another of those nineteenth century books that invariably tempt me when I see them advertised at reasonable prices on-line. The listing was not forthcoming; it was simply "Science Record. 1874". I received commendably promptly a marron cloth bound volume, in good condition, with a splendid gold-embossed picture of what seems to be a Newcomen steam engine (long obsolete by 1874) on the front cover. The nearly 600 closely printed pages were edited by Alfred E. Beach and published in New York by Munn and Company.

Off to Wikipedia to research Mr. Beach who turns out to be a fascinating person. He was born in Massachusetts in 1826, son of a publisher and apparently well-off. He worked for his father but then, with his friend Orson Munn (aha!) he bought a struggling new magazine called "Scientific American (aha! again). That magazine, under the care of Beach and Munn, became successful and continued to be owned by their descendants for several generations. It is published to this day.

Beach is known as an author, a publisher, an inventor, and a patent lawyer. His best- known invention was the first subway system in Manhattan. Inspired by London's new Underground, but trying to avoid the use of smelly coal-fired engines, Beach invented a new tunneling machine, and used pneumatic propulsion for his subway train. After years of legislative wrangling (this was the era of Tammany Hall) he received legislative agreement for a pilot line that ran underground for only 300 feet. The train operated for three years and was supplanted by other investors who reverted to conventional steam-powered trains. Beach also pioneered the use of pneumatic tubes to transport goods and documents in stores and offices, and he invented a typewriter for the blind. Beach and Munn's patent agency was another successful enterprise. After the Civil War Beach founded a school in Savannah for freed slaves.

Now let me return to the subject of this column, "Science Record" for 1874 subtitled "A Compendium of Scientific Progress and Discovery during the past year With Illustrations. The preface makes it clear that "Science Record" is a continuing series that began in 1872 and has been so successfully received by the public that the publishers have reprinted all the earlier volumes. The book is fully indexed and covers chemistry and metallurgy in 83 pages; technology in 110 pages; electricity, light, heat, and sound in 60 pages; mechanics and engineering in 90 pages; botany and horticulture in 20 pages; agriculture and rural economy in 25 pages; domestic economy in 15 pages; materia medica, therapeutics, and hygiene in 50 pages; pisciculture in 40 pages; natural history and zoology in 40 pages; geography in 20 pages; geology and mineralogy in 20 pages; astronomy in 15 pages; miscellaneous in 15 pages; and, finally, 5 pages covering two biographies. This admirable volume clearly has something for everyone.

I will start with the section on chemistry and metallurgy that opens appropriately on a full-page portrait of Baron Justus von Liebig, one of the most distinguished and versatile of nineteenth century chemists. If you are unaware of Liebig's achievements I refer you (WARNING: ADVERTISEMENT) to "Creations of Fire" by Cathy Cobb and Harold Goldwhite; or "A Chemical Chrestomathy" by Harold Goldwhite. However the section begins with an essay by Henry Armstrong, a well-known English chemist, on "The Artificial Formation of Organic Substances" Chemistry has come a long way from the vitalistic doctrines that were common enough in the early 19th. Century, and in 1874 chemists can synthesize many naturally occurring organic compounds. Armstrong starts with simple compounds derived from alcohols including aldehydes and fatty acids "identical with those which enter into the composition of the natural fats".

I will do some "daisy-picking" among the hundreds of interesting articles, each summarized in a short paragraph, that make up this section. Eilhardt Mitscherlich, famed in crystallography and chemistry, has devised a direct method to determine quantitatively not anly carbon and hydrogen, but also halogens, phosphorus, and – probably- nitrogen in organic compounds.

The usual reagent employed to destroy chlorine used as a bleach on fabrics and paper is sodium hyposulfite, that has the unfortunate side-effect of leaving some elemental sulfur in the substrate. This slowly oxidizes to sulfurous and sulfuric acids that weaken and even eventually destroy the fabric or paper. Sulfite of soda, that does not lead to sulfur deposits in the bleached objects, is a superior antichlor.

Under the title "New Explosive Compound" Messrs. Noirbin and Ohlson of Stockholm have discovered that if simple ammonium nitrate, a compound not usually considered an explosive, is ignited by another explosive primer, it becomes a powerful explosive itself. The abstract gives the recipe; I will not report it here, but it is worth recalling that the bomb in the Oklahoma City explosion was largely the agricultural chemical ammonium nitrate.

More to follow from this fascinating glimpse at science 140 years ago.

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THE Indicator

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Thursday, November 7, 2019
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NORTH JERSEY SECTION

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Monday, September 23, 2019
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also

Saturday, October 19, 2019
Chem Expo
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Deadline for items to be included in the October 2019 issue of *The Indicator* is

August 28, 2019

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Neal Deveraj Is 2019 Leo Hendrik Baekeland Awardee

Neal Devaraj, Professor of Chemistry and Biochemistry at University of California, San Diego, is the recipient of the 2019 Leo Hendrik Baekeland Award, presented by the ACS North Jersey Section. His research accomplishments are in the areas of bioconjugation, chemical biology, and bottom-up synthetic biology.

Born in Torrance, California, he attended MIT for his undergraduate studies and received a dual bachelor's degree in chemistry and biology in 2002 where he carried out research in the lab of Professor Moungi Bawendi. In 2007, he received his PhD in chemistry at Stanford University under the direction of Professors James Collman and Christopher Chidsey. This was followed by a post-doctoral fellowship in the lab of Professor Ralph Weissleder at Mass. General Hospital/Harvard Medical School.

A major focus of his research involves understanding how non-living matter such as simple, organic molecules can assemble to form life. Areas in which he has made significant advances includes: the synthesis of artificial cells and membranes, the development of tools for the imaging and manipulation of RNA, and in the development and popularization of tetrazine bioconjugation reactions.

He is the recipient of numerous prior awards, among them: a Guggenheim Fellowship in the Natural Sciences (2019), an Eli Lilly Award in Biological Chemistry (2019), a Blavatnik National Laureate in Chemistry (2018), an ACS Award in Pure Chemistry (2017), a Camille Dreyfus Teacher-Scholar Award (2016) and an NSF CAREER Award (2013).

The North Jersey Section established the award in 1944 to commemorate thetechnical and industrial achievements of Leo Hendrik Baekeland, who served as ACS president in 1924, and to encourage younger chemists to emulate his example. The is given biannually in recognition of accomplishments in pure or applied chemistry to an American chemist under the age of forty as characterized by their initiative, creativeness, leadership, and perseverance.

A symposium will be held on **November 15, 2019** to celebrate his accomplishments and the receipt of the Award. Other presentations will be given by Dinshaw Patel, Sid Hecht and James Collman.

North Jersey Meetings

http://www.njacs.org

NORTH JERSEY EXECUTIVE COMMITTEE MEETING AND SEED STUDENT SYMPOSIUM

Section officers, councilors, committee chairs, topical group chairs, and section event organizers meet regularly at the Executive Committee Meeting to discuss topics of importance to running the section and representing the membership. All ACS members are welcome to attend this meeting and to become more involved in section activities. In addition high school students who participated in this summer's SEED research program present their data to judges from Industry and Academia.

Date: **Monday, September 23, 2019**
Times: Project SEED Poster Session
3:00 PM - 10:00 PM
Place: Seton Hall University
University Center, Main Lounge
Times: Dinner follows Poster Session
Executive Meeting 6:30 - 9:30 PM
Place: Seton Hall University
Room SC104
400 South Orange Avenue
South Orange, NJ
Cost: Dinner cost of $35 is payable at the door, no charge for judges of posters and 2019 ACS award winner.

For reservations please call NJACS secretary Bettyann Howson (973) 822-2575 or email **chemphun@gmail.com** or register online at **http://www.njacs.org** prior to **Wednesday, September 18, 2019.**

NORTH JERSEY ACS CANDIDATES

North Jersey Section ACS election will take place **September 9 - October 21, 2019**. Balloting will be electronic and ballots will be sent to all current North Jersey ACS members by **https://vote-now.com**. The following are candidates for 2020 chair-elect and councilors for the North Jersey Section:

Chair-elect:
Mirlinda Biba
Jasmine Lu

Treasurer:
Jacqueline Erickson

Councilors:
Bettyann Howson
Sandra Keyser
Les McQuire
Bill Suits

NoJ DRUG METABOLISM DISCUSSION GROUP

Date: **Thursday, September 12, 2019**

For details, see flyer on page 7.

NoJ CHROMATOGRAPHY GROUP MEETING

Date: **Wednesday, September 25, 2019**

For details, see flyer on page 8.

NoJ CELEBRATES CHEM EXPO 2019 DURING NATIONAL CHEMISTRY WEEK

Date: **Saturday, October 19, 2019**

For details, see flyer on pages 9-13, 41.

NORTH JERSEY DRUG METABOLISM DISCUSSION GROUP 2019 FALL SYMPOSIUM AND VENDOR EXHIBITION

"Molecular Targeting Approaches for Drug Delivery and Therapeutics"

PROGRAM

8:00 AM	Registration / Continental Breakfast / Vendor Exhibit	
9:00AM	Introductory Remarks	Imad Hanna, Chair, NoJ DMDG
9:15 AM	Ligand-targeted Drug Delivery Approaches	Philip Low, PhD, Distinguished Professor of Chemistry, Purdue University College of Pharmacy
10:00 AM	Bacterial-derived Antitumor Drug Delivery Platform	Claudia Gravekamp PhD, Associate Professor, Department of Microbiology and Immunology Albert Einstein College of Medicine
10:45 AM	Vendor Exhibit & Coffee Break	
11:15 AM	Novel Use of Quantitative Imaging Approaches and Its Impact on Safety De-risking, Compound Progression, and Establishing PK/PD Relationships	Marissa Vavrek, Principal Scientist-Pharmacokinetics, Pharmacodynamics, and Drug Metabolism, Merck & Co., Inc.
12:00 PM	Lunch & Vendor Exhibit	
1:15 PM	Oral Delivery of Colon-targeting Macromolecules	Sathy Balu-Iyer, PhD, Professor, Department of Pharmaceutical Sciences, University at Buffalo School of Pharmacy
2:00 PM	Bioinformatics Approaches to Investigate Mechanisms of Pulmonary Toxicity	Cody Smith, Post-doctoral Research Fellow, Environmental and Occupational Health Sciences Institute, Rutgers the State University of NJ, New Brunswick, NJ
2:45 PM	Vendor Exhibit & Coffee Break	
3:00 PM	Drug Transporter-mediated Tissue Targeting Challenges and Strategies	Dallas Bednarczyk – Investigator, Pharmacokinetic Sciences, Novartis Institutes for Biomedical Research, Cambridge, MA.
3:45 PM	Program closure	

Date: Thursday, September 12, 2019
Times: 8:00 AM – 4:00 PM
Place: The Palace at Somerset Park
333 Davidson Avenue
Somerset, New Jersey
Cost: Pre-registration fee is **$125 (pre-register by September 01, 2019)**.
Registration fee at the door is **$150** (Checks only)
Registration fee for students and postdocs is **$10** and **$50** for faculty
Registration is **free** for unemployed

- Please plan to pre-register as a group, as coordinated by a member of the NJACS DMDG steering committee from your organization (see list).
- If you have no DMDG member at your company, please contact Imad Hanna (**imad.hanna@novartis.com**) for registration.
- Payments by personal or company checks. Sorry, credit cards are not accepted.
- Checks should be made payable to: NJ Drug Metabolism Discussion Group.
- Please also visit our website: **http://www.njacs.org/topical-groups/drug-metabolism**

Exhibitors:
- Please contact Naiyu Zheng (**naiyu.zheng@bms.com**) for information concerning exhibits.

North Jersey Chromatography Group NJCG

North Jersey Chromatography Group (NJCG) Symposium 2019

Method Lifecycle Management, Symposium, Exhibit, and More!

Register Today!

September 25th, 2019 (Wed.)

in Double Tree Hotel, 200 Atrium Dr., Somerset, New Jersey

Time	Moderator / Speaker	Title
12:30-1:00pm		Registration and refreshments
1:00-1:05pm	Dr. Ying Hu, Chair, Ascendia	Welcome Remarks
1:05-1:15pm	Dr. Amjad Ali, NJ-ACS Chair, Merck	NJ-ACS
1:15-1:45pm	Dr Rosario LoBrutto, Sandoz (Keynote)	Advancing Analytical Quality by Design
1:45-2:15pm	Dr Peter Tattersall, BMS	Programs for evaluating analytical risk on process chemistry: project analytical control strategy and late stage method development
2:15-2:45pm	Saji Thomas, Par	Impact of method transfers on lifecycle management (LCM) of analytical methods.
2:45-3:30pm	Dr. Robert Menger, Past Chair, Celgene	Break (refreshments will be served) Vendor Show, Posters
3:30-4:00pm	Dr. Jinjian Zheng, Chair-Elect, Merck	Technology and Software Considerations to Enable Analytical Procedure Lifecycle Management
4:00-4:30pm	Margaret Maziarz, Waters	Continued Performance Verification of Analytical Procedures Using Control Charts
4:30-5:00pm	All speakers	Panel Discussion
5:00-5:10pm	Dr. Ying Hu, Ascendia Dr. Jinjian Zheng, Chair-Elect, Merck	Raffle Closing Remarks
5:10-6:30pm	Cocktail Hour	Sponsored by Waters Corporation

ChemExpo 2019

at Liberty Science Center, Jersey City, New Jersey

on Saturday, October 19th, 2019

10:30 a.m. – 3 p.m.

Chemistry Teams
from local colleges, high schools, and middle schools
are invited to join us
for a fun-filled day of hands-on science activities
based on the topic

Participants/Contestants, volunteers, sponsors
For registration, please visit
https://tinyurl.com/NJACSncw
or
email : *mitachaki@gmail.com or monicasekharan@gmail.com*

This family-friendly event for all ages
is included with general admission to the ***Liberty Science Center***

Calls for Sponsors

ChemExpo 2019

At Liberty Science Center, Jersey City, New Jersey
10:30 am – 3 pm on Saturday, October 19, 2019

Call for Sponsorship

To celebrate National Chemistry Week,
the North Jersey Section of ACS will be holding its 25th ***ChemExpo***.

The theme for this year is

We are looking forward to financial support to help cover many of the expenses associated with the Section's NCW activities.

Please help us make a difference!

A donation of $500.00 indicates Gold Sponsorship, a $250.00 gift indicates Silver Sponsorship and a $100.00 gift indicates a Bronze Sponsorship.
We would appreciate it if you would forward this information to the appropriate representatives within your company.

Checks should be made out to: "**NJACS**" (The North Jersey Section of American Chemical Society) with a memo of "NCW".

Sent to: **Jacqueline Erickson**
33 Ronald Road
Lake Hiawatha, NJ, 07034-1121.

The Section is most appreciative of your efforts.
Thanks a lot for your help.
ChemExpo Committee

Please email filled out sponsorship form to: Mita Chaki at mitachaki@gmail.com

Calls for Sponsors

ChemExpo 2019

At Liberty Science Center, Jersey City, New Jersey
10:30 am – 3 pm on Saturday, October 19, 2019

Sponsorship Form

Name of the Company:

My company would like to support these efforts at the _____ level.
(indicate gold, silver, or bronze)

An acknowledgement letter for this contribution should be sent to (Name of the company personnel) :

Email:

Full address:

Please email filled out sponsorship form to: Mita Chaki at mitachaki@gmail.com

Calls for High School Students

ChemExpo 2019

At Liberty Science Center, Jersey City, New Jersey
10:30 am – 3 pm on Saturday, October 19, 2019
Call for High School Students

High School Chemistry Clubs of New Jersey are invited to participate at the exciting, fun-filled celebration of the National Chemistry Week – The 25th ***ChemExpo.***

The high school groups are invited to take part in a competition. The high school group who presents the most exciting demonstration and/or hands-on activity pertaining to the theme, "Marvelous Metals", and provides a clear explanation for the audience will be awarded a certificate and a cash prize. Depending on the number of schools entering and the quality of the presentations, we may add additional prizes.

The judges will use the Evaluation Criteria listed in the document named "***Judging Criteria***". You may use this document to design your activity. For more information, visit https://www.njacs.org/national-chemistry-week. You may present more than one activity however we will judge you on only one activity of your choice.

Please join us as a presenter/contestant to make it an exciting, educational, and fun-filled event. Please register at http://tiny.cc/NJACSchemexpo2019 by October 1, 2019.

Sincerely,

***ChemExpo* 2019 Committee**

Calls for College Students

ChemExpo 2019

At Liberty Science Center, Jersey City, New Jersey
10:30 am – 3 pm on Saturday, October 19, 2019
Call for College Students

ACS Student Chapters and Chemistry Clubs of colleges and universities of New Jersey are invited to participate at the exciting, fun-filled celebration of the National Chemistry Week – The 25th ***ChemExpo.***

Like the past years, we will run a contest and ***Sister Marian Jose Smith*** Awards will be granted to the top two teams for presenting the most exciting demonstration and/or hands-on activity pertaining to the theme, "Marvelous Metals", and providing a clear explanation for the audience. The judges will use the Evaluation Criteria listed in the document named "***Judging Criteria***". You may use this document to design your activity for the contest. For more information, visit https://www.njacs.org/national-chemistry-week . You may design more than one activity however we will judge you on only one activity of your choice.

To minimize duplication of the presentations, please email us the list of activities that you/your team would like to present preferably by October 10th, 2019. Individuals contacting us first with their idea(s) will be given priority. Please be thorough in your presentation and explanations so that the visitors and/or students are able to redo these experiments at home and/or at school. Please register at http://tiny.cc/NJACSchemexpo2019 by October 1, 2019.

Sincerely,

***ChemExpo* 2019 Committee**

2019 NORTH JERSEY SECTION ACS AWARDS DINNER

The North Jersey Section of ACS held its Award Dinner on May 14th at the Mansion, Fairleigh Dickinson University, Florham Park. Twenty-six members of NJACS, volunteers, and scholars were recognized for their exemplary service and scholarship.

Over 75 guests joined in the celebration.

Charles Shalotsky, 60 Year Member, receives his certificate from Amjad Ali, NJACS Chair.

Our 50, 60 and 70 Year Members were recognized for their outstanding contributions to the section. From left to right: Robert Steltencamp, Michael Miller, Alexander MacDonald, Martha Greenblatt, Alan Rosen, Michel Bitritto, Greg Dobbs, William Sullivan, Sheldon Kavesh , Larry Kaye, Fred Dammont, Neal Levin, Edward Aig, Michael Blumenthal.

Amjad Ali presents the Lifetime Achievement Award to Chris Welch for his conspicuous achievements in chemistry (Photo courtesy of Tom Krone) Chris was the guest speaker and spoke about his career pathway and the importance of collaboration and mentorship.

Miriam Gulotta, 2018 NJACS Chair, presents Monica Sekharan with the ACS Outreach Volunteer of the Year Award. Monica gave a short talk on the importance and joys of volunteerism.

(All photos courtesy of Tom Krone)

Chemistry Olympiad scholars and their teachers were recognized. From left to right: front row: Alan Ji, Carmel Meyer, Ian Gurland, Xingwan Zhu, Derrick Yu, Margaret Mitchell; back row: Katie Kim, Lou Casagrande, Jason Sullivan, Nicholas Murphy, Meredith Morgan, Bettyann Howson.

Kayla Williams received the Freddie and Ada Brown Award for her scholarship and interest in science. The award was presented by Jeannette Brown, daughter of Freddie and Ada Brown and a Councilor of the North Jersey Section.

Five individuals from the local community were honored with ACS Salutes to Excellence Awards. Cecilia Marzabadi, NJACS Chair Elect presented the awards. From left to right, Sandra Kayser, Qi Gao, Michelle Merckx, Cecilia Marzabadi, Catarina Lopes, and Mary Harner. Sandra was recognized for her science outreach to the local community, Qi and Mary were recognized for their leadership in the NMR Spectroscopy Group, and Michelle and Catarina were recognized for encouraging their students to do scientific research.

Sue Fahrenholtz, Chair of NJACS Project SEED, Judith Barrios, Project SEED Mentor, and Cecilia Marzabadi. Judith was presented with a Pro Bono Award for the guidance and encouragement she provides to her students.

Tom Krone received a Pro Bono Award for his dedicated service to the section as its volunteer photographer. Cecilia Marzabadi presented the award.

(Photo courtesy of Diane Krone)

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2019 NORTH JERSEY SECTION ACS AWARDS DINNER

(continued from page 15)

Monica Sekharan, Volunteer of the Year, enjoys the evening with her family, Corey and Colin Steward.

Bettyann Howson was recognized as a 2019 ACS Fellow

NEW JERSEY CHEMISTRY OLYMPICS

(All photos courtesy of NJCO photographer, Mr. Tom Krone)

On May 17, the New Jersey Institute of Technology (NJIT) College of Liberal Arts and Sciences (CSLA) hosted the 34th Annual New Jersey Chemistry Olympics (NJCO). Like the 33 that preceded it, it was a wonderful success thanks to the faculty, staff, and volunteer students of NJIT, members of the North Jersey ACS section (NJACS), and the students and faculty coaches from the 16 high schools that attended. The event is funded in large part by the College of Liberal Arts and Sciences (CSLA) at NJIT and the NJACS but it would not have happened without generous support from Merck, Exemplify BioPharma, and Ashland LLC.

The top team and winner of the Platinum Crucible was Primoris Academy (Team A). Watchung Hills Regional High School took both second and third place. In an unusual turn of events, their B team beat their A team for the silver medal.

2019 NJCO Wining Team – Primoris Academy (Team A) with coach Ms. Katie Kim and NJIT Department of Chemistry and Environmental Science Chair, Dr. Linda Cummings.

This year the theme was *Energy*. Many events were theme oriented. Events involved protection from the sun, thermal insulation, combustion and building a fuel cell.

For the *Chemistry Research Event*, Dr. Alisa Krishtal (NJIT) and Dr. Sandra Keyser (Drew) judged research papers and presentations on the "The Dos and Don'ts of Sunscreen". Students were tasked to make their own sunscreen and to test it out against other products. In addition to being judged on the quality of their written reports and oral presentations, students had to make a YouTube video showing the production of their sun screen and had to bring a sample in for the judges. Alisa and Sandra have not disclosed whether they have obtained industry contracts for a commercial product based on the results but…. South Brunswick (Team A) took home the gold and their Team B tied with Watchung Hills Regional High School (Team B) so both received silver medals.

Students present their sunscreen results to coaches Drs. Alisa Krishtal and Sandra Keyser .

The Environmental Research Event tasked students with finding the best material for heat insulation that was also recyclable. Dr. Alexei Khalizov and Dr. Joe Bozzelli, both from the Department of Chemistry and Environmental Science at NJIT judged the event. Students needed to understand what makes a material a good heat insulator and test both new and recycled versions. John Paul Stevens High School (JPS) took home the gold while South Brunswick Team B received its second silver medal and Montclair High School took home the bronze.

South Brunswick Team B wins silver in Environmental Science Research; coach Michael Poot looks on.

Judges Drs. Alexei Khalizov and Joe Bozzelli evaluate student Environmental Science Research projects.

Students interested in Chemical Engineering got an opportunity to build a working fuel cell. Participants in the Chemical Engineering Research Event were required to demonstrate that their fuel cell could power another device both on event day as well as in a YouTube video that was submitted to the judges ahead of time. The fuel cells had to be built from scratch – no kits allowed! The three judges, Dr. Reginald Tomkins, Dr. Duane Butherus and Dr. Mirko Schoenitz are all current or retired members of the NJIT faculty/staff. This time it was the A Team from JP Stevens that took home the gold. Watchung Hills Regional High School Team B received its second silver medal. The bronze went to Dwight Englewood High School.

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NEW JERSEY CHEMISTRY OLYMPICS

(continued from page 17)

Fuel Cell judges Drs. Mirko Schoenitz, Duane Butherus, Reggie Tomkins

Waiting to demo their fuel cell

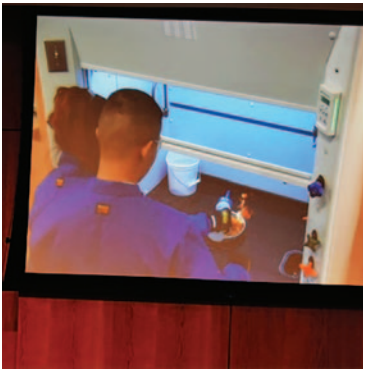
This year the Website Design Event was on Microplastics in the Environment. Websites had to be designed to educate viewers on the history, processes, durability and of course accurate structures/reactions involved in the production of plastics. But content is not enough, the websites have to be attractive as well as easy to use! To make sure all aspects of the project were covered, Dr. Alan Cooper (consulting chemist) and Mr. Jon Buchspies (NJIT) both of who have chemistry expertise teamed up with web expert Jeremy Reich (CSLA) to judge the event. South Brunswick Team A took home its second gold medal for the event. Whippany Park High School (silver) and Rutgers Preparatory High School (bronze) each received their first 2019 NJCO medals.

Judges (L-R) Jeremy Reich, Alan Cooper, Jon Buchspies

Rutgers Prep bronze medalists with coaches Joan Zanfardino and Allen Furtek.

This year's Demonstration Show was on combustion. Along with chemistry, it was a lesson in the safety measures required for performing potentially dangerous experiments. Both personnel from NJIT's Environmental Health & Safety (EHS) as well as fire personnel from Public Works were on hand. Students were provided with flame-retardant lab coats and gloves. Special safety shields were available for experiments where goggles were not sufficient. Seasoned judge, Carrie Jacobus (River Dell HS) and former Olympian and current Harvard PhD student Jason Anesini made sure everyone behaved in a safe manner. In addition to the lesson in safe science, the event showcased some wonderful new technology at NJIT. NJIT's newly renovated lecture hall has a high tech hood equipped with a camera so the audience can see everything being done (see photos). For the NJCO, it made judging the event much easier. For NJIT faculty and students, it gives us the potential to perform demos for students in class that even students sitting in the back can enjoy. Watchung Hills swept the event with Team A taking the gold and Team B the silver. Rutgers Prep. received its second bronze medal.

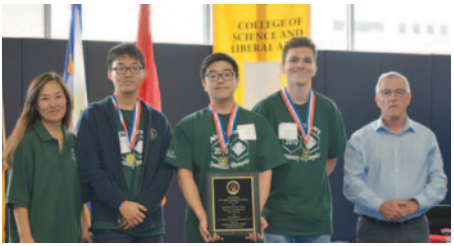
Safety personnel Noelle Screen-Reddick and colleague (left), IT tech (in front of the computer), student scientists (in lab coats), and judge Jason Anesini (seated).



View from above: what is going on in the hood is shown on a large screen above it thanks to cameras pointing into the hood.

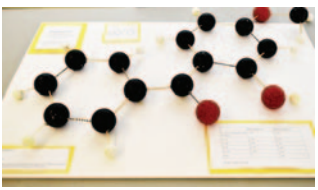
Every year students demonstrate their brain-power against the computer in the Chemical Nomenclature Event. Judges Dr. Mustansar Hussain (NJIT) and Dr. Ara Kahyaoglu (Bergen Community College) set up and ran the program as well as tallied the scores. This year, Primoris Academy Team A outwitted the rest and took the gold (their first event medal), Hunterdon Central Regional High School brought home silver, and the Princeton International School of Mathematics and Science (PRISMS) won bronze.

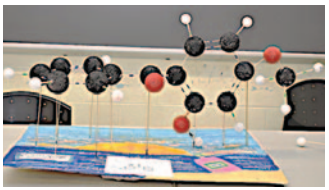
Students take on the Nomenclature Test while judge Mustansar Hussain looks on.



Nomenclature stars from Primoris Academy (Team A) with their coach Katie Kim and judge Ara Kahyaoglu.

This year's *Information Search Event* asked students to research and make accurate models of the chemicals that protect us from the sun; UVA and UVB Blockers. Watchung Hills High designed the best sun blockers coming in both 1st (Team B) and 3rd (Team A) in the competition. JP Stevens (Team A) took home the silver medal and Pascack Hills High School tied with Watchung Hills (Team A) for 3rd place and took home a bronze as well. The NJCO was very fortunate to have Dr. Yong-Ick Kim (NJIT) and Ms. Mihaela Cohanoschi (NJIT) back again this year to judge the event and to help new judge, Ms. Joanne Dera, our reference librarian.





(continued on page 20)

NEW JERSEY CHEMISTRY OLYMPICS

(continued from page 19)

Gold medalists from Watchung Hills Regional High School (Team B) with coach Amanda Prybella

Lab events – as usual, there were 3 lab events in this year's New Jersey Chemistry Olympics. The Analytical Laboratory Event challenged students to determine the thickness of copper on a penny. Sadly, a handful of pennies were sacrificed in the name of science. After dissolving the pennies in nitric acid, students used UV-spectrometers to determine the concentration of copper ions by comparing the absorbance of diluted solutions against a standard curve they had to make themselves. Everything had to be done on site giving new meaning to the expression "time is money". Primoris Academy (Team A) captured their second gold medal. Pascack Valley High School got the silver; their first medal of the competition. The bronze medal was also the first medal for the Marine Academy of Technology and Environmental Science (MATES) (Team A).

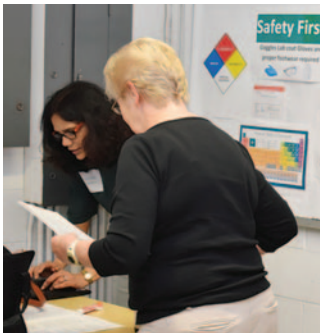
Judges Bill Suits (front) and Mike Bonchonsky (back) examine students' results.

Graduate student Na Mao (center) shows students how to use a UV-vis spectrometer.

The *Instrumentation Laboratory Event* required students to determine both the molar mass and the dissociation constant of a weak acid given to them at the start of the event. Not only was time a factor, but they were only given 1.0g of acid – no seconds allowed! NJIT master lab instructor, Dr. Pin Gu showed new judge Chunmeng Lu the ropes while keeping the students on task. The NJCO would also like to thank Pin for all her invaluable help setting up all the labs and demos for the event. Tenafly received its first medal - the gold! JP Stevens (Team A) took the silver, and Primoris Academy (Team A) the bronze.

Tenafly Gold medalists with Grace Woleslagle who subbed in for coach Anat Firnberg who could ot be there.

The 10th event, the *Microscale Laboratory Event* challenged students to determine the activation energy of the iodine clock reaction using microscale techniques – no buretes allowed. Set up, 3 trails, clean up, and the calculation had to be completed in 75 minutes. Expert long time judges Dr. Bhavani Balasubramanian (NJIT), and Ms. Diane Krone (NJACS) evaluated experimental design, technique, and of course, the team's calculations. Hunterdon Central Regional High School took home its first gold of the day. Primoris Academy (Team A) took the silver, and South Brunswick High School (Team A) the bronze.



Judges Bhavani Balasubramanian and Diane Krone checking calculations.

Determining the activation energy for the iodine clock reaction using microscale techniques.

(continued on page 22)

NEW JERSEY CHEMISTRY OLYMPICS

(continued from page 21)

Hunterdon Central takes gold! Coach Leon Copeland and judge Diane Krone with the team.

After the morning of competition, everyone broke for lunch. Dr. Kevin Campos spoke to students about taking their skills to the pharmaceutical industry and Mr. David Fisher introduced them to forensic science. NJIT is now the only school in the region offering an undergraduate degree in forensic science. Stay tuned for a forensics event in the 2020 Olympics.

About 280 students on 23 teams from 16 high schools participated in the 34 th New Jersey Chemistry Olympics. The students worked very hard and showed themselves to be first rate competitors as well as budding scientists. Everyone was impressed.

The best teams always have dedicated coaches who give their students largely personal time, their own passion for science, and their knowledge and skills. I've been involved with the NJCO for many years and am always amazed by the dedication and passion of these high school teachers. Teachers scout out potential competitors in the Fall, form teams and chose events when they are announced (December 1st this year), and then work tirelessly with students from January until event day in May doing research, getting protocols approved, obtaining supplies, and perfecting techniques and presentations. It's a ton of work and sadly many school districts don't see value in having a chemistry team so most teachers receive little to no financial compensation.

Dr. Kevin Belfield, Dean of CSLA opened the award presentations.

Dr. Kevin Campos, Merck talked about life in science.

Mr. David Fisher introduced the new forensics program at NJIT which he directs.

NJIT provides everything the students need on event day plus everything needed to make sure everyone is safe on our campus. This is the first year NJIT's EHS provided personnel on event day. They had such a good time they plan on returning next year. Support on event day is provided by NJIT's professional staff, graduate students and undergraduates who come back to campus to help out.

NJIT Student Help

Judges are almost entirely members of NJIT's faculty and staff, members of the North Jersey Section of the ACS (NJACS), or both. For the second year we were privileged to have former NJCO competitors judge. Jason Anesini took time off from his doctoral studies at Harvard to join his former chemistry teacher, Ms. Carrie Jacobus (an NJCO director) in judging the Demonstration Event. Last year Jason told competitors how much his experience as an NJCO competitor helped him in college. We are always looking for help so please check out our website (**http://njchemistryolympics.com/welcome/**) and reach out to us (**njchemistryolympics@njit.edu**) if you are interested.

CSLA Dean Dr. Kevin Belfield works tirelessly to get us funding during the year. Our thanks to him and our corporate sponsors: Merck, Exemplify Biopharma, and Ashland LLC. The NJACS as well as the College of Liberal Arts and Sciences at NJIT also provide financial support.

The last group are the behind-the-scenes people who make this all happen. Our NJCO directors: Dr. Linda Cummings (interim Department Chair on loan from Mathematics who supported all aspects of the NJCO), Dr. Kathleen Gilbert (Administrator Coordinator and our webmaster among many other things), Mrs. Carrie Jacobus (River Dale HS, retired NJCO coach, and event MC) who kept us all sane, and yours truly Dr. Miriam Gulotta (NJIT faculty, NJACS immediate past chair) who brought it all together. We also had support from Ms. Genti Price who provided help and advice, takes our minutes, makes up the certificates and a long list of other things. A special thanks to Ms. Sylvana Brito-Rodriguez who has moved on from our Department but can still be relied on to help out when needed – her hard work running the NJCO over the past few years served us well during our transition. And Lastly, our Event Steering Committee that designs all the events and makes sure they can be done by high school students: Dr. Bhavani Balasubramanian, Dr. Joseph Bozzelli, Dr. Alisa Krishtal, Dr. Alexei Khalizov, Dr. Reginald Tomkins (NJIT faculty current or retired); Ms. Joanne Dera (science reference librarian); Ms. Christina Roros (Whippany Park HS, our intrepid HS teacher representative), Ms. Diane Krone (NJACS teacher affiliates), and all of the volunteers who helped make the 2019 New Jersey Chemistry Olympics a success!

The NJCO looks forward to our 35th event in May 2020. We look forward to seeing a lot of familiar faces and some new ones, too.

2019 NORTH JERSEY CHEMAGINATION CONTEST

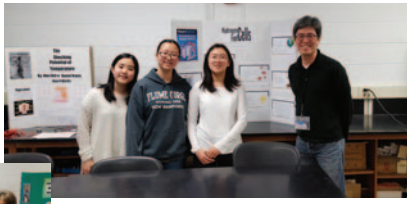
The 2019 North Jersey Section Chemagination Contest was held at Passaic Valley High School in Little Falls on March 27th. Six teams of students from Bergen County Academies and Passaic Valley High School participated. For this event, high school students are asked to imagine that they are living 25 years in the future and have been invited to write an article for ChemMatters, a magazine for high school students that focuses on the role of chemistry in everyday life. The subject of the article is: "Describe a recent breakthrough or innovation in chemistry (and/or its applications) that has improved the quality of people's lives today. In addition to the article, students were asked to design a cover for the magazine. The article was written as if the students are living in the year 2044, looking back at innovations that have occurred since 2019. The judges, Ms. Debra Sweet and Ms. Abbie Young, interviewed each team and provided feedback to prepare the teams for participation in the MARM competition, which was held at the University of Maryland in Baltimore on June 1st.

Students competed in three categories – Alternate Energy, the Environment, and Medicine. Topics included the Shocking Potential of Energy, by Alex Ack and Daniel Kania; The Impact of Hydrogen Fuel Cell Advancement on Current Life Quality, by Lynn Jegal, Miranda Meng, and Jiwon Park; Saving Earth: One Rubber Bag at a Time, by Elizabeth Dubov and Betul Koc; Electric Cars: Making Strides for Our Planet, by Mia Bastile and Lauren Torres; Bridging the Gap: Combatting Retinal Detachment, by Raima Islam and Betul Duzgun; and, Nanites and the Blood Stream, by Cameron Hyde and Lauren Russo.

Each team presented outstanding reports and creative magazine covers. Lynn Jegal, Miranda Meng, Jiwon Park, Elizabeth Dubov, Betul Koc, Raima Islam and Betul Duzgun earned first place in their categories and advanced to the MARM Event where Raima Islam and Betul Duzgun were awarded First Place in the Medicine category for their project on Combatting Retinal Detachment.

Students from Passaic Valley High School, from left to right: Alex Ack, Betul Duzgun, Mia Bastile, Betul Koc, Lauren Russo, Raima Islam, and Liz Dubov

(Photo courtesy of Susanne Iobst)

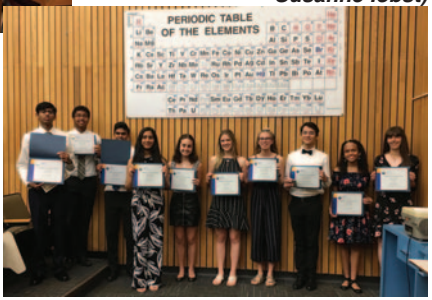


Bergen County Academies, from left to right, students Lynn Jegal, Jiwon Park and Miranda Meng with coach, Dr. Doug Kim.

(Photo courtesy of Susanne Iobst)

Far left, judge Debra Sweet and far right, judge Abbie Young.

(Photo courtesy of Susanne Iobst)



Raima Islam ((fourth from left) received 1st Place in the Medicine category at MARM.

(Photo courtesy of Louise Lawter)

NORTH JERSEY SECTION

How the "International Year of the Periodic Table," "Physicists in the Basement of the High Castle," and the Bastard Brigade Serendipitously Came Together for Two Science Teachers

As you know, 2019 has been designated as the International Year of the Periodic Table as we celebrate the 150 anniversary of Mendeleev's table. There are many celebrations and special events going on all over the world, but Miriam Gulotta and Diane Krone would like to share their story with you and explain why we chose uranium as our favorite element.

On June 24th we both received an email from Sam Kean, author of the New York Times best seller The Disappearing Spoon, announcing his new book The Bastard Brigade. Because we both enjoy Sam's witty writing style, we both ordered the book so that we would receive it on its release date of July 9th.

In the meantime, on July 1st, we received an invitation to attend a lecture at Rutgers University that would be presented by Professor Timothy Koeth of the University of Maryland and a Rutgers graduate. As the flyer explained, Prof. Koeth "will present a fascinating story concerning a mysterious uranium cube and the German atomic bomb effort." The lecture looked interesting, and we both saved the email and then forgot about the invitation.

Our copies of *The Bastard Brigade* arrived on July 9th and both of use quickly became engrossed with the history and the characters in the book. The story is about the German physicists, members of the Uranium Club, and a group of renegade spies from the United States, who are scientists and work in interesting ways to prevent Hitler's Nazis from developing the atomic bomb.

Quite by accident, we again came across the email from Rutgers at about the time we were reading about how the Uranium Club was trying to put its bomb together and decided that we couldn't pass on this lecture. And we are glad we didn't. Prof. Koeth brought one of the two uranium cubes from the German nuclear reactor and provided more detail about the atomic bomb efforts. You can read more about Prof. Koeth's uranium cube and how he confirmed its identity at http://tinyurl.com/yxqgqzpq. We think you will enjoy both Professor Koeth's article and Sam Kean's The Bastard Brigade.

Did you know that it is chemical effects, and not radiation, that makes uranium a health risk? Did you know that uranium is very dense? Prof. Koeth's two inch cube of uranium weighs 5 lbs. Did you know that uranium is named after the planet Uranus? Because uranium contains very trace amounts of U-235, in order to sustain a nuclear chain reaction, it needs a moderator. What's a moderator? Read Sam Kean's book to find out . . . or ask Prof. Koeth.

Diane Krone, Prof. Timothy Koeth, and Miriam Gulotta with the mysterious uranium cube.

(Photo courtesy of Reiko Schnetzer)

NORTH JERSEY CONGRATULATES NEW ACS FELLOWS

The North Jersey Section is very proud to be able to congratulate the six members of our section who are among the 70 new ACS Fellows announced in 2019. These men and women will be celebrated for their contributions to Science and their profession as well as to the ACS Community in the upcoming National meeting in San Diego.

Dr. Kevin Belfield (New Jersey Institute of Technology)

Contribution to the Science/Profession — Recognized for contributions to organic photonic materials, especially two-photon absorbing materials in 3D optical data storage and bioimaging, and continuous leadership in developing academic programs, departments, and student mentorship.

Contribution to the ACS Community — Recognized for sustained service to local sections, Student Affiliates Chapters, public outreach, serving in a number of roles and offices, and as organizer for professional symposia and workshops. *(See also article on the New Jersey Chemistry Olympics pp. 16-23.)*

Ms. Jacqueline Erickson (GlaxoSmithKline)

Contribution to the Science/Profession

Recognized for over 30 years of significant contributions in project leadership and analytical chemistry. Her work leads to the commercialization of innovative new products globally, thus contributing to the business.

Contribution to the ACS Community

Recognized for over 20 years of dedicated service to the ACS in the North Jersey local section, Division of Professional Relations and 4 national committees.

Dr. Ed Sherer (Merck)

Contribution to the Science/Profession

Recognized for his contributions to drug design and development. Established an industry leading computational group in support of process and analytical chemistry which has driven catalyst and biocatalyst design.

Contribution to the ACS Community

Recognized for contributions to the Division of Computers in Chemistry as Secretary and Chair over 10 years, co-established the COMP Social Saturday and Undergraduate Workshop held at each National Meeting.

Dr. Ann Weber (Ann Weber Pharma Consulting LLC)

Contribution to the Science/Profession

Recognized for leadership in and contributions to medicinal chemistry and drug discovery research leading to the successful development of new drugs for the treatment of patients with type 2 diabetes

Contribution to the ACS Community

Recognized for commitment to advancing women in chemistry and for championing initiatives like the WCC Merck Research Award to provide opportunities for and highlight contributions of talented women chemists.

In addition to the four highlighted here, **Dr. Frieder Jaekle (Rutgers University)** and **Dr. David Roush (Merck)** are also members of the 2019 Class of ACS Fellows. We hope to feature them in the October edition of *The Indicator.*

(See Call for Nominations on page 40.)

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

August 28, 2019

New York Meetings

https://www.newyorkacs.org

ACS, NEW YORK SECTION BOARD OF DIRECTORS

MEETING DATES FOR 2019

The dates for the Board of Directors Meetings of the ACS New York Section for 2019 have been selected and approved. The meetings are open to all – everybody is welcome. All non-board members who would like to attend any of the meetings should inform the New York Section office by emailing Mrs. Marilyn Jespersen at **njesper1@optonline.net** or by calling the Section office at (516) 883-7510.

Dates and locations of the meetings are posted below and on the New York Section website at **https://www.NewYorkACS.org**. Prof. Justyna Widera-Kalinowska will chair all meetings. Refreshments will be available starting at 6:00 PM and the board meetings will start at exactly 6:30 PM.

The Board Meeting dates and locations for 2019 are:

Friday, September 13, 2019
Adelphi University
1 South Avenue
Garden City, NY 11530

Friday, November 15, 2019
Adelphi University
1 South Avenue
Garden City, NY 11530

Directions
https://visit.adelphi.edu/travel-info/directions

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

Targeted Protein Degradation: From Chemical Biology to Drug Discovery

Organizers: Lynn M. Abell, PhD
Agios

Matthew Calabrese, PhD
Pfizer

Eric Fischer, PhD
Dana-Farber Cancer Center

Adam Gilbert, PhD
Pfizer

Matthew Medeiros, PhD
Agios

Claire M. Steppan, PhD
Pfizer

Keynote: James Bradner, MD
Novartis Institutes for BioMedical Research

Speakers: Paola Castaldi, PhD
AstraZeneca

Philip Chamberlain, D.Phil
Celgene

Danette Daniels, PhD
Promega

Benjamin Ebert, MD, PhD
Dana-Farber Cancer Institute
Harvard Medical School

Eric Fischer, PhD
Dana-Farber Cancer Institute
Harvard Medical School

Andreas Martin, PhD
University of California, Berkeley

Michael Rape, PhD
University of California, Berkeley

Shaomeng Wang, PhD
University of Michigan
Medical School

Ingrid Wertz, PhD
Genentech

Targeted protein degradation is a new therapeutic approach with potential to inhibit "undruggable" drivers of disease. This symposium will highlight the latest advances in the field of targeted protein degradation and showcase its benefits over traditional small molecule inhibitors.

Date: **Tuesday, September 24, 2019**
Time: 8:30 AM – 6:00 PM
(reception to follow)
Place: The New York Academy of Sciences
7 World Trade Center
250 Greenwich Street – 40th Floor
New York, NY 10007
Cost: ACS and NYAS members save $50 or more on this event. Please select the appropriate member/non-member Registration Category

(continued on page 28)

BIOCHEMICAL TOPICAL GROUP

(continued from page 27

and use the Priority Code "ACS".

For more information and to register for the event, go to:
https://www.nyas.org/Protacs2019

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

EMPLOYMENT AND PROFESSIONAL RELATIONS COMMITTEE OF THE NEW YORK SECTION

To Human Resources Departments in Industry and Academia

The Employment and Professional Relations Committee maintains a roster of candidates who are ACS members seeking a position in the New York metropolitan area. If you have job openings and would like qualified candidates to contact you, please send a brief job description and educational/ experience background required to **hessytaft@hotmail.com**.

Candidates from our roster who meet the requirements you describe will be asked to contact you.

ACS NEW YORK SECTION 2019 ELECTIONS RESULTS

The results of the ACS New York Section's 2019 elections, held in May, were announced at the Board of Directors meeting on June 7, 2019. The New York Section extends a sincere thank you to all of the candidates and expresses its appreciation for their time and efforts in preparing for the elections.

Congratulations to all.

Chair-elect for 2020
Rita K. Upmacis

Treasurer for 2020 – 2021
Frank R. Romano

Directors-at-Large for 2020
Donald C. Clarke
Rolande R. Hodel
Kevin S. Kolack

Councilors for 2020-2022
Alison G. Hyslop
Neil D. Jespersen
Justyna Widera-Kalinowska

Alternate Councilors for 2020-2022
Ronald P. D'Amelia
Hiroko I. Karan
Frank R. Romano

NEW YORK SECTION — SCIENCE CAFÉ — "THE PERIODIC TABLE PEOPLE"

FUTURE EVENT

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

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

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

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

What? Science Café.
When? Saturday, October 5, 2019
Time? 2:00 PM
Where? The Sullivan Hall cafeteria
St. John's University
Queens, NY

Students at any level of chemistry instruction are invited to submit a faculty-student-team-researched-and-written brief essay (1,000 words or less) describing a personality in the Periodic Table (see list below). The essay should contain biographical information, the contribution of this person to science, and a justification for his/her place in the table. At least two supporting scholarly references (not taken from the internet)

should accompany the essay; they will not figure in the word count. The competing teams will perform a 5-minute (or less) skit based on the essay at the NY Section Science Café. Essays/skits will be judged on the depth and clarity of science covered, the quality of research, and historic content as evidenced in the skit. Winning teams will receive one of three Grand Prizes for their schools: a voucher for supplies selected from the Flinn Catalog (1st prize - $300; 2nd prize - $200: 3rd prize - $100). **By September 13**, submit your team's (3 persons minimum, including your faculty member) intent to participate along with your preferred five Periodic Persons to **chemsource.info@gmail.com**; you will receive your designated "person" by return email, on a first-come first served basis to avoid duplicates. **Before September 30, 2019, please submit your essay and skit outline along with a captioned photograph of your team to the same email address.** Please include the name and location of your institution and contact information. **Essay entries and skit outlines will be judged and admitted for performance at the Science Café by October 1. Winners will be judged and announced at the American Chemical Society New York Section Science Café on October 5, 2019 being held at St. John's University, Queens, NY at 2:00 PM.** Refreshments, team prizes, camaraderie!! Come one, come all! To be eligible for one of the grand prizes, you MUST present your skit at the Science Café. Essays submitted by email only without a skit will be eligible for a Periodic Table-related prize only.

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

At. No.	Person
62	Vassili Samarsky-Bykhovets
64	Johan Gadolin
96	Marie Curie
96	Pierre Curie
99	Albert Einstein
100	Enrico Fermi
101	Dmitri Mendeleev
102	Alfred Nobel
103	Ernest O. Lawrence
104	Ernest Rutherford
106	Glenn Seaborg
107	Niels Bohr
109	Lise Meitner
111	Wilhelm Roentgen
112	Nicolaus Copernicus
114	Georgy Flerov
118	Yuri Oganesson

WESTCHESTER CHEMICAL SOCIETY

*****

FUTURE MEETING

Science Café - "The Science of Aging-Extending Healthy Life"

Science Cafés are designed for informed interaction with members of the public on scientific matters of current concern in society. The essence of a Science Café is informality, with groups seated around tables, with food and drink to encourage conversation.

Speaker & Discussion Leader: Toby G. Rossman, Ph.D.
Retired Professor of
Environmental Medicine
New York University
School of Medicine
(now NYU-Langone Health)

Biography: Toby G. Rossman, Ph.D. was Professor of Environmental Medicine at the New York University School of Medicine (now NYU-Langone Health) and Director of the Molecular Toxicology and Carcinogenesis Research Core of the NYU/NIEHS Center. After her biology degree from NYU and research experience in Biochemistry at Brandeis University, she completed her Ph.D. degree in Basic Medical Sciences (Microbiology and Biochemistry) at NYU. She joined the faculty there after some further years of research experience and retired as professor of Environmental Medicine. Dr. Rossman received continuous funding for her research for over 30 years and published over 120 articles, mostly on mechanisms of carcinogenesis. She now consults for the legal profession, teaches at local universities, and runs the Hudson Valley Science Café.

(continued on page 30)

WESTCHESTER CHEMICAL SOCIETY

(continued from page 29)

Talk Summary: Human life expectancy has been increasing for at least 100 years. We will soon have more older people than children and more people at "extreme old age" (>85) than ever before. Although people are living longer, it also means that more people are living with noncommunicable diseases such as type 2 diabetes, obesity, cardiovascular diseases, arthritis, chronic respiratory diseases, dementias, and cancers. For others, aging is accompanied by major disabilities. How much of this can be prevented? This lecture reviews what we know about the aging process and in particular, what we know about healthy aging.

Date: **Thursday, October 10, 2019**
Time: Social and Snacks 5:15 PM
(Cold drinks and a variety of snacks freely available, as well as a cash bar.)
Lecture and Discussion 5:30 PM
Option to Order Dinner 7:00 PM
Place: Stone Manor Restaurant,
101 Saw Mill River Rd. (Route 9A),
Hawthorne, NY 10532
Tel: 914-703-4112
Cost: $3.00 Students; $5.00 All Others

For further information: contact Peter Corfield, **pcorfield@fordham.edu**
Phone: 914-762-4468; Text:
914-980-9128 or 914-218-7607.

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

*****

FUTURE MEETING

Note that this meeting had been scheduled for February 12, 2019 but had to be rescheduled because of inclement weather.

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

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

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

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

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

Abstract: Despite the fact that certain metal ions are essential for life, some are highly poisonous. For example, while zinc is essential for humans, as exemplified by its roles in carbonic anhydrase and liver alcohol dehydrogenase, its congeners, cadmium and mercury, are most toxic. Synthetic analogues, i.e. small molecules that mimic the structure and function of enzymes, provide an important means to afford insight into the natural systems. Tripodal ligands provide a

means to obtain such analogues and the research described will focus on the application of tripodal ligands in the chemistry of zinc and mercury. In addition, these ligands provide access to novel hydride compounds of zinc and magnesium that are capable of a variety of catalytic transformations. For example, these catalysts are capable of functionalizing carbon dioxide, a transformation that is of particular interest considering that carbon dioxide is a ubiquitous and typically inert compound.

Date: Thursday, November 7, 2019
Times: Refreshments: 5:30 PM
Lecture: 6:00 PM
Place: Westchester Community College
Gateway Building Room 110
75 Grasslands Road
Valhalla, NY 10595
Cost: Free and Opened to the Public

For further information contact Paul Dillon
E-Mail **PaulWDillon2@hotmail.com**
Phone 1-914-393-6940

Inclement weather: The WCC information number for closures: 1-914-606-6900

RSVP: Appreciated but not necessary.

WESTCHESTER CHEMICAL SOCIETY

Our treasurer, Dr. Peter Corfield, presented a paper on "Copper Cyanide Polymers – 'New Directions' " at the Annual Meeting of the American Crystallographic Association, July 20-24, 2019, in Cincinnati, Ohio.

LONG ISLAND ACS 2019 FALL SEMINAR PROGRAM

* * * * *

OCTOBER MEETING

Deammonification For Sustainable Nitrogen Management in Wastewater Resource Recovery Facilities

Speaker: Dr. Dimitrios Katehis
Director of Regulatory
Compliance and Innovation
New York City Environment
Protection

Abstract: Conventional management of nitrogen discharges from Wastewater Resource Recovery Facilities, WRRFs, increases the resource intensity of treatment with additional energy consumption, the need for supplemental organic chemical and supplemental alkalinity addition, an increased production in harvested biomass that needs to be post processed, and an increased potential for nitrous oxide emissions, materially increasing the carbon footprint of nitrogen removal. Over the past two decades, the ongoing development of a novel alternative biochemical pathway, deammonification, promises a significant reduction in the carbon footprint and cost of treatment. After providing an overview of the wastewater resource recovery process, this presentation will focus on one application point within WRRFs, where this reaction has been broadly applied successfully, the anaerobically digested biosolids dewatering stream. NYCDEP's contributions at the early stages of development of the deammonification process included the identification of key operational risks and the development and demonstration of mitigation strategies. The significant R&D opportunities that remain as we attempt to harness the deammonification reaction for removal of nitrogen from the main plant flow, which represent the bulk of the nitrogen input into WRRFs will be outlined.

Date: Thursday, October 3, 2019
Times: 6:00 PM to 8:00 PM
(Refreshments start at 5:30 PM)
Place: Queensborough Community
College, Science Building, S-112
222-05 56th Avenue
Queens, NY 11364
Cost: Dinner follows Seminar at a nearby restaurant, $25 per person)

http://www.qcc.cuny.edu/about/getting-here.html for directions.

* * * * *

NOVEMBER MEETING

Spatial and Temporal Variability of Nutrient Concentrations in Long Island Sound

Speaker: Dr. Paul Marchese
Professor of Physics
Queensborough Community
College

Abstract: Hypoxia is a problem that plagues many estuaries. Anthropogenic nutrients (in the form of Nitrates and Phosphates) from sources such as sewage treatment plants, agricultural fertilizers, and urban runoff are introduced into the water which results in

(continued on page 32)

LONG ISLAND ACS 2019 FALL SEMINAR PROGRAM

(continued from page 31)

excess algae growth. When the algae sink and decompose there is an increase in the demand for oxygen putting stress on the biology. This condition is exacerbated during the summer when solar heating and increased fresh summer melt result in lower water density at the surface; creating density stratification of the water column and preventing the ventilation of bottom waters. This study analyzed the spatial and temporal variability of nutrients in Long Island Sound. Nutrient concentrations are highly dependent on seasonal variability and density stratification. Since 1995, Nitrogen concentrations have decreased while Phosphorus has continued to increase affecting the chemical balance of the Sound.

Date: **Thursday, November 7, 2019**
Times: 6:00 PM to 8:00 PM
(Refreshments start at 5:30 PM)
Place: Queensborough Community College, Science Building, S-112
222-05 56th Avenue
Queens, NY 11364
Cost: Dinner follows Seminar at a nearby restaurant, $25 per person)

http://www.qcc.cuny.edu/about/getting-here.html for directions.

* * * * *

Long Island ACS 2019 Holliday Dinner

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

Mendeleev and the Periodic Table

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

Date: **Thursday, December 5, 2019**
Time: 6:00 PM to 8:00 PM
Place: Nassau Community College
CCB Building, Room 251/252
Garden City, NY

Directions: **https://www.ncc.edu/campusservices/parkingandsafety/mapanddirections.shtml**

DR. VICKI GRASSIAN AWARDED THE WILLIAM H. NICHOLS MEDAL FOR 2019

On April 12, Dr. Vicki Grassian of the University of California, San Diego, received the ACS, New York Section's William H. Nichols Medal Award for 2019. The symposium and banquet in her honor took place at the Crowne Plaza Hotel, White Plains, NY. Dr. Grassian received the Nichols gold Medal "For Outstanding Contributions to Interfacial Environmental Chemistry." Over two hundred chemists and guests attended the day's events.

Dr. Grassian receiving the William H. Nichols Medal Award from Chair Dr. Justyna Widera-Kalinowska.

Dr. Ruben Savizky, 2019 Chair-elect of the NY Section, doing a quality job hosting the Nichols Distinquished Symposium with over 200 attendees.

The William H. Nichols Distinguished Symposium, that preceded the award dinner, was titled "Interfacial and Multiphase Chemistry Relevant to the Environment." The attendees enjoyed excellent talks by the following internationally known speakers: Dr. Angela Goodman (National Energy Technology Laboratory), Dr. Sarah Larsen (University of Houston), Dr. Veronica Vaida (University of Colorado, Boulder), and Dr. Grassian who presented the Award Lecture titled "Physical Chemistry of Environmental Interfaces." Dr. Ruben Savizky, Chair-elect of the New York Section for 2019, superbly conducted the symposium.

Dr. Justyna Widera-Kalinowska, 2019 Chair of the ACS New York Section, welcomed the dinner guests and recounted the story of Dr. William H. Nichols and the history of the Nichols Medal. The American Chemical Society's Division 1 Director, Dr. Katherine Lee, brought greetings and congratulations from the members of the ACS. Dr. Sarah Larsen, Dr. Grassian's colleague and friend for over 20 years, gave a delightful introduction of this year's

Dr. Veronica Vaida of the University of Colorado - One of four symposium speakers at Nichols 2019.

Dr. Sarah Larsen, dear friend and colleague of Dr. Grassian, introducing the Medalist at the award dinner.

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DR. VICKI GRASSIAN AWARDED THE WILLIAM H. NICHOLS MEDAL FOR 2019

(continued from page 33)

Dr. Katherine Lee offering greetings and best wishes from the American Chemical Society.

Annual group photo of speakers and executive officers. Left to right: Dr. Katherine Lee (ACS District 1 Director), Speaker Dr. Angela Goodman, Medalist Dr. Vicki Grassian, Dr. Ruben Savizky (NY Section Chair-elect), Speaker Dr. Veronica Vaida, Dr. Justyna Widera-Kalinowska (NY Section Chair) and Speaker Dr. Sarah Larsen.

medalist. Dr. Grassian is the fourth woman to receive the Nichols medal. NY ACS Chair Dr. Widera-Kalinowska then awarded the gold medal, identical bronze medal and an honorarium to Dr. Grassian. Following the dinner, the Medalist and speakers happily met with students, signed their dinner booklets and posed for photos with the students – to conclude another successful and truly enjoyable Nichols Medal event.

Many members of the Nichols family also enjoyed this special event. The New York Section was honored to have as guests: Mrs. Helga Nichols (wife of the late C. Walter Nichols, III), Mrs. Sandra Nash and Mrs. Hope Prockop (great, great granddaughters of Dr. William Nichols), Mr. Wally Nichols Jr. (great, great grandson), Whitney Nash, Gardner Nash, Molly Prockop and Hattie Nichols (great, great, great grandchildren of Dr. Nichols). It is exciting and truly a great pleasure to have the Nichols family members present at the presentation of the Nichols Medal as a continuation of the Dr. William H. Nichols legacy.

On a sad note, Mr. C. Walter Nichols III (Wally) passed away on January 13, 2019. Wally was a dedicated and passionate supporter of the New York Section and its Nichols Medal Award. He attended numerous award presentations and many looked forward to seeing himthere each year. He is truly missed and will always be remembered for his smile, humor

The American Chemical Society honored the Nichols family with a proclamation at the passing of C. Walter Nichols III in January. Wally was a beloved friend and benefactor of the ACS, New York Section. The proclamation was read at the Nichols Award Dinner.

Dr. Neil Jespersen, a long time friend of Wally Nichols, reading a memorial to him.

and camaraderie. At the Nichols Award dinner, a special proclamation from the American Chemical Society, honoring Mr. Nichols, was read by Dr. Katherine Lee and greatly appreciated. Dr. Neil Jespersen delivered a memorial speech honoring Wally Nichols.

The Nichols Medal Award was established in 1902 by Dr. William H. Nichols to honor a chemical scientist for outstanding original research and was first awarded in 1903. Dr. Nichols, a charter member of the American Chemical Society and its president in 1918 and 1919, maintained a deep commitment to research and development and to the importance of supporting science education and students of chemistry. Since its inception, through an endowment fund, the New York Section administers the award. It has been perpetuated by the generosity of Dr. Nichols, his family and the Nichols Foundation, Inc. The William H. Nichols Medal is the first award in chemistry of the American Chemical Society.

Students and faculty from the United States Merchant Marine Academy enjoying the Nichols banquet that was attended by students from 30 colleges and universities.

Medalist with Symposium Speakers and ACS Executive Officers at the Nichols Reception.

Dr. Grassian happily meeting with the college students after the event.

COLLEGE TEAMS COMPETE ON CHEMISTRY KNOWLEDGE AT LONG ISLAND ACS CHEMISTRY CHALLENGE PROGRAM

For the 19th consecutive year, the Chemistry Challenge took place on Friday, May 3, 2019 from 5:00 pm to 8:30 pm at Queensborough Community College (QCC). Twenty-two student teams of three members each from 11 area colleges and coming from all directions, tested their knowledge about chemistry at the event. The teams, competing at two 2 year- and 4-year levels, went head to head against each other answering 45 clicker style questions, 60% from General Chemistry and 40% Organic Chemistry, with a few questions on Analytical Chemistry and Physical Chemistry topics. In the end, only 1 team at each level took home the trophy. This year tie breaker questions were used to decide the 4-year winning team. Medals and prizes were presented to the top three teams at each level. All participants received Certificates of Achievement. The winner break-down is as follows:

4-Year

1st Hofstra University
Matthew Saleem, Andrew Ko, Gianna Kroening (Gold Cup)

2nd Adelphi University
Vinay Maddula, Temuorjon Ismailov, Marisa McLeod

3rd Hofstra University
Joseph Mancuso, David Shaker, Nicole Khouryawad

2-Year

1st St. John's University
Alesandro Civljak, Beshoy Farah, David Uwakwe (Gold Cup)

2nd St. John's University
Phuong Le, Angela Tran, Tanner Perez

3rd Nassau Community College
Anthony Ginez, Samantha Boegle

A total of 125 people were in attendance. A lighthearted social was generously arranged for by Dr. Paris Svoronos and QCC student clubs before the competition. Both the Long Island ACS (LIACS) Chair, Dr. Ping Furlan, and New York ACS (NYACS) Chair, Dr. Justyna Widera, welcomed the attendees. Dr. Widera also reminded the audience that 2019 was the International Year of the Periodic Table and that humans were the most important element on the Table. The Organizing Committee used Periodic Table questions for "clicker" training. The skillful technology management by Professor Marlon Moreno and the brilliant moderation by Dr. Barbara Hillery kept the entire evening smooth, joyful and engaging.

The event was made possible through the financial sponsorship of the LIACS, the donations of the QCC Student Clubs, and the support of the QCC Chemistry Department. Huge thanks goes to all LIACS board members, especially, Dan Resch (Education Committee Chair), Luis Vargas (Chemistry Challenge Committee Chair), Sujun Wei, Marlon Moreno, and Pairs Svoronos for their leadership, and their detailed and dedicated work, that turned the event night to a great, pleasant, and memorable night! Thank you also to Terrence Black for helping with the registration. Faculty coaches Dr. Neil Jesperson (St. John's University), Dr. Paris Svoronos (QCC), Dr. Gopal Subramaniam (Queens College), Dr. Ronald D'Amelia (Hofstra University), Dr. Kevin Mark (LGCC), Dr. Daniel Resch (NCC), Dr. Judith Llyod (SUNY Old Westbury), Professor John Sleckman (Farmingdale State College), Dr. Justyna Widera (Adelphi University), Dr. Catherine Foster (York College), and Dr. Neal Phillip (BCC) were all instrumental in assembling their best minds in chemistry that made this event a great success. All participants enjoyed their experiences and planned to come back for next year's Program, which will mark the Program's 20th anniversary, and take place on Friday, April 24, 2020. Thank you to all who took part in the event, Kudo to Dr. Svoronos who originated the Program 19 years ago, and see you all next year!

(Photos on page 37)

Long Island ACS Chemistry Challenge Program.

(Photos courtesy of Dr. Sujun Wei)

LONG ISLAND ACS AWARDED THE BEST AND THE BRIGHTEST AREA HIGH SCHOOL STUDENTS

For the 30th consecutive year, the LIACS recognized the best High School chemistry students from High Schools in Nassau, Suffolk and Queens Counties. The Award Dinner, chaired and skillfully moderated and entertained by Frank Romano, took place on May 9, 2019 from 5:30 PM. to 9:00 PM at Nassau Community College (NCC), CCB Building, Multipurpose Room, 1st Floor. Approximately 90 people attended, including 33 awardees, their families, teachers, administrators, LIACS and NYACS Board members. We also mailed plaques to 17 awardees who were not able to attend the Award ceremony. Dr. Alfredo Mellace, the Chemistry Department Chair at NCC, gave a featured and well received presentation entitled "Ancient Science & Technology: The Roman Period of the 1st Century AD". Each of the Awardees received a certificate mounted on a handsome wood plaque presented by Dr. Justyna Widera-Kalinowska, NYACS Chair, and Dr. Ping Furlan, LIACS Chair. The youngsters also enjoyed getting a chance of winning some cool chemistry raffle prizes, including periodic table beach towels, ACS safety conscious mole dolls, smart phone external battery packs, headphones and tee shirts. We would like to especially thank Frank Romano, the Master of Ceremonies and the Key Event Organizer, for his time, efforts, and effective leadership. Special thanks also go to Dr. Philip Mark, Dr. Neil Jespersen, Dr. Brian Gibney, Dr. Paul Sideris, Dr. Marlon Moreno, Dr. Dan Resch, Dr. John Sleckman, Dr. Rakhi Argarwal, Jonathan Romano, and Lawrence Anderson for all their help in making the event celebrative, inspiring, and memorable for our guests. We would also like to thank Nassau Community College for providing the venue and Queensborough Community College for assisting with the 750-piece mailing.

(Photos courtesy of Dr. Brian Gibney)

NYSAS — SOCIETY FOR APPLIED SPECTROSCOPY

Inspiring, Motivating, and Educating Students to be Tomorrow's STEM Leaders & FT-IR Microspectroscopy – New Instrumentation for Materials

By Debbie Peru

The May 2019 meeting of the New York (New Jersey) Regional Section of the Society for Applied Spectroscopy (NYSAS) was held on May 28th at the Horiba Optical Spectroscopy center in Piscataway, NJ. This special meeting featured two excellent guest speakers: Gary Sarkis, Director of Operations, S2S Newark Technology Center, representing Students 2 Science (S2S), a nonprofit STEM organization; and Dr. David W. Schiering, Managing Partner of Czitek in Danbury, CT.

During dinner, we asked Gary Sarkis to provide an overview of the S2S organization, its mission, and to highlight opportunities for our members to get involved with this wonderful organization. Students 2 Science (S2S) aims to inspire, motivate, and educate our nation's future STEM leaders. Cross-sector collaborations between professional scientists in local businesses, institutions of higher education, district leadership, and workforce-readiness agencies are important pillars of success. S2S is recognized as a national model in authentic STEM education and urban community development. They recently opened a second Technology Cener in Newark, in formal partnership with the Newark Board of Education and the City of Newark, to bring hands-on STEM education district-wide in the city.

The main objective of S2S is to create innovative, hands-on STEM education experiences, complete with state-of-the-art laboratory experiences and access to professional scientists. Students perform age-appropriate, rigorous science experiments to resolve relevant, contemporary problems. The trajectory is designed to start STEM education early by building on basic skills learned at the elementary level and building on these skills through high school.

The New York Regional Section is connecting with S2S as a way to offer members new opportunities to share their scientific experience with these young minds and to encourage our local students to persue careers in spectroscopy and related sciences.

A technical presentation on FTIR Microspectroscopy was delivered by Dr. David Schiering, founder and partner of Czitek, a small business dedicated to the development and marketing of vibrational spectroscopy products. Formerly with Smiths Detection, SensIR Technologies, Thermo Electron Corp., and Perkin Elmer, David has more than thirty (30) years of experience in developing instrumentation for chemical measurements.

He has authored numerous publications on various aspects of vibrational spectroscopy and holds a PhD in analytical chemistry from Miami University, where he is also an adjunct Assistant Professor of Chemistry. In 2011, he was made an Honorary Member of the Coblentz Society and in 2018 received a Society of Applied Spectroscopy Fellows award.

The presentation covered the history of modern ATR FTIR sampling interfaces. Czitek is a unique manufacturer of micro ATR sampling interfaces. Their niche is combining spectroscopy with imaging in a minitiarized sampling unit that can be interfaced with any type of Mid Infrared instrument. The coupling of imaging with spectroscopy provides a powerful combination for the microscopic characterization of materials and the chemical identification of microscopic specimens. The origins of coupling microscopes with infrared spectrometers date to 1949. Continuous instrumental and methods innovation has propelled the IR microscopy field, increasing performance and driving new applications, many of which are in the area of forensics for both crime and industrial problem solving. David also discussed the new, grazing angle FT-IR microscope for use in studies of thin films and contaminants.

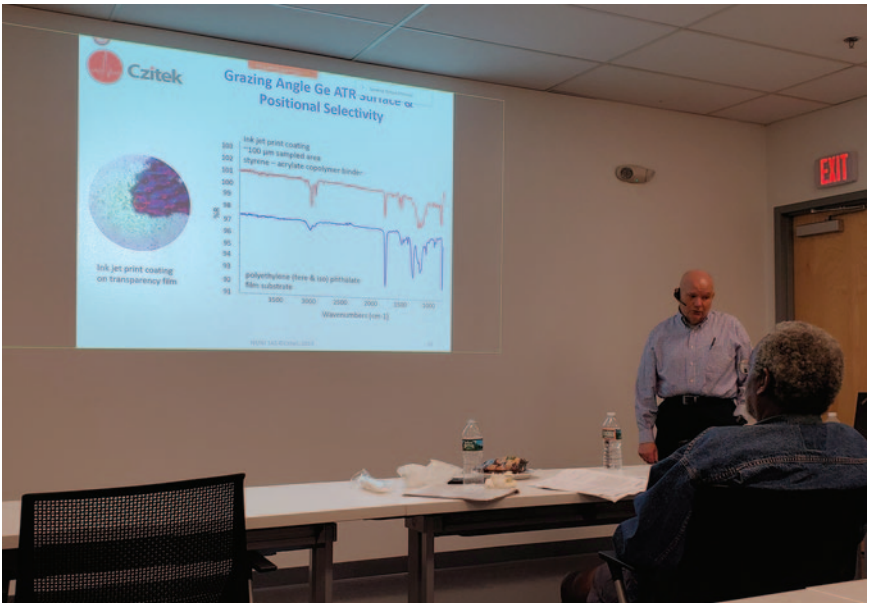
We had 12 people attend the meeting at Horiba. If you missed the meeting and would like to hear a replay of the presentation, send an email to **debperu@outlook.com** and we will send you a link to the webinar

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

(See photo on page 40)

NYSAS — SOCIETY FOR APPLIED SPECTROSCOPY

(continued from page 39)



Dr. David Schiering, Co-Founder and Partner of Cztick Inc.

(Photo courtesy of Cztck, Inc.)

SOCIETY FOR APPLIED SPECTROSCOPY

*** * * * * ANNOUNCEMENT * * * * ***

The New York Section of the Society for Applied Spectroscopy (NYSAS) is proud to announce that our current Chair, Debbie Peru, has been selected to receive 2019 Distinguished Service Award of the national Society (SAS). To quote from the SAS official anouncement: "Her exceptional contributions over many years to SAS made her extremely worthy recipient of this award. Congratulations! The award will be formally presented at the SAS Annual National Meeting during SciX 2019 in Palm Springs, California. The award will be presented at a special ceremony on Tuesday, 15 October at 7:00 P.M"

Call for Nominations

NORTH JERSEY SECTION

Do You Know of Someone in the North Jersey Section of ACS Who Should Be Recognized as an ACS Fellow?

The American Chemical Society (ACS) Fellows Program was created by the ACS Board of Directors in December 2008 to recognize members of ACS for outstanding achievements in and contributions to the science, the profession, and the Society. To learn more about the program go to **www.acs.org/fellows**.

The North Jersey Section of ACS has outstanding members who have made exceptional contributions to the science, or their profession and have provided excellent volunteer service to the ACS community. The section can nominate up to 9 of its members for this distinction. We are asking for your help in identifying these outstanding members of our section by filling out a short survey **by November 30, 2019**.

The survey can be found at **http://tinyurl.com/y4x4arwc**. Someone from the NJACS Awards Committee will contact you after we receive your nomination.

Calls for Help

ChemExpo 2019

At Liberty Science Center, Jersey City, New Jersey
10:30 am – 3 pm on Saturday, October 19, 2019

Call for Help

To celebrate National Chemistry Week,
the North Jersey Section of ACS will be holding its 25th ***ChemExpo***.

Please help us make a difference!

The theme for this year is

Join us to make this event a fun-filled day of hands-on science chemistry activities that will engage visitors in exploring the positive impacts of chemistry.

Please register at ***http://tiny.cc/NJACSchemexpo2019***

The Section is most appreciative of your efforts.
Thanks a lot for your help.

Sincerely,

ChemExpo Committee

Call for Sponsors

2019 IYPT
International Year of the Periodic Table of Chemical Elements

NATIONAL CHEMISTRY WEEK

ACS Local Section New York

New York Local Section of the American Chemical Society

National Chemistry Week

Chemistry Spectacular Hands-on Show – Marvelous Metals

Call for Sponsorship and Participation

When: ***Sunday, October 20, 2019 (11 AM – 4 PM)***
Where: New York Hall of Science (NYSCI), Flushing, Queens
What: 40 tables of hands-on experiments, demonstrations, and giveaways. Special photo opportunities especially with a giant 3D Periodic Table constructed by NYACS.
Who: Last year, activities were presented by 250 volunteers and engaged more than 1,200 community youth and parents. Participants included some of the New York's most prestigious colleges, universities and industries and the Program has received multiple awards including the esteemed American Chemical Society ChemLuminary Award and the Partners for Progress and Prosperity Award.

During 2019's International Year of the Periodic Table, the New York Local Section will celebrate the National Chemistry Week (NCW) with its 2019 theme, "Marvelous Metals", and ***needs your help to make this year's celebration another success!*** If you and your organization are interested in participating in or sponsoring an activity table at the event, please visit the New York Section's NCW website at: http://www.newyorkacs.org/meetings/NCW/2019_ncw.php. The site also links to ***online registration, which will be closed on September 27, 2019,*** Additionally please visit http://www.newyorkacs.org/meetings/IYPT/IYPT.php and consider to be a participant and/or a sponsor to help the NYACS build the giant 3D Periodic Table which will be displayed at NYSCI during the NCW.

For more information about the NCW celebration in New York, please contact Dr. Ping Furlan (furlanp@usmma.edu), Dr. Ivan Hyatt (ihyatt@adelphi.edu), Joseph Wiener (Joseph.Wiener@PepsiCo.com), or Erin Wasserman (illustrated poem contest coordinator, ewasserman602z@gmail.com). We look forward to your participation and your organization's sponsorship as we celebrate the important roles chemistry plays in our everyday lives and how it can be FUN! Please include activities highlighting the yearly theme, "Marvelous Metals". Volunteers' parking at NYSCI is **FREE**.

You can also find additional information about NCW on the American Chemical Society's website at https://www.acs.org/content/acs/en/education/outreach/ncw.html.


Calls for Sponsors

2019 IYPT
International Year of the Periodic Table of Chemical Elements

NATIONAL CHEMISTRY WEEK

New York Local Section of the American Chemical Society

National Chemistry Week

Sponsorship Opportunities

For Constructing a Giant 3D Periodic Table

http://www.newyorkacs.org/meetings/IYPT/IYPT.php

The New York Local Section is joining the world-wide effort to celebrate the International Year of the Periodic Table in 2019 by constructing a giant three-dimensional Periodic Table for display at the New York Hall of Science. This Table, composed of 118 individual element panels designed by participants and approximately 12ft x 10ft x 9ft in size, pays tribute to the glorious discovery of the periodicity of the chemical elements and will be unveiled at our award winning National Chemistry Week celebration on Sunday, October 20, 2019.

The Project brings thousands of Section members and affiliates together, representing 50+ research centers, universities, colleges, high schools, chemical companies, for-profit and nonprofit organizations, exploring chemistry, conveying its importance to the public, and celebrating the legacy of science, discovery, innovation, and human collective endeavors in a most diversified and creative way.

Your organization's generous financial sponsorship will enable a great success of our commemoration of this historic year, and the creation of memories and experiences that our participants will cherish for years to come. As shown in the table below, we offer various levels of sponsorship with associated benefits. ***We hope you will become a Sponsor, especially prior to September 10, 2019 to ensure full benefits, by visiting http://newyorkacs.org/ and paying online via "Donate".*** *Please indicate the "donation purpose" is for "IYPT Project" and notify us afterwards by emailing to IYPT@newyorkacs.org.* We look forward to your sponsorship and seeing your representatives this Fall at New York Hall of Science on October 20, 2019!

New York Section 2019 IYPT Sponsorship Levels and Benefits (Note: Please pay by September 10, 2019 to ensure full benefits)

Sponsorship Level	Fee	Benefits
Platinum	$1,000	Plaque; Prominent Program, Event Site & Website Logo
Gold	$500	Plaque; Prominent Program, Event Site & Website Logo
Silver	$250	Certificate; Program, Event Site & Website Logo
Bronze	$100	Certificate; Program, Event Site & Website Logo

New York Local Section of the ACS
IYPT Ad-Hoc Committee (IYPT@newyorkacs.org)
Ping Furlan, Paul Sideris, Joseph Wiener, Paris Svoronos, Neil Jespersen
Chair: Justyna Widera-Kalinowska
Treasurer: Frank Romano
Webmaster: Brian Gibney

ACS Local Section New York

Call for Participation

New York Local Section of the American Chemical Society

Call for Participation

For Constructing a Giant 3D Periodic Table

http://www.newyorkacs.org/meetings/IYPT/IYPT.php

International Year of the Periodic Table of Chemical Elements

Dear Members of the New York Local Section of the ACS:

As we all know, 2019 marks the 150th anniversary of the Periodic Table of Chemical Elements and has therefore been proclaimed the International Year of the Periodic Table of Chemical Elements (IYPT2019).

To commemorate this historic year and pay tribute to the glorious discovery of the periodicity of the chemical elements, the New York Local Section will construct a giant three-dimensional Table, approximately 12ft x 10ft x 9ft in size. This large size Periodic Table will be displayed at the New York Hall of Science during the 2019 National Chemistry Week, in conjunction with our annual award-winning Chemistry Spectacular Hands-on Show that is set to take place on **Sunday, October 20, 2019.**

As your Chair, it is my great pleasure to invite you to join the Section in this venture, exploring chemistry, conveying its importance to the public, and celebrating the legacy of science, discovery, innovation, and human collective endeavors in a most diversified and creative way. The Project is sponsored by the New York Local Section and the participation is **FREE**.

Please visit newyorkacs.org to become a Project Participant by a) selecting an element, b) celebrating it with your original artwork, and c) submitting your design to display as part of the giant 3-D Periodic Table. **Please follow the Guidelines for Element Project Participants closely to help ensure Project success** (http://www.newyorkacs.org/meetings/IYPT/2019_IYPT_Guidelines.pdf).

Please Note the Important Dates:

- The Deadline for Element Selection: **Sunday, September 1, 2019, at 6:00 p.m.**
- The Deadline for Element Design Submission: **Saturday, September 21, 2019, at 6:00 p.m.**

ACS NY Section CME

Thank you very much.

Justyna Widera-Kalinowska, Ph.D.
2019 Chair
New York Local Section

nysci

NATIONAL CHEMISTRY WEEK

New York Local Section of the ACS
IYPT Ad-Hoc Committee (IYPT@newyorkacs.org)
Ping Furlan, Paul Sideris, Joseph Wiener, Paris Svoronos, Neil Jespersen
Chair: Justyna Widera-Kalinowska
Treasurer: Frank Romano
Webmaster: Brian Gibney

ACS Local Section New York

Call for Nominations

COMMITTEE ON THE HISTORY OF THE NEW YORK SECTION

Over the past twenty-three years the New York Section has participated in the designation of seven National Historic Chemical Landmarks and four New York Section Historic Chemical Landmarks. A brief description of these National and local section landmarks may be found on the NY Section Home Page at **https://www.newyorkacs.org** under the Committee on the History of the NY Section. These landmark programs recognize achievements in the chemical sciences and related areas, in order to enhance public appreciation for the contributions of the chemical sciences to modern life.

Please consider making a nomination for an historic chemical landmark. The Committee on the History of the NY Section will consider all nominations. In addition to a particular achievement, an historic library, building or association may be worthy of this distinction.

Please send your nomination, with supporting documentation, to the Chair of the Committee, Dr. Neil Jespersen, at **jespersn@stjohns.edu**.

Please reach out to your members to consider sending recommendations for this award. All nominations must be submitted by the Division or Committee, after approval from the respective Chair.

NORTH JERSEY SECTION

ACS Fellows

(See article on page 40.)

Call for Applications

ACS NEW YORK SECTION

www.NewYorkACS.org

Outstanding Four-Year University with Graduate School Chemistry Faculty Teaching Award

Purpose: To recognize, encourage and stimulate high quality teaching and research at four-year colleges and universities with graduate programs only within the New York Section of the American Chemical Society.

The nomination for this award includes:

1. Candidate's CV including list of publications, students' oral and poster presentations and other evidence of students' involvement.

2. Up to three letters of support from superiors, associates, or local section members evaluation the nominees achievements as a teacher.

These documents should demonstrate the candidate's

a. Quality of teaching

b. Research productivity

c. Department/college service including course development work

d. Ability to challenge and inspire students

e. Awards

The nominations are due September 30th. The candidates need not be a member of the American Chemical Society. The Award committee of the New York Section will review the candidates and select the nominee. Unsuccessful candidate's files will be kept active for a period of three years. Any updating of the file will be welcomed. The award consists of a major award plaque and a one year regular ACS member dues with New York Local Section dues, and will be recognized at the NY ACS Sectionwide conference.

Send materials to **Serafinj@stjohns.edu** **by September 30, 2019**.

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Outstanding Four-Year Undergraduate College and University Chemistry Faculty Teaching Award

Purpose: To recognize, encourage and stimulate high quality teaching and research at four-year colleges and universities with undergraduate programs ONLY within the New York Section of the American Chemical Society.

The nomination for this award includes:

1. Candidate's CV including list of publications, students' oral and poster presentations and other evidence of students' involvement.

2. Up to three letters of support from superiors, associates, or local section members evaluation the nominees achievements as a teacher.

These documents should demonstrate the candidate's

a. Quality of teaching

b. Research productivity

c. Department/college service including course development work

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CALL FOR APPLICATIONS

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d. Ability to challenge and inspire students

e. Awards

The nominations are due **September 30th**. The candidates need not be a member of the American Chemical Society.

The Award committee of the New York Section will review the candidates and select the nominee. Unsuccessful candidate's files will be kept active for a period of three years. Any updating of the file will be welcomed. The award consists of a major award plaque and a one year regular ACS member dues with New York Local Section dues, and will be recognized at the NY ACS Sectionwide conference.

Send materials to **Serafinj@stjohns.edu by September 30, 2019**.

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Outstanding Two-Year College Chemistry Teaching Award

Purpose: To recognize, encourage and stimulate high quality teaching and research at two-year colleges within the New York Section of the American Chemical Society.

The nomination for this award includes:

1. Candidate's CV including list of publications, students' oral and poster presentations and other evidence of students' involvement.

2. Up to three letters of support from superiors, associates, or local section members evaluation the nominees achievements as a teacher.

These documents should demonstrate the candidate's

a. Quality of teaching

b. Research productivity

c. Department/college service including course development work

d. Ability to challenge and inspire students

e. Awards

The nominations are due September 30th. The candidates need not be a member of the American Chemical Society.

The Award committee of the New York Section will review the candidates and select the nominee. Unsuccessful candidate's files will be kept active for a period of three years. Any updating of the file will be welcomed. The award consists of a major award plaque and a one year regular ACS member dues with New York Local Section dues, and will be recognized at the NY ACS Sectionwide conference.

Send materials to **Serafinj@stjohns.edu by September 30, 2019**.

Call for Volunteers

OPPORTUNITY FOR ACS MEMBERS TO AID STUDENTS 2 SCIENCE IN A HYBRID VIRTUAL LAB PROGRAM

Can you spare a few hours of your time? Do you like working with students and would you like the opportunity to share your science knowledge in a classroom? Students 2Science (S2S) is seeking volunteers to support its V-Lab program. S2S has a series of elementary, middle, and high school experiments that run in various schools across New Jersey. Members are especially needed to mentor students in participating schools to help with experiments. It's great fun, a wonderful way to give back, and only requires 1-2 hours of your time. Experiments include CO_2 to the Rescue, Curious Crystals, Mystery of M&Ms, Thermochemistry: *Exothermic and Endothermic Chemical Reactions, and Glow it Up: The Chemistry of Luminol.* All are age-appropriate and volunteers are provided with instructions on how to support in the classroom prior to your scheduled volunteer day.

For more information, contact Cyndi Roberson, Director of Corporate Relations, at (973) 947-4880 ext. 516 or visit the website to register for the upcoming school year: **https://www.students2science.org**.

SEMINAR SPEAKERS WANTED

The New York Section of the ACS is in search of speakers that we can add to our Speakers Bureau database of interested local area speakers who are available for Section-wide seminars and symposia. If you have an area of research or interest that would provide an interesting talk appropriate for our Section members, and would like to be included in our Speakers Bureau, please contact the New York Section Office at (516) 883-7510 or send an email to **njesper1@optonline.net** with the following information that will be posted on the Section's website: your name, affiliation, a title, and 5-6 words briefly summarizing your area of specialty. We look forward to hearing from you about topics that you wish to share with our other members!

In the News

NEWS AT IU BLOOMINGTON

Building a Beter Salt Trap: IU Researchers Synthesize a Molecular 'Cage' to Trap Chloride

*New molecule could help reduce growing level of salt contaminants flowing into fre*shwater streams and lakes across the U.S.

BLOOMINGTON, Ind. — Indiana University researchers have created a powerful new molecule for the extraction of salt from liquid. The work has the potential to help increase the amount of drinkable water on Earth.

Built using chemical bonds previously regarded as too weak, the new molecule is about 10 billion times improved compared to a similar structure created over a decade ago at IU. The molecule's design is reported today in the journal Science.

“If you were to place one-millionth of a gram of this molecule in a metric ton of water, 100 perc’nt of them will still be able to capture a salt," said Yun Liu, who led the study as a Ph.D. student in the lab of Amar Flood, the James F. Jackson Professor of Chemistry and Luther Dana Waterman Professor in the IU Bloomington College of Arts and Sciences' Department of Chemistry.

The molecule is designed to capture chloride, which is formed when the element chlorine pairs with another element to gain an electron. The most familiar chloride salt is sodium chloride, or common table salt. Other chloride salts are potassium chloride, calcium chloride and ammonium chloride.

At the same time that the human population continues to grow, the seepage of salt into freshwater systems is reducing access to drinkable water across the globe. In the U.S. alone, the U.S. Geological Survey estimates about 272 metric tons of dissolved solids, including salts, enter freshwater streams per year. Contributing factors include the chemical processes involved in oil extraction, the use of road salts and water softeners, and the natural weathering of rock. It only takes one teaspoon of salt to permanently pollute five gallons of water.

The new salt-extraction molecule created at IU is composed of six triazole "motifs" — five-membered rings composed of nitrogen, carbon and hydrogen -- w’ch together form a three-dimensional “cage" perfectly shaped to trap chloride. In 2008, Flood's lab created a two-dimensional molecule, shaped like a flat doughnut, that used four triazoles. The two extra triazoles give the new molecule its three-dimensional shape and 10 billionfold boost in efficacy.

The molecule is also unique because it binds chloride using carbon-hydrogen bonds, previously regarded as too weak to create stable interactions with chloride compared to the traditional use of nitrogen-hydrogen bonds. Despite expectations, the researchers found that the use of triazoles created a cage so rigid as to form a vacuum in the center, which draws in chloride ions.

By contrast, cages with nitrogen-hydrogen bonds are often more flexible, and their vacuum-like center needed for chloride capture requires energy input, lowering their efficiency compared to a triazole-based cage.

"If you were to take our molecule and stack it up against other cages that use stronger bonds, we're talking many orders of magnitude of performance increase," Flood said. "This study really shows that rigidity is underappreciated in the design of molecular cages."

The rigidity also enables the molecule to retain its shape after the central chloride has been lost, compared to other designs that collapse under the same circumstances due to their flexibility. This gives the molecule greater efficacy and versatility.

Lastly, the work is reproducible. The first molecule took nearly a year to synthesize, said Liu, who was shocked to discover that the crystals required to confirm the molecule's unique structure had formed after the experiment was left alone in the lab for several months -- a surprising occurrence since that process typically requires careful monitoring. Later, Wei Zhao, a postdoctoral researcher in Flood's lab, was able to re-create the molecule in a span of several months.

The formation of the crystal represented a "eureka" moment, proving that the molecule's unique design was actually viable, Liu said.

The final author on the study is Chun-Hsing "Josh" Chen, an associate scientist at the IU Molecular Structure Center at the time of the study, who confirmed the molecule's structure using X-ray crystallography. Liu is currently a postdoctoral research associate at the University of Illinois at Urbana-Champaign.

This work was supported in part by the U.S. Department of Energy. A pa tent application on the work has been filed byU's Innovation and Commercialization Office.