

# THE Indicator

MAY 2019

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## **Christopher J. Welch** **Lifetime Achievement Awardee**



*See article on page 5.*

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## THIS MONTH IN CHEMICAL HISTORY

Harold Goldwhite, California State University, Los Angeles • [hgoldwh@calstatela.edu](mailto:hgoldwh@calstatela.edu)

You must have noticed that this year our community is celebrating the 150th. anniversary of the publication of Mendeleev's version of the periodic table, that most iconic of all symbols of chemistry. (I have a tea-towel version, on fine linen, prominently displayed in my home.) There have been many excellent short articles about the genesis and history of the Table this year, and my UCLA colleague, Eric Scerri, has written a superb book on the topic: "The Periodic Table: Its Story and Its Significance", 2006. Surprisingly one of the best articles on the subject published this year that I have read appeared in the March 2nd. 2019 issue of "The Economist" in the Science and Technology Section. The uncredited 4 page article, entitled "The periodic table: The heart of the matter" is adorned with a long-form Table; a copy in Russian of Mendeleev's original table: a splendid portrait of Mendeleev with a sly reference to the immortal song of Tom Lehrer (There's antimony, arsenic, aluminum, selenium ...); and a pictorial rendering of s, p, d, and f orbitals!

The article starts with Lavoisier who, in his 1789 textbook of chemistry, published the first comprehensive list of chemical substances. The fact that this list included caloric (heat) and light does not diminish its significance. Following a mention of Proust's view of constancy of composition and Dalton's atomic theory reinforced and symbolized by Berzelius, the proliferation of new elements in the early 19th. Century, due in large measure to electrochemistry, almost demanded some way of organizing this profusion. Dobereiner in 1829 noted some remarkable numerical relationships among chemically similar elements like sulfur, selenium, and tellurium; or chlorine, bromine, and iodine. And in 1864 poor John Newlands, an English analytical chemist, almost invented the periodic table with his Law of Octaves (similar chemistry periodically for every eighth element). Poor, because he was scorned and ridiculed by his chemical colleagues and for a while withdrew from the fray. Many years later the Royal Society honored both Mendeleev and Newlands simultaneously with the award of medals.

And so to Mendeleev. Surprisingly, for this is on the whole a really good review of the history of the table, there is no mention in it, or in a number of other articles I have read this year, of the virtually simultaneous inventor of the Table, Lothar Meyer. Mendeleev and Meyer have some striking similarities in their careers. Both young chemists worked in Bunsen's laboratory, one of the foremost research laboratories in the world. Both attended the Karlsruhe Congress of 1860, the first international gathering of chemists. Both apparently heard Cannizzarro's lecture on how to rationalize atomic weights by adhering to Avogadro's Law – something Cannizzarro developed as he planned his own chemistry teaching. Both returned to teaching positions determined to find a logical way to organize their presentations on the chemistry of the elements. Mendeleev published first, while at the same time Meyer shared his Table with only a few colleagues and published subsequently. So often fame depends on getting there first! Meyer's publications had some unique features, for example an illustration of periodicity in some physical properties of the elements, such as atomic volume.

Over the decades the Periodic Table has faced challenges and prevailed. For many years Mendeleev refused to believe in the existence of the inert gases, He, Ne etc., now called the noble gases after the initial discovery of the chemistry of xenon, because there was apparently no place for them in "his" Table. After Ramsay fleshed out the group with the remaining noble gases a new Group was created for them at the right-hand edge of the Table. The lanthanides, and later the actinides, pose a purely logistical problem to this day. Many publications of modern tables simply append these families at the foot of the table (the short form) with an indicator of their true position. Others prefer the long form and that is the one reproduced in this article. Mendeleev's brilliant and bold predictions of the existence and properties of yet undiscovered elements including germanium and gallium helped acceptance of the Periodic Table. Chemistry textbooks of the 1880s include the Table as an expected part of the curriculum and use it, as both Mendeleev and Meyer had hoped, as a unifying device for teaching the chemistry of the elements.

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

## May Calendar

### NEW YORK SECTION

**Friday, May 3, 2019**

Hudson-Bergen Chemical Society  
See pages 10-11.

**Friday, May 3, 2019**

Long Island Subsection  
19th Annual Chemistry Challenge  
See pages 11 and 12.

**Wednesday, May 22, 2019**

Organic Topical Group  
See page 11.

*also*

**Tuesday, June 4, 2019**

New York Nanoscience Discussion Group  
See page 14.

**Friday, June 7, 2019**

**Friday, September 13, 2019**

**Friday, November 15, 2019**

Board of Directors Meetings  
See page 10.

**Tuesday, September 24, 2019**

Biochemical Topical Group  
See page 14.

**Saturday, October 5, 2019**

Science Café - The Periodic Table People  
See page 15.

### NORTH JERSEY SECTION

**Thursday, May 9, 2019**

Chem Tag  
See page 6.

**Tuesday, May 14, 2019**

Executive Meeting and Awards Dinner  
See page 6.

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

**April 28, 2019**

## To All Potential Advertisers

*The Indicator* is actively seeking new advertisers from academia, industry, suppliers and service groups.

Effective with the January 2019 issue our new rates, which we believe you will find both attractive and competitive, will apply.

For a copy of our new rate sheet and reply form, please e-mail the editor at [indicator.linda@gmail.com](mailto:indicator.linda@gmail.com).

To advertise in the **June 2019** issue, the deadline for e-mailing both your reply form and your high res (300 dpi) ad, in either jpeg, tiff, or pdf format, is **April 28, 2019**.

## North Jersey Lifetime Achievement Awardee

Christopher J. Welch is a principal with Welch Innovation, LLC, an independent research and consulting firm. He serves as the Executive Director of the Indiana Consortium for Analytical Sciences and Engineering (ICASE), a joint venture between Purdue, Notre Dame and Indiana University. Chris also serves as a member of the Scientific Advisory Board for Snapdragon Chemistry, Inc. and Enantiosense, LLC. Dr. Welch has worked in a variety of fields within the chemical industry, including discovery synthesis of agrochemicals (Velsicol-Sandoz), development of reagents for improved immunodiagnostic assays (Abbott Laboratories), development and commercialization of chromatographic stationary phases, reagents and enantioselective catalysts within a small chemical business environment (Regis Technologies) invention and application of new purification, analysis and high throughput experimentation technologies for pharmaceutical process research (Merck & Co.) and as a Science Advisor for the US FDA. While at Merck, Dr. Welch created and administered Merck's postdoctoral research fellows program and managed a multi-million-dollar fund and research network that identified, evaluated and acquired more than 300 new enabling technologies for pharmaceutical discovery and development. Dr. Welch has authored more than 250 scientific publications and patents. He is co-founder of the journal, *Enantiomer*, a member of the editorial advisory board for the journals, *Chirality*, *Journal of the Korean Chemical Society*, *Chemistry World* and *ACS Central Science*. Chris is past chair of the ACS Division of Organic Chemistry (ORGN), a member of the Executive Committee for the International Symposia on Chirality and the PittCon Program Resource Team, vice-chair of Pacificchem 2020 and co-founder of the Enabling Technologies Consortium (ETC). Honors and awards include the NJCG Award for Excellence in Chromatography (2004), the PACS Activated Carbon Hall of Fame award (2007), MRL Presidents Award for Environmental Achievement (2009), Microsoft Life Science Innovation Award (2010), Fellow of the American Chemical Society (2010), Fellow of the American Association for the Advancement of Science, AAAS (2013) the Chirality Medal (2015), the University of Nebraska Chemistry Industrial Award (2016) the EAS Award for Outstanding Achievement in Separation Science (2017) and the Uwe Neue Award in Separation Science (2019).

## North Jersey Meetings

<https://www.njacs.org>

### NORTH JERSEY EXECUTIVE COMMITTEE MEETING

Section officers, councilors, committee chairs, topical group chairs, and section event organizers meet regularly at the Executive Committee Meeting to discuss topics of importance to running the section and representing the membership. All ACS members are welcome to attend this meeting and to become more involved in section activities.

**Date:** This month's Executive Meeting is replaced by the Awards Dinner on Tuesday, May 14, 2019

**Time:** See article in right-hand column  
**Place:** Lenfell Hall, The Mansion  
 Fairleigh Dickinson University  
 Florham Campus  
 285 Madison Avenue  
 Madison, NJ 07940

(See <https://www.njacs.org> for more details.)



### CHEM TAG

**Best of 2018-2019**

Join us for a year of the best lessons from the school year. Help out your fellow chemistry teachers by sharing your favorites.

**Date:** Thursday, May 9, 2019

**Times:** 4:15 - 6:15 PM

**Place:** Livingston High School

*For all details, see flyer on page 7.*



### NORTH JERSEY SECTION ACS AWARDS AND RECOGNITION DINNER

Join us as we honor our volunteers and students.

Directions to campus and a campus map can be found at <https://tinyurl.com/j6j9nsl>.

Reservations: Please make your reservation at our website, <https://www.njacs.org> prior

to **Tuesday, May 7, 2019.**

Questions: Call (973) 822-2575 or e-mail [bhowson@njacs.org](mailto:bhowson@njacs.org)

**Date:** Tuesday, May 14, 2019

**Times:** Social 4:30 PM

Presentation of Certificates of Service to 50, 60 and 70 year members 5:30 PM

Dinner 6:00 PM

Presentation of Awards to

volunteers and students 7:00 PM

**Place:** Lenfell Hall, The Mansion  
 Fairleigh Dickinson University  
 Madison, NJ 07940

**Cost:** \$35.00

Congratulations and a special thank you are in order to the members of the North Jersey Local Section who have reached 50, 60, and 70 years of service.

#### 50 Year Members

Mr. Edward Roy Aig  
 Dr. Yair Alroy  
 Mr. Rafael Baez  
 Ms. Michel Bitritto  
 Dr. Francis R. Cala  
 Mr. Michael L. Caswell  
 Dr. Gregory M. Dobbs  
 Dr. Ronald James Doll  
 Mr. Robert A. Dollinger  
 Dr. Thomas Nicholas Donvito  
 Mr. Rudolf Gaba  
 Dr. Martha Katz Greenblatt  
 Dr. Klaus Grohmann  
 Dr. Sheldon Kavesch  
 Dr. Larry Alan Kaye  
 Dr. Sheldon Jerrold Kirsch  
 Mr. Stephen Charles Kolakowsky  
 Mr. John George Ondeyka  
 Dr. Alan Mark Rosan  
 Dr. T. Richard Schmidt  
 Dr. Doris P. Schumacher  
 Ms. Helene Skidanow-Lontka  
 Dr. William J. Sullivan  
 Dr. Maria Teresa Vogt  
 Dr. Edward H. Waysek  
 Mr. William Joseph Zak  
 Dr. Theresa Julia Zielinski

#### 60 Year Members

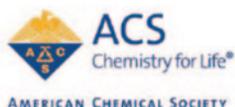
Dr. Michael Mark Blumenthal  
 Dr. Richard W. J. Carney  
 Dr. Noal Cohen  
 Mr. Robert F. Czaja  
 Dr. Robert T. Dahill Jr  
 Mr. Donald W. Dahringer  
 Mr. Frederick R. Dammont  
 Dr. Michael H. Fisch  
 Dr. Edward J. Glamkowski

Dr. Stephen M. Greenberg  
 Mr. James M. Hanrahan  
 Dr. Joseph A. Hoffman  
 Dr. Margaret Schormuller Hughes  
 Dr. Howard S. Kimmel  
 Dr. Patricia M. Lorenz  
 Dr. Alexander MacDonald, Jr.  
 Dr. Michael W Miller  
 Dr. Helmut Mrozik  
 Mr. Charles G. Shalotsky

Dr. Robert J. Steltenkamp  
 Dr. Martin M. Tessler  
 Dr. Sidney Toby  
 Dr. Franz Wenger

#### 70 Year Members

Mr. Richard Green  
 Dr. Robert P. Hamlen  
 Mr. Raymond C. Huber  
 Mr. Neal Theodore Levin  
 Dr. Morris Tanenbaum



**ChemTAG - Thursday, May 9, 2019**  
**4:15 - 6:15 PM**  
**Livingston High School**  
 30 Robert Harp Drive - Livingston, NJ 07039

**You're Invited:**  
 Local area teachers invited to form an inter-district group focused on improving chemistry education and alignment to NGSS standards, practices, and concepts.

**Topics:**  
 Best of 2018-2019

- Join us for a swap of the best lessons from the school year. Help out your fellow chemistry teachers by sharing your favorites

**RSVP:**  
 Abbie Young: [byoung@livingston.org](mailto:byoung@livingston.org)  
**Refreshments Provided**

## NORTH JERSEY NMR TOPICAL GROUP

### March Meeting

The NMR Topical Group held its March monthly seminar on March 20th at Frick Chemistry Laboratory in Princeton University. Prof. Morten Kjærulff Sørensen from Aarhus University, Denmark, presented an encore speech after his visit at PittCon 2019. Currently, Prof. Sørensen is an assistant professor at the Department of Engineering at Aarhus University, working on the development of cost-efficient NMR technology for applications in industry and science, which is in close collaboration with the Danish company NanoNord A/S. He obtained the PhD degree in 2014 in NMR spectroscopy at the Interdisciplinary Nanoscience center (iNANO) at Aarhus University, Denmark from the group of Prof. Niels Chr. Nielsen. During his PhD-studies, Prof. Sørensen initiated the development of the NMR sensor which he has had fully focus on since that time.

During the talk, Prof. Sørensen presented a variety of industrial applications using the invented 1.5T Tveskaeg benchtop NMR. The cases include on-line monitoring of catalytic fines in heavy fuel oil onboard ships using  $^{27}\text{Al}$  NMR, quantification of nutrients in agricultural manure by  $^{14}\text{N}$ ,  $^{17}\text{O}$ ,  $^{31}\text{P}$  and  $^{39}\text{K}$  NMR and monitoring of boron and lithium in reactor coolant at power plants by  $^{11}\text{B}$ ,  $^{10}\text{B}$  and  $^7\text{Li}$  NMR. Prof. Sørensen also showed the powerfulness of the benchtop NMR in wide-line solid-state NMR experiments by demonstrating the capability of acquiring  $^{14}\text{N}$  spectrum of  $\text{KNO}_3$  spanning more than 1 MHz. By introducing interleaved sampling of frequency slices, a highly efficient acquisition is achievable with a sensitivity comparable to high-field NMR experiments.

Audience from academia as well as industry participated the event and show different interests in the presentation. This is the first time NMR TG invited a speaker outside of U.S. to join the monthly meeting series. By doing this we hope to increase the impacts of a local ACS topical group and to reach out to a broader NMR scientific community.



Snapshot of Prof. Sørensen's presentation

*(Photo courtesy of Qi Gao)*

## April Meeting

The NMR Topical Group held its April meeting on Wednesday, April 17th at Rutgers University. Prof. Brian J. Stockman from Adelphi University, presented the NMR-based activity assays to identify and validate drug fragment leads.

### Title: NMR-based Activity Assays to Identify and Validate Fragment Leads Against Two *Trichomonas vaginalis* Enzymes

Speaker: Prof. Brian J. Stockman, Ph.D., M.B.A.  
Department of Chemistry  
Adelphi University



**Abstract:** Trichomoniasis is the most prevalent, non-viral sexually transmitted disease in the world. It is caused by the parasitic protozoan, *Trichomonas vaginalis*, which is incapable of *de novo* synthesis of purine and pyrimidine rings. Since current 5-nitroimidazole drug treatments show common repeat infections due to increased resistance by the parasite, the development of a novel drug therapy is necessary. Two nucleoside salvage pathway enzymes, adenosine/guanosine nucleoside ribohydrolase and uridine nucleoside ribohydrolase, represent distinct, druggable targets. Inhibition would prevent the production of free nucleobases which the parasite requires. 1H and 19F NMR-based activity

assays were used to screen the two enzymes against a 2,000-compound fragment diversity library, resulting in the identification of distinct inhibitor classes. Representative fragments from each structural class were then subjected to two independent counter screens in order to confirm reversible, target-specific inhibition. A ten-fold jump dilution assay proved that the inhibitors were reversible, while the addition of Triton X-100 detergent validated target-specific activity. The NMR-based activity assays were very useful for these counter screens since they provide direct observation of substrate, product, and inhibitor resonances simultaneously. Molecular modeling in combination with structure-activity relationships is being used to guide ongoing medicinal chemistry efforts to discover nM inhibitors of each enzyme for *in vitro* target validation.

## NORTH JERSEY ACS UNDERGRADUATE TRAVEL AWARDS

Each year North Jersey Section ACS awards up to four travel grants of \$600 each to aid undergraduate students in presenting papers or posters at ACS National Meetings. Applicants must be a member of the North Jersey Section and submit a completed application. Selection is based on scientific merit of the paper. More information may be found at: <http://www.njacs.org/ug-travel-grants>.

**Sarah Costa** and **Gisselle Rojas**, seniors at Drew University, presented their research posters at the recent ACS National Meeting in Orlando, FL. Both young women, accompanied by Professor Mary Ann Pearsall, found the experience rewarding and extremely beneficial to their impending career in chemical research.

Sarah noted, "Attending the ACS as an undergraduate was a once in a life time experience. I was so excited to present my own work to fellow students and professors. Additionally I was so thrilled to hear about

other work that is being done all over the United States and be able to ask questions in person. These talks allowed me explore research areas I may want to pursue in my future. I am so grateful for the grant that was given to me, because without it I would not have been able to have this amazing experience."

Gisselle commented, "I am grateful to have been awarded the North Jersey ACS travel grant because it gave me the opportunity to present my research at the ACS National meeting to scientists from all over the nation. As an undergraduate student, attending the ACS National meeting was an incredible experience and being exposed to many interesting research projects made me more excited to pursue a career in chemistry.

Applications for the two remaining travel grants are currently being accepted for the ACS National Meeting in San Diego, CA, August 25-29, 2019. The **deadline is June 1, 2019**. Please see the website for details.

**(Awardee pictures on page 29)**

## New York Meetings

<https://www.newyorkacs.org>

### ACS, NEW YORK SECTION BOARD OF DIRECTORS

#### MEETING DATES FOR 2019

There will be no Board of Directors meeting in May.

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](mailto: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, June 7, 2019 (Board of Directors Meeting), St. Johns University, NY

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

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

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

<https://www.NewYorkACS.org>

#### St. John's University

8000 Utopia Parkway, Queens, NY

#### Directions

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

#### Adelphi University

1 South Avenue, Garden City, NY 11530

#### Directions

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

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

#### The 21st Annual Undergraduate Research Symposium

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

This year's symposium also features the lecture:

#### Portable Biosensing Devices for Food Quality Monitoring

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

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

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

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

**Date:** **Friday, May 3, 2019**

**Times:** Poster Session - 5:00 PM

Dinner - 6:00 PM

Awards and Lecture - 7:00 PM

**Place:** Riverside Café  
Fairleigh Dickinson University  
Teaneck, NJ 07666

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

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

## LONG ISLAND SUBSECTION

The 19th Annual Chemistry Challenge

**Date:** **Friday, May 3, 2019**

*For more information, see flyer on page 12.*



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

**Chemical Biology Discussion Group  
Year-End Symposium**

**Organizers:** Jason Imbriglio, PhD

Merck

Sara Donnelly, PhD

The New York Academy of  
Sciences

Sonya Dougal, PhD

The New York Academy of  
Sciences

**Speakers:** Emma R. Parmee, PhD

Merck

David Spiegel, MD, PhD

Yale University

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

**Date:** **Wednesday, May 22, 2019**

**Time:** 1:00 – 5:30 PM

**Place:** The New York Academy of  
Sciences

7 World Trade Center

250 Greenwich Street – 40th Floor

New York, NY 10007

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

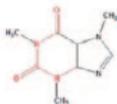
For more information and to register for the event, go to: [www.nyas.org/ChemBio2019](http://www.nyas.org/ChemBio2019)

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

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**THE 19<sup>TH</sup> ANNUAL  
CHEMISTRY CHALLENGE**

18  
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**Come and Cheer on the local college student representatives as they match up their Chemistry knowledge against each other. Prizes will be awarded to 2yr and 4yr institution winners!**

**When:** Friday, May 3, 2019

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

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

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

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

**Contact:** Dr. Daniel Resch ([daniel.resch@ncc.edu](mailto:daniel.resch@ncc.edu))

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

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

**All Are Welcome**



American Chemical Society Long Island Subsection  
[http://www.newyorkacs.org/sub\\_island.php](http://www.newyorkacs.org/sub_island.php)

## 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](mailto:hessytaft@hotmail.com).

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



## CANDIDATES FOR THE NEW YORK SECTION 2019 ELECTIONS

At the January 2019 Section-wide Conference, the Nominating Committee presented the candidates for office for the 2019 elections. The biographies of the candidates will be posted on the New York Section website at [https://www.NewYorkACS.org/2019\\_Candidates.pdf](https://www.NewYorkACS.org/2019_Candidates.pdf).

The Board of Directors extends a sincere thank you to the following candidates for accepting the nomination to run for office, and encourages ACS New York Section members to vote for these worthy candidates.

Electronic ballots will be sent to the membership in mid-April using SurveyMonkey and voting will be conducted according to ACS guidelines for confidentiality and security. If your e-mail address has changed,

please update it on the ACS website. If no e-mail address is associated with your membership number, a paper ballot will be sent to you automatically. Members that do have an e-mail address associated with their membership number will be asked in a survey if they prefer a paper ballot.

To receive all electronic messages from your New York Section, please be sure that your e-mail account will accept messages from [chair2019@newyorkacs.org](mailto:chair2019@newyorkacs.org) or [njesper1@optonline.net](mailto:njesper1@optonline.net) or [jespersn@stjohns.edu](mailto:jespersn@stjohns.edu). Also, if you have opted-out of SurveyMonkey in the past, please opt-in by **April 15, 2019** for the election.

Members requesting paper ballots will receive them by **May 1, 2019**. If any member does not receive voting materials by May 1, please contact the New York Section Office at (516) 883-7510 or [njesper1@optonline.net](mailto:njesper1@optonline.net)

The Candidates are:

**Chair-Elect for 2020** (Vote for 1)

Rita Upmacis (Pace University)

Yu Feng Wei (New Jersey City University)

**Treasurer for 2020 and 2021** (Vote for 1)

Frank Romano (Agilent Technologies)

**Director-at-Large for 2020** (Vote for 3)

Donald Clarke (Fordham University)

Rolande Hodel (AidsFREE Africa)

Kevin Kolack (CUNY - Queensborough Community College)

Sabesan Yoganathan (St. John's University)

**Councilor for 2020-2022** (Vote for 3)

Ronald D'Amelia (Hofstra University)

Alison Hyslop (St. John's University)

Neil Jespersen (St. John's University)

Hiroko Karan (CUNY - Medgar Evers College)

Frank Romano (Agilent Technologies)

Justyna Widera-Kalinowska (Adelphi University)



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## NEW YORK NANOSCIENCE DISCUSSION GROUP

Hosted by the New York University  
Department of Chemistry

Speakers to be announced

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

**Date:** Tuesday, June 4, 2019

Times: Refreshments at 7:00 PM

Science at 7:30 PM

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

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

Topical Group History:

<https://www.nyu.edu/projects/nanoscience>



## BIOCHEMICAL TOPICAL GROUP – JOINT MEETING WITH THE NYAS BIOCHEMICAL PHARMA- COLOGY 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 non-member  
Registration Category and use  
the Priority Code “ACS”.

Early Bird Discounted Registration  
Deadline: **Friday, August 16, 2019.**

Abstract Submission Deadline: **Friday,  
August 2, 2019.**

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>

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

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

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

What? Science Café.

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 10**, submit your team's (3 persons minimum, including your faculty member) intent to participate along with your preferred five Periodic Persons to [chemsource.info@gmail.com](mailto: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](mailto:chemsource.info@gmail.com) with name of team leader, institution, and email address):

At. No.	Person
62	Vassili Samar-sky-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

On March 7, 2019 we held a Science Café at the Stone Manor Restaurant in Hawthorne, NY. The discussion leader was Dr. Joseph P. Krumpfer, Assistant Professor of Polymer and Inorganic Chemistry in the Department of Chemistry & Physical Sciences of the Dyson College of Arts and Sciences at Pace University in Pleasantville, NY. Dr. Krumpfer led a discussion on “Plastics: The Good, the Bad and the Ugly.” First, Dr. Krumpfer gave a brief introduction to plastics and polymers. The “Good” are the many benefits we derive from plastics: low cost, low weight (important, say, for improving gas mileage in cars by replacing metals by plastics), convenience, high stability. Much of the “Bad” results from aspects of the “Good”. For example, polymers’ good stability means that they don’t degrade to a great extent in the environment after disposal (exacerbated by synthetic polymers, many of which, because they are not found in nature, have little biodegradability). Further, in the environment many discarded plastics, although chemically stable, are not mechanically stable. They break into ever smaller pieces, ending up as “microplastics”. In water, these may be eaten by fish and, ultimately, by ourselves. Some of the chemicals in them, say, plasticizers, may be physiologically harmful. In addition, bacteria and other microorganisms may adhere to microplastics. Finally, marine filter feeders may take these in as food and, therefore, eat less true food and become malnourished. The “Ugly” is the question of how do we, as a society, address the “Bad” without excessively reducing the “Good”. How much of the convenience, low cost, economic activity – jobs, etc. – related to the plastics industry are we willing to give up? Further how much are we willing to spend, both monetarily and in terms of work that we, as consumers could do, such as not only recycling, but sorting before recycling. Some problems may be mitigated by switching to reusable articles, such as canvas grocery bags and reusable water bottles. Chemists may be able to help by developing new, or modified natural, polymers that don’t create the same problems, for example polymers that are rapidly biodegradable and, even if they end up as microplastics, may actually serve as food. During the talk, there was considerable audience interest, participation and discussion.

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



The WCS Board Members attending: Joan Laredo-Liddell, Paul Dillon, Rolande Hodel, Joseph Krumpfer, Peter Corfield and Jean Delfiner.

*(Photo courtesy of Paul Dillon)*

After the café, Dr. Krumpfer and several of the attendees continued the discussion at a delicious and enjoyable dinner at the Stone Manor.

We would like to thank Dr. Peter Corfield, who saw to the arrangements for this Science Café and, of course, to Dr. Krumpfer who led our discussion.



## **WESTCHESTER CHEMICAL SOCIETY**

On March 28, 2019 Dr. Rolande Hodel spoke on “Chemistry in Cameroon: Quality Control of Pharmaceuticals & Medical Diagnostics”. Note that this talk had originally been scheduled for November 15, 2018 but had to be rescheduled because of inclement weather.

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

Her talk was based on her more recent work in Cameroon. Although AIDSfreeAFRICA has been working in Cameroon since 2005, the organization has only recently decided to tackle the problems that arise because of the general lack of basic laboratory services in the African nation. AIDSfreeAFRICA is often approached and asked to take samples of pharmaceutical drugs to the USA and test them for their composition and/or quality. The import of pharmaceuticals in Cameroon is largely unregulated. Much of the imported drugs are brought into the country from Nigeria by salespeople who buy and sell drugs with little regard for the origin of the drugs. Additionally, the salespeople are not educated on how to transport or store drugs properly. It is likely that the main problem with drug quality in Cameroon is degradation due to heat and humidity rather than the counterfeit drugs. However, without the ability to quality control drugs on a large scale, it is hard to say. Dr. Hodel discussed the efforts underway to bring quality control to Cameroon. She noted that AIDSfreeAfrica currently has 2 employees, 4 board members, 100 volunteers, 600 donors and 4800 Facebook friends. She noted several of the people who work with AIDSfreeAfrica – Elliot Bay, a process chemist, Maimunat Alex-Adeomi, an MD and Sherri Hutchinson, a web designer. She also noted that they have a pressing need for a secretary and a lawyer. Currently, much of their work is directed toward malaria, which can be devastating in Cameroon, especially

*(continued on page 18)*

## WESTCHESTER CHEMICAL SOCIETY

(continued from page 17)

in and after the rainy season. Work in Cameroon is fraught with many difficulties. First, electric supply is erratic, with outages and voltage fluctuations that can wreak havoc with instruments and computers. In many areas, roads are unpaved generating considerable dust, again causing equipment difficulties. Finding trained personnel can be difficult – there is a “chicken and egg” problem. Businesses need trained people but trained people cannot often find the jobs they need and, so, emigrate. Thus, AIDSfreeAfrica's work is guided by the principles of self-sustainability and active participation by the people who the intervention must benefit. They look for win-win situations and opportunities where small contributions create ripple effects that lead to extraordinary and lasting changes in people's lives. Some foreign-owned pharmaceutical companies have tried to operate in Cameroon but often unsuccessfully. AIDSfreeAfrica is currently working, under a ten-year collaboration agreement, with IRAD, Cameroon's Institute of Agricultural Research for Development in the capital, Yaoundé, IRAD is supplying a space to house AIDSfreeAfrica's pharmaceutical quality control lab, an office and guesthouse for visiting scientists, and they are working to improve the electric supply and other facility infrastructure. AIDSfreeAfrica is working to improve the diagnostics for, and prevention of, malaria, which, in Cameroon is often correlated with AIDS. For example, they are encouraging the use of bed nets for window screens, to keep mosquitos out of houses rather than just beds. There are four common strains of malaria in Cameroon, which respond best to different treatments. They are deploying diagnostics with good sensitivity, specificity, speed, cost and ease of operation.

There was considerable discussion and questions both during and after the talk, which was extended past the typical time of WCS talks by at least 50%. In addition to our usual audience, several people from AIDSfreeAfrica attended the talk. Following the talk, which was held at the Westchester Community College in Valhalla, NY, Dr. Hodel and several of the attendees enjoyed a dinner together at a nearby restaurant. The photos below are of Dr. Hodel and her coworkers at AIDSfreeAfrica, and with the other WCS board members who attended the meeting.



**Adele Herman, Ellen Engelson, Rolande Hodel, Yoo Shine Tanai, Sr. Bette Ann Jester and Bernice McCann (from AIDSfreeAfrica).**



**Peter Corfield, Jody Reifenberg, Paul Dillon and Rolande Hodel (from the WCS Board)**

*(Photos courtesy of Paul Dillon)*

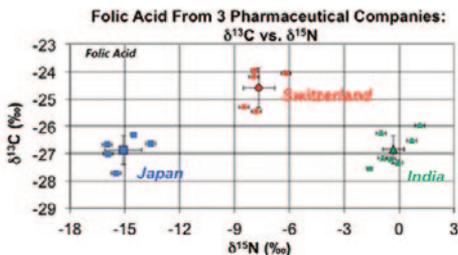
## NEW YORK SECTION SOCIETY FOR APPLIED SPECTROSCOPY



### An Overview of Intellectual Property Protection of Biopharmaceutical Compounds via Natural-Abundance Stable Isotopes.

By Debbie Peru

The March 2019 meeting of the New York (New Jersey) Regional Section of the Society for Applied Spectroscopy (NYSAS) was held on March 27th at the Horiba Optical Spectroscopy center in Piscataway, NJ. The guest speaker was John P. Jasper, Ph.D. Chief Scientific Officer of Molecular Isotope Technologies LLC / Nature's Fingerprint® Authentication. Niantic, Connecticut (<https://www.NaturesFingerprint.com>).



Authentication of Folic Acid Source: Naturally occurring isotopes intrinsic to all raw materials create a fingerprint that is used to identify the manufacturer and country of origin.

John P. Jasper is an Analytical Organic and Stable-Isotope Chemist who has worked in marine paleochemistry and in pharmaceutical sciences. He received his B.A. in Geophysical Sciences and Biological Sciences from The University of Chicago in 1981. He earned his Ph.D. from MIT and Woods Hole Oceanographic Institution in marine organic chemistry in 1988 where he assessed the quantitative relationship between paired specific biomarker compounds and contemporaneous carbon-isotopic of bulk organic matter for organic geochemical purposes. He was a Postdoctoral Fellow and Scientist at the Department of Chemistry at Indiana University at Bloomington from 1988-1994 where he employed the newly-developed gas chromatograph / isotope-ratio mass spectrometer (GC-IRMS) to reconstruct paleo-chemical  $\text{CO}_2$  levels. He served as an analytical organic chemist at Pfizer from 1994-1997. Since then, he founded and serves as the CSO of Nature's Fingerprint/MIT LLC. Last year, Dr. Jasper was elected as a Fellow of The Explorers Club for that work on the global greenhouse effect spanning the last 500 Myr.

All chemical compounds have distinctive ratios of stable isotopes. Regional variations in naturally occurring isotopes provide an intrinsic way to authenticate manufacturers products and processes. "Every batch of manufactured product represents a slice of nature". Local and regional variations in raw materials and processes generate unique isotopic ratios that can be used to identify the origin of manufacturing. The fingerprint generated for multiple isotopes in products is a highly effective way to identify, track and classify batches based on origin of manufacturer. This analysis can be used to mitigate counterfeiting, diversion, theft patent infringement and liability issues. The presentation included three cases of process authentication: one of false advertising and two of process patent infringement. The presentation also included an overview of Molecular Isotopic Engineering for product identification and of product security, and also for intellectual property considerations.

We had 14 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](mailto: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>.

## LONG ISLAND SUBSECTION

### Events and Programs

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

#### 2019 Spring March Seminar & General Meeting

On the evening of Thursday, March 7, 2019, a total of forty-eight LIACS members and affiliates attended the March Seminar and General Meeting. At the meeting, the Board announced its newly approved “Chemistry History Committee”. As the Chair of the new Committee, Dr. Paris Svoronos introduced the International Year of the Periodic Table (IYPT 2019), and invited all to attend the 2019 LIACS Holiday Seminar, which is planned to commemorate Mendeleev and the 150th birthday of his Periodic Table. The March seminar featured Dr. Shengping Zheng of the Hunter College of CUNY, who gave a well-received presentation and shared his passion for simplifying heterocycle syntheses from quinoids. The heterocycle syntheses are important since about 90% of the new drugs are heterocycles. The audience was much impressed by the approach and results of his research group. Dr. Zheng attended the graduate program at Columbia University, where he conducted his PhD work with Dr. Samuel Danishefsky (2005) and Postdoc with Dr. Ronald Breslow. He joined Hunter College as an assistant professor in 2008 and was tenured and promoted in 2015. Seven members accompanied the speaker to dinner after the seminar at Maria’s Greek Restaurant, Queens, NY. Our special thanks also go to the Queensborough Community College (QCC) Chemistry Department and the following Student Clubs for supporting the Seminar Program and for providing refreshments: STEM Academy, Chemistry Club, QCC Affiliates of the ACS, STEM Research Alliance, Student Health Club, Biology Club, STEM Research Club, and Environmental Sustainability Club.

*More pictures on page 21.*



The LIACS Spring March Seminar featuring Dr. Shengping Zheng of the Hunter College of CUNY.

*(Photos courtesy of Dr. Paul Sideris)*



**The Indicator is posted to the web around the 15th of the previous month at [www.TheIndicator.org](http://www.TheIndicator.org)**



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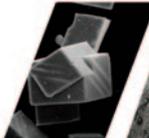
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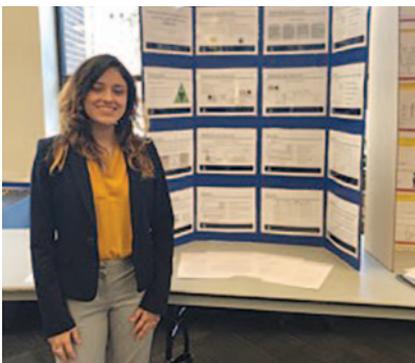
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## NEW YORK SECTION PROJECT SEED

On March 5th and 6th, the following SEED students competed at the Junior Science and Humanities Symposium that took place at Rutgers University. The students are: Joan Almendarez (seed 2), Johan Ayala (seed 1), Emmanuel Diaz (seed 2), Leilani Garcia (seed 2). Joan won 3rd place and will be representing the state of NJ at the national competition that will take place in New Mexico. Joan received a prize of \$1,000 and an all expense paid trip to the national competition. Her mentor is Dr. Judith Barrios. All students belong to the NY Section of ACS. Leilani's mentor is Dr. Elaine Gomez from Columbia University who is a former SEED student herself. Johan Ayala's mentor is Dr. Gerard Parkin from Columbia University. Emmanuel Diaz's mentor is Dr. Basuray from New Jersey Institute of Technology. The coordinator of the NY Section Project SEED is Nadia Makar.

**More pictures on page 23.**





Below are pictures of 2 SEED students who achieved great success. **Emely Urbina** (left), SEED 2 did her research at Rutgers University on the development of organic batteries under the mentorship of Dr. Michele Pavanello. She won gold medals 2 years in a row at the Regional Intel International Science and Engineering Fair.

The 2nd student is **Joan Almendarez** (right), a SEED 2 student, was selected to represent the state at the Junior Science and Humanities Symposium which will take place in New Mexico. She did her research at the Academy for Enrichment and Advancement under the mentorship of Dr. Judith Barrios. Her research topic was on ESSENTIAL OILS AS SUBSTITUTE INGREDIENTS IN DISINFECTING PRODUCTS.



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## Positions Available

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### ACS, NEW YORK SECTION

#### ADMINISTRATIVE COORDINATOR

The New York Section of the American Chemical Society (NYACS) has an opening for an Administrative Coordinator with exceptional administrative and clerical skills. The NYACS is a volunteer organization, the premier membership organization for chemists, chemical engineers, and allied professionals in the New York metropolitan area, and a leader in advancing the public's scientific literacy and appreciation of chemistry.

The Administrative Coordinator reports to the Executive Board of the NY Section, and works closely with all members of the Board of Directors. This is a part-time, contractor position working primarily from home. Hours are generally flexible though certain time commitments are required according to the Board's annual schedule. Local travel to occasional Board meetings and events is required. While the position is year-round, the workload will vary throughout the year, with some times of the year requiring a greater time commitment than others (e.g. annual report to ACS in January, Nichols Symposium in April). The position is expected to start in January 2020, with some training with the previous incumbent in November and December of 2019.

Responsibilities include but are not limited to:

- Coordinate schedule for Board of Directors meetings, held approximately 5 times per year, send meeting notices and minutes, ensure all arrangements made; coordinate Committee meetings as needed (e.g. budget).
- Oversee all arrangements for the January Sectionwide Conference, including notices for publicity, ordering award plaques, ensuring venue and refreshments ordered, programs completed and printed, travel arrangements interactions for invited speakers as needed.
- Create and compile a Section roster which means getting the names of the

chairs of all committees etc. and then contacting them for their members.

- Assisting Board with annual elections, ensuring candidate bios obtained and distributed with ballots to all eligible voting members (elections primarily electronic).
- Make all arrangements for venue and hospitality for the annual Nichols Award Symposium; work with Chair and Chair-elect on invitations, awardee travel, invited speaker travel, serve as prime interface with venue on all contract issues, manage attendee registration.
- Ensure all appropriate communication with ACS completed all time, including election results, annual report, and financial statement.
- Collect all budgets for the Finance Committee and then send a notice to all groups as to their approved budget.
- Collect all annual reports and submit to the chair.
- Oversee all printing projects and engraving of awards.
- Send a letter regarding a Call for Nominations to all USA colleges and universities that have graduate programs.
- Send necessary notices to Indicator and C&E News, re call for nominations, articles about events – OSA, Section Conference, Nichols symposium.

Requirements for the position include:

- Excellent written and oral communication skills;
- Good computer skills and internet access;
- Proficient with Microsoft Office;
- Flexible hours but some evening and weekend work required;
- Excellent time management and organization skills;
- Able to work independently, and able to work with diverse group of professionals;
- Must be able to meet deadlines as required.

For full consideration, submit resume and statement of interest to

[chair2019@newyorkacs.org](mailto:chair2019@newyorkacs.org) by **June 30, 2019**.

## Others

### 2019 TRISTATE CACS ANNUAL SYMPOSIUM



The theme of this year's symposium is "Sustainability in Chemistry: Challenges and Solutions". For over a decade, our annual symposium has a track record attracting R&D leaders and research-oriented business leaders from major pharmaceutical and chemical companies in the Tri-State area as well as in China. Senior R&D leaders from industry (Bristol-Myers Squibb, Johnson & Johnson, Merck, Pfizer, Sanofi, BASF, Dow Chemical, ExxonMobil, Henkel, L'Oréal, Avon, Revlon, IFF, Colgate-Palmolive, ALAM and SINOPEC), distinguished educators from universities (Rutgers, Temple, etc.), Senior Officers from federal agencies (FDA, USPTO, etc.), as well as Presidents of the American Chemical Society, have given keynote speeches at this venue in the past. By showcasing how each institution and the chemical enterprise together benefit our society, the symposium serves as a great channel for advocacy and an educational opportunity for the audience.

CACS- Tristate Chapter is a nonprofit organization that has served the Tri-state region since 1981. Its mission is to provide opportunities of self-development, learning and relationship-building for Chinese chemical professionals from the United States and Greater China in the chemical and pharmaceutical industries. The symposium has, in the past, featured presentations and panel discussions participated by ACS presidents, corporate leaders, entrepreneurs and policy makers on topics ranging from global business and career opportunities, challenges that face the profession of chemistry, healthcare, energy, environmental issues, and the place of chemistry in humanity.

**Date:** Saturday, June 15, 2019

**Times:** 9:00 AM - 5:00 PM

**Place:** Ernest Mario School of Pharmacy  
Lecture Hall  
131, Rutgers University  
Busch Campus  
160 Frelinghuysen Road  
Piscataway, NJ 08854

## 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<sub>2</sub> 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](mailto:njesper1@optonline.net) with the following information that will be posted on the Section's website: your name, affiliation, a title, and 5-6 words briefly summarizing your area of specialty. We look forward to hearing from you about topics that you wish to share with our other members!

## STUDENTS 2 SCIENCE

### National Volunteer Week



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

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

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

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

David Green, Volunteer

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

Alan Cooper, ACS Member  
& S2S Volunteer

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

See you in the lab!

## Call for Applications

### FREDDIE AND ADA BROWN AWARD

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

#### Award Amounts

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

#### Who is Eligible

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

#### Grades

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

#### Letter of Recommendation

Math or Science/Chemistry Teachers or Guidance Counselor

#### Statement

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

#### Selection Criteria

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

#### Transcript

Official transcript required.

#### Financial Need

Not Required.

Applications available on the web:

<https://www.njacs.org/freddieadabrown> or from your school guidance office.

#### Return Application To

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

#### Due Date

Completed Application deadline is **April 30, 2019**.

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

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## Call for Nominations

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### 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](mailto: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.



### THE WILLIAM H. NICHOLS MEDAL AWARD FOR 2020

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

Investigators who have published a signifi-

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

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

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

Questions regarding the nomination procedure should be directed to the ACS, New York Section Office, at [njesper1@optonline.net](mailto:njesper1@optonline.net)



### ACS NEW YORK SECTION'S OUTSTANDING SERVICE AWARD FOR 2019

Each year the New York Section presents the Outstanding Service Award to a very deserving member of the section. Many members of the New York Section provide their time, leadership, talent and educational skills to the New York Section. The tradition of excellence of the New York Section is attributable directly to the cumulative effect of these individuals. Please help the New York Section to recognize the efforts of our colleagues by nominating them for this award. Nominations will be reviewed by a committee consisting of the previous five winners of the award. The Outstanding Service Award for 2019 will be presented at the New York Section's Section-wide Conference in January 2020.

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

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

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## In the News

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### **SYRRIS ATLAS HD REACTOR SYSTEM**

#### **Walk-away Process Development with Syrris' Atlas Reactors**

Researchers at TauRx Therapeutics are using the automation capabilities of the Syrris Atlas HD reactor systems to simplify and accelerate process development for its product pipeline. Based at the company's primary research facilities at the University of Aberdeen, Scotland, the Syrris equipment is an integral part of the quality by design (QBD) process optimization workflow. Process Chemist Scott Clunas explained: "We have been using Syrris' Atlas Syringe Pumps and software for a number of years. This combination of pumps and automation software is very flexible, allowing us to add multiple reagents to a reactor vessel at set intervals, without needing to have somebody at the bench to manually add liquids or swap lines. We have been very happy with the robustness and performance of the pumps, so when we were looking to invest in additional batch reactor systems, Syrris was the logical choice."

"We now have four Atlas HD jacketed reactor systems – set up as two parallel pairs each controlled by a single PC – allowing us to more quickly and easily perform QBD studies for the production of our active pharmaceutical ingredients. Each of these experiments can run for 24 to 48 hours, so it's essential that we can automate the entire reaction. The Atlas reactor systems ensure that each experiment is performed in exactly the same way every time – eliminating the variability associated with manual processes – giving us a very high degree of process control for consistent results and, ultimately, more robust processes," Scott concluded.

#### **Syrris Limited**

Syrris develops laboratory automation products for research and development chemists, and is renowned for its batch chemistry reactors and world-leading flow chemistry systems. It offers advanced lab-scale reactor systems – including the Atlas batch reactor, the fully automated Atlas HD system and the manually operated Orb jacketed reactor platform – as well as the Asia flow chemistry systems. The company's latest innovations include the Orb Pilot

large-scale batch reactor and the Titan continuous flow chemical processing systems.

In recognition of its technological achievements, Syrris received the eastern region's UKTI Best Established Exporter award, as well as the award for the Most Outstanding Export Achievement at the Global Opportunity Conference on International Trade. In 2012, its Asia Flow Chemistry system was the recipient of a prestigious R&D award.

Established in 2001, Syrris is a brand of Blacktrace Holdings Ltd, a world leader in Productizing Science®. The company is based in Royston, near Cambridge, UK, where it employs 125 staff – including 40 chemists and engineers – with offices in the US, Japan, India and Brazil, as well as more than 45 distributors worldwide.

(<https://www.blacktrace.com>)

To find out more about Syrris, please visit <https://www.syrris.com>

**NORTH JERSEY ACS UNDERGRADUATE TRAVEL AWARDS***(continued from page 9)*

Sarah Costa (left) and Gisselle Rojas (right), above, with their posters.

Below, Gisselle Rojas (left) and Sarah Costa (right).

*(Photos courtesy of Bettyann Howson)*

