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Dr. Pamela Kerrigan **2014 Chair** **New York Section**



See Chair's Message on page 13.

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EDITORIAL DEADLINES

February	December 20, 2013
March	January 20, 2014
April	February 20
May	March 20
June	April 20
September	July 20
October	August 20
November	September 20
December	October 20
January 2015	November 20

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January Calendar

NEW YORK SECTION

Wednesday, January 8, 2014

Chemical Marketing & Economics Topical Group
See page 17.

Saturday, January 18, 2014

New York Section 2014 Section-Wide
Conference
See page 14.

Friday, January 24, 2014

High School Teachers Topical Group
See page 18.

Tuesday, January 28, 2014

Biochemical Topical Group
See page 19.

Saturday, February 1, 2014

19th Annual HS Poster Session
See pages 19-20.

Thursday, February 6, 2014

Long Island Subsection
See pages 20.

Tuesday, February 11, 2014

Nanoscience Discussion Group
See page 20.

Wednesday, February 12, 2014

Westchester Chemical Society
See page 20-21.

NORTH JERSEY SECTION

Monday, January 13, 2014

Careers in Transition Group
See page 5.

Wednesday, January 22, 2014

NMR Topical Group
See page 5.

Wednesday, February 5, 2014

Mid-Atlantic Laboratory Robotics Interest
Group
See pages 6-7.

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

**Deadline for items to be included in
the February 2014 issue of
The Indicator is
December 20, 2013**

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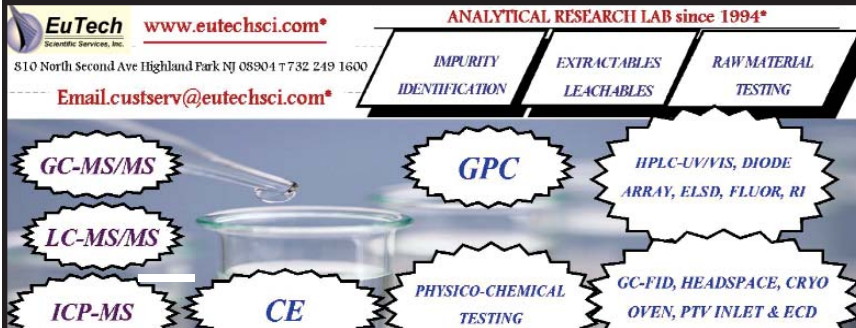
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TESTING

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OVEN, PTV INLET & ECD

ICP-MS

CE



North Jersey Meetings

<http://www.njacs.org>

NORTH JERSEY EXECUTIVE COMMITTEE PLANNING MEETING

Section officers, councilors, committee chairs, topical group chairs, and section event organizers will meet at the Executive Committee Planning Meeting to discuss topics of importance to running the section and representing the membership.

The December 2013 meeting will be held:

Date: Saturday, December 7, 2013

Times: 9:00 AM - 12:00 PM

Place: Fairleigh Dickinson University
Madison, NJ

More information will follow shortly.



CAREERS IN TRANSITION MEETINGS

Job Hunting??

We offer assistance at Students2Science to help members with their job search on the second Monday of each month. Topics at this free workshop are:

- Techniques to enhance resume effectiveness
- Interview practice along with responding to difficult questions
- Networking to find hidden jobs
- Planning a more effective job search

Date: Monday, January 13, 2014

Times: Meeting 5:30 - 9:00 PM
Pizza snack and soda 6:30 PM

Place: Students 2 Science, Inc.
66 Deforest Avenue
East Hanover, NJ

Cost: \$5.00 for pizza and soda

Reservations: at

www.njacs.org/careers.html

A job board and networking assistance is offered at most topical group meetings. Appointments with Bill can be arranged for personal assistance at (908) 875-9069 or billherits@earthlink.net.

See www.njacs.org under the Career tab for Jobs hidden from sight and relevant blogs.

NMR TOPICAL GROUP

Unraveling the Structural Organization of Amyloid with DNP-enhanced MAS NMR Spectroscopy

Speaker: Galia Debelouchina, PhD
Princeton University
Princeton, NJ

Amyloid fibrils are insoluble, non-crystalline protein filaments associated with a number of diseases such as Alzheimer's and Type II diabetes. They can have a functional role in different organisms, and many proteins and peptides have been found to form amyloid fibrils *in vitro*. This talk will present an overview of what is known regarding their molecular structure, focusing in particular on the fibrils formed by an 11-residue segment from the disease-related protein transthyretin (TTR). This system exemplifies our efforts to characterize the hierarchy of structures present in the fibril form, including the organization of the β -strands into β -sheets (tertiary structure), the β -sheet interface that defines each protofilament (quaternary structure), and the protofilament-to-protofilament contacts that lead to the formation of the complete fibril. Our efforts resulted in the measurement of 110 distance and torsion angle constraints (10 per residue) across all levels of structural organization, resulting in the best resolved amyloid fibril structure so far. The structural investigation benefited extensively from the development of dynamic nuclear polarization, a method used to enhance the sensitivity of MAS NMR experiments, and leading to unprecedented gains in signal-to-noise ratios and acquisition times.

Date: Wednesday, January 22, 2014

Times: Dinner 6:00 PM

Seminar 7:00 PM

Place: CABM at Rutgers University
Room 010
679 Hoes Lane West
Piscataway, NJ

Cost: Dinner \$15 (no charge for students / postdoc / retired / unemployed)
No charge for seminar only.

Directions: <http://www.mapquest.com> and enter depicted address

(2 door prizes for # of attendees < 20, 3 door prizes for # of attendees > 20)

Register online at

<http://www.njacs.org/nmr.html>
or via e-mail to gvts@cabm.rutgers.edu

MID-ATLANTIC CHAPTER LABORATORY ROBOTICS INTEREST GROUP

Winter Scientific Meeting - Laboratory Automation - The View From the Bench

The LRIG winter meeting is designed so scientists active in laboratory automation and other advanced technologies can share their work. The meeting opens with a free buffet supper and vendor exposition. There is no charge to attend the meeting although pre-registration is requested. Please go to: <http://my.lrig.org/Home/> and follow the links to the Mid-Atlantic Chapter page. (Note: If you have not done so already, you will need to create a free account before registering.)

The complete menu will be posted on the chapter web page once it is finalized.

Technical Program:

DNA: Not Merely the Secret of Life

Keynote Speaker: Ned Seeman
New York University

We build branched DNA species that can be joined using Watson-Crick base pairing to produce N-connected objects and lattices. We have used ligation to construct DNA topological targets, such as knots, polyhedral catenanes, Borromean rings and a Solomon's knot. Branched junctions with up to 12 arms have been made.

Nanorobotics is a key area of application. We have made robust 2-state and 3-state sequence-dependent devices and bipedal walkers. We have constructed a molecular assembly line using a DNA origami layer and three 2-state devices, so that there are eight different states represented by their arrangements. We have demonstrated that all eight products can be built from this system.

A central goal of DNA nanotechnology is the self-assembly of periodic matter. We have constructed 2-dimensional DNA arrays with designed patterns from many different motifs. We have used DNA scaffolding to organize active DNA components. We have used pairs of 2-state devices to capture a variety of different DNA targets.

Recently, we have self-assembled a 3D crystalline array and have solved its crystal structure to 4 Å resolution, using unbiased crystallographic methods, shown below. We can use crystals with two molecules in the crystallographic repeat to control the color of

the crystals. Thus, structural DNA nanotechnology has fulfilled its initial goal of controlling the structure of DNA in three dimensions. A new era in nanoscale control awaits us.

AUTOMATION OF BLOOD SPOTTING:

Presentation #1: Development & Validation of a LIMS Interface for a Semi-Automated Dried Sample Punch Instrument

Speaker: Heidi Mangus
Bristol-Myers Squibb Co.

The use of dried blood spots (DBS) as a sampling technique for pharmacokinetic/toxicokinetic bioanalysis has been of recent interest in the pharmaceutical industry. Implementation of an automated or semi-automated punching device can greatly increase the throughput of DBS bioanalysis. To increase our DBS capabilities, two semi-automated punch instruments were acquired with the intention to validate the systems for use in a regulated environment. The instruments can accommodate two different punch head sizes and are equipped with light targeting, anti-static, punch confirmation and dust extraction systems, as well as an integrated barcode reader. The instrument software provides opportunities for sample distinction and identification; however, utilizing these features requires labor-intensive, sequence-specific method setup and results in a large volume of single-use files.

In parallel with the validation of the instruments' software, a LIMS interface was developed and implemented to more adequately couple the software's capabilities with our lab's existing workflows. The interface, EZDBS, converts a LIMS output file of the sample analysis sequence into a format compatible with the instrument software. EZDBS allows the analyst to create a unique punching order while maintaining the LIMS sequence order in the assay plate, avoiding potential carryover from the punch head. By coupling the use of EZDBS and the instrument's barcode reader, the resulting output files serve as a sampling audit trail which can be visualized in plate map format. Additionally, EZDBS reduces the amount of front-end time required for method setup, reduces the volume of generated files, and enhances the quality of information captured in the output files. The interface has been successfully used to support both non-clinical and clinical study sample analysis in

drug development. This presentation will discuss the workflow of automated DBS sample analysis using EZDBS, including advantages in throughput, sample chain-of-custody, and data quality..

Presentation #2: Automating Dried Blood Spotting.

Speaker: Sam Abdelhamid
Purdue Pharma L.P

No abstract available at press time.

THE FUTURE OF LABORATORY AUTOMATION:

Presentation #1: Reflections on Automation in Drug Discovery: Thoughts on the Future

Speaker: Timothy McGahan
Drug Discovery Scientist

Laboratory automation has advanced very far from what now seems like humble beginnings in 1980s. Keeping in mind laboratory automation's past, this talk will attempt to extrapolate current trends and make some predictions of the future. Considering our highly dynamic industry, such predictions will likely only be as accurate as a typical five-day weather forecast. However, the topics presented here could generate some interesting comment and perhaps lively debate about the future of our field.

Additional presentations will be scheduled as the meeting date approaches. Please check the chapter web site for updates.

Date: Wednesday, February 5, 2014

Time: Doors open at 6:00 PM

Place: Holiday Inn Somerset Bridgewater
195 Davidson Avenue
Somerset, NJ

Any questions about the meeting can be sent to Kevin Olsen at

Olsenk@Mail.Montclair.Edu



NORTH JERSEY SECTION ELECTION RESULTS

The 2014 election represented the third year the section voted electronically. Thank you to everyone who participated in the election. The results are summarized below.

Chair-Elect (2014)

Ron Kong

Treasurer (2014-2016)

Jacqueline Erickson

Councilors (2014-2016) (4)

Bettyann Howson

Les McQuire

Jeannette Brown

Bill Suits

Alternate Councilors (2014-2016) (4)

Ray Baylouny

Mariann Neverovitch

Fangbiao Li

Tuwanna Rudolph



2013 ANITA J. BRANDOLINI OUTSTANDING PROJECT SEED STUDENT AWARD

The 2013 winner of the Anita J. Brandolini Outstanding Project SEED Student Award was a tie. There were three excellent candidates, and the committee could not choose between them. Each will get a \$100 cash prize and a copy of Brandolini's "Fizz, Bubble and Flash."

Nanaama O'Heene, who was a SEED student for two summers, had been a student at New Brunswick Health Sciences High School. Her mentor, who nominated her, was Dr. Lisa C. Klein from the Material Sciences and Engineering Department at Rutgers. Dr. Klein wrote that "Nanaama proposed a matrix of preparation methods. Her independence far exceeded my experience with SEED students in the past."

Kailyn Rodriguez was nominated by her mentor from Rutgers Chemistry Department in Piscataway, Dr. Gregory Herzog. "Kailyn displays a high degree of responsibility and drive. She is a quick learner and takes initiative in finding better working methods."

Mary Ortiz worked at Rutgers Chemistry Department in Newark with Dr. Michele Pavanello who wrote that Mary Ortiz "carried out a graduate-level computational chemistry project. Mary far surpassed my expectations and performed at a level that I wish all my graduate students would reach."

Congratulations to the students, and thanks to the mentors who generously provided the opportunity to the students, and took the trouble to nominate them.

Susan Fahrenholtz,
Anita J. Brandolini Outstanding
Project SEED Student Award Committee

NORTH JERSEY SECTION CHEM EXPO DURING NATIONAL CHEMISTRY WEEK

New Jersey City University wins 1st Place in the Sister Marian José Smith Undergraduate Outreach Competition

The Executive Committee of the North Jersey Section of the American Chemical Society was very pleased with the undergraduate participation during the Chem Expo held at the Liberty Science Center on Saturday October 26th in celebration of National Chemistry Week. The fourth annual undergraduate competition named The Sister Marian José Smith Undergraduate Outreach Competition in memory of our huge supporter and the Master of Outreach, Sister Marion of St. Elizabeth's. The judges had a difficult time this year in deciding which of the six undergraduate groups had the best interactive demonstration that applied to the 2013 theme of "Energy: Now and Forever!"

About 60 undergraduate students with ten of their advisors from eight different undergraduate institutions (two of which were not competing) created displays and presented demonstrations to the many excited young "future" scientists in attendance. The first place prize went to New Jersey City University, who demonstrated several experiments dealing with energy storage using batteries: a solar-powered home-made rechargeable battery, a dirt battery, a Coke battery, and hand battery. If that was not enough, they also demonstrated the power available from water using a water wheel and hydrogen fuel cell, as well as solar power using a home-made solar cook-

er. The Princeton University Chemistry Society placed second in this year's competition. The other student groups in attendance were Ramapo College -Chemistry Biochemistry Club, Rutgers Chemical Society, Saint Peters University Collins Chemistry Club and Fairleigh Dickinson University Chemistry Club. It was awesome to have Drew University and St. Elizabeth's there as well and we look forward to them joining the competition in future years! Each year this competition grows in size and this year it was amazing to see so many undergraduates participate in this long standing event of the North Jersey Section of the ACS. All of the groups did a wonderful job demonstrating the chemistry of Energy! The section would like to thank each group very much for their participation in this year's Celebration of National Chemistry Week!

The section has awarded the title "**Sister Marion José Smith Undergraduate Outreach Champion for 2013,**" as well as the grand prize of \$175, to New Jersey City University for their outstanding demonstrations. In addition the Princeton University Chemistry Society will be awarded the second place prize of \$75. Congratulations to all of our Undergraduate Students and Chemistry Chapter Advisors!!!!!!

See you all next year at the Chem. Expo!

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Pictured above NJCU Sister Marian Jose Smith Undergraduate Outreach Champions 2013.



Princeton University



Fairleigh Dickinson University



St. Peter's University



Rutgers University



Ramapo College
(All photos courtesy of Dr. Amber Charlebois)



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NORTH JERSEY SECTION — NATIONAL CHEMISTRY WEEK

Energy - Now and Forever



In celebration of National Chemistry Week, North Jersey Section of American Chemical Society held 19th year of its community outreach event, ChemExpo 2013, at the Liberty Science Center in Jersey City on Saturday, October 26. Approximately 2000 visitors were pumped with Energy by the concerted effort of 250 volunteers from academia and industry, and students at local colleges, universities, middle and high schools in North Jersey.

For the fourth year in a row, Chemistry Chapters from six institutions competed for the Sister Marian José Smith Undergraduate Public Outreach Award. The award was instituted in honor of Sister Marian José Smith and her students from St. Elizabeth's College in Convent Station, New

Jersey, for many years of sharing the wonders of chemistry with the general public. The group of students from New Jersey City University was awarded the first place for their highly interactive and enthusiastic presentations at ChemExpo with the students from Princeton University earning the second place. These awards are funded by the North Jersey Section.

Generous donations from three corporations, Infineum USA L.P., BASF, and SPEX CertiPrep, helped defray the costs of holding such a large event. The North Jersey Section is indebted to members of the NJACS Executive Board; the ChemExpo 2013 Steering Committee; retired chemists; chemistry teachers at the participating universities, colleges, middle and high schools; and representatives from various chemical companies for making this event highly successful.

Mita Chaki and Valerie Kuck
NCW Coordinators, NoJ Section

(All photos courtesy of Mita Chaki)



NORTH JERSEY SECTION NATIONAL CHEMISTRY WEEK POSTER WINNERS

As part of its NCW celebration, the North Jersey Section invited K-12 students to participate in the Illustrated Poetry Contest. We are excited to announce the winners and their posters.

Grades 3-5: 1st Place-Ava DiGiacomo
2nd Place-Conner Decker
3rd Place-Hannah Ng

Grades 6-8: 1st Place-Oscar Chen
2nd Place-Sunnay-Dutt Dubey
3rd Place-(tie)-Jillian Sher
3rd Place-(tie)-Leighanna Skene

Grades 9-12: 1st Place-Hailey Conrad
2nd Place-Meredith Megee
3rd Place-Mia Tribbett

The posters of the first place winners have been sent to the ACS National Office in Washington, DC where the students will compete with students from other Local Sections.

(Photos courtesy of Diane Krone)

(Photos continue on page 12.)

**Residential School on Medicinal Chemistry
and Biology in Drug Discovery**
June 8-13, 2014
Drew University, Madison, NJ

This graduate level course concentrates on the fundamentals that are useful in drug discovery spanning initial target assay evaluation through clinical development. Several case histories of recent successful drug development programs will also be presented. The five-day program covers:

Principles of Med Chem	DMPK
Cheminformatics	Toxicophores
Lead ID & Optimization	GPCRs
Epigenetics	Kinase Inhibitors
Fragment-based Drug Design	Ion Channels
Structure-based Drug Design	Enzyme Inhibitors
Drug-like Properties	Bioisosteres
Plasma Protein Binding	Preclinical Tox
Molecular Modeling	Clinical Dev

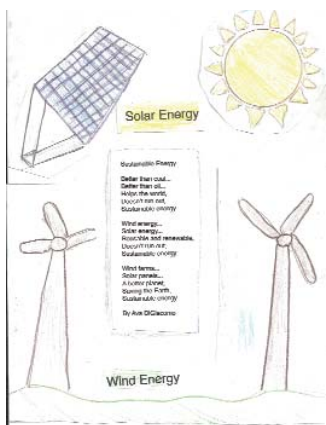
W. Greenlee, V. Gullo and R. Doll – Co-organizers

For more information and application forms:

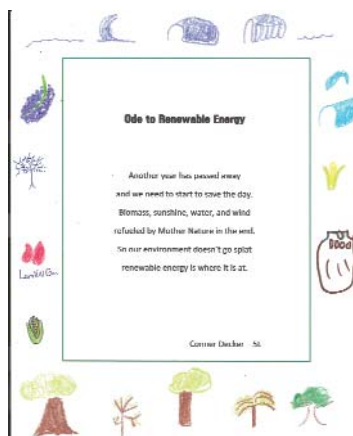
www.drew.edu/resmed

e-mail: resmed@drew.edu

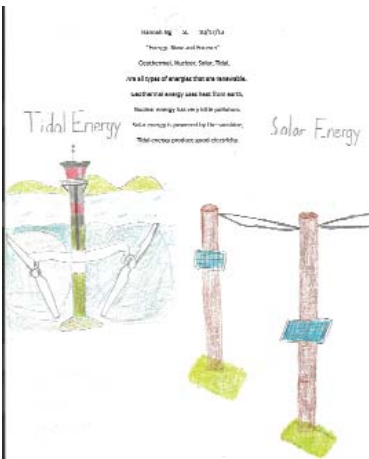
phone: 973/408-3787; fax: 973/408-3504



Grades 3-5 - 1st Place-Ava DiGiacomo

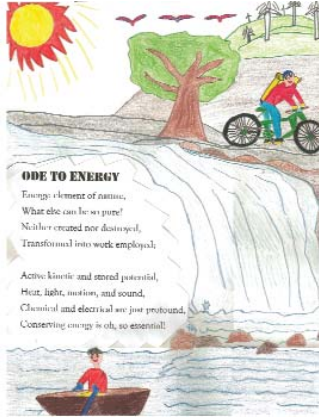


Grades 3-5 - 2nd Place-Conner Decker

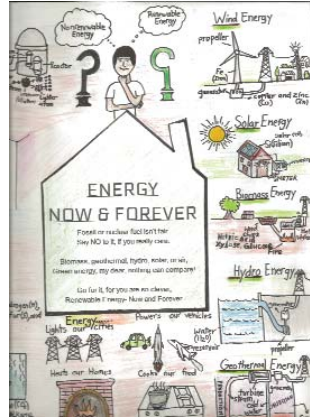


Grades 3-5 - 3rd Place-Hannah Ng

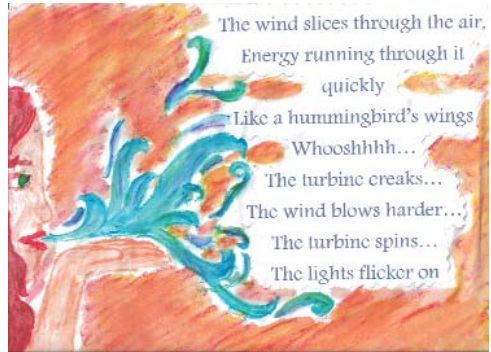
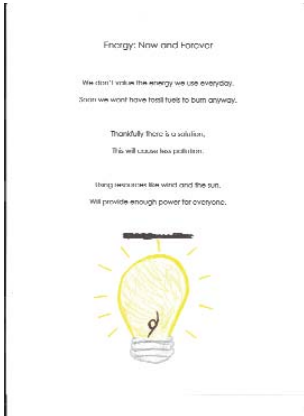
POSTER WINNERS (continued from page 11)



Grades 6-8 - 1st Place-Oscar Chen

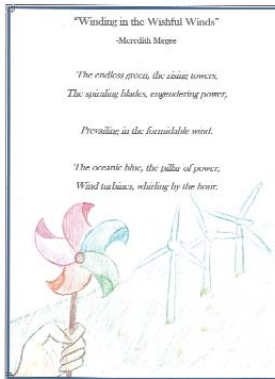
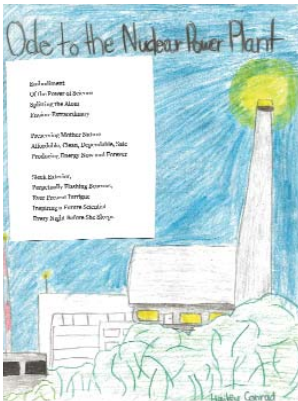


Grades 6-8 - 2nd Place-Sunnany-Dutt Dubey



(L) Grades 6-8 - 3rd Place-(tie)-Leighanna Skene

(R) Grades 6-8 - 3rd Place-(tie)-Jillian Sher



(L) Grades 9-12 - 1st Place-Hailey Conrad

(C) Grades 9-12 - 2nd Place-Meredith Mege

(R) Grades 9-12 - 3rd Place-Mia Tribbett

New York Chair's Message

Hello all:

It is my great pleasure and honor to serve as the 2014 Chair of the New York Section of the American Chemical Society. The New York Section is one of the very large local sections of the ACS and has actively served its industrial, educational and community members for over a century. The section was recognized with three ACS Chemluminary awards for its activities in 2012 at the last national ACS meeting in Indianapolis. The awards were for Outstanding Larger Section, Outstanding High School Chemistry Programs, and Outstanding Global Engagement. This is a great accomplishment for our wonderfully dedicated volunteers in the New York Section.

The major events this year include:

- Annual Sectionwide Conference January 18, 2014 at the College of Mount Saint Vincent. At this meeting we make plans for the year and the continued success of the Section. The guest speaker will be Dr. John Warner from the Warner Institute for Green Chemistry.
- William H. Nichols Symposium and Awards Banquet, Friday March 28, 2014, Crowne Plaza Hotel, White Plains, N.Y. This year's Awardee is Dr. Amos Smith. The 2014 Chair-Elect, Paris Svoronos has done an outstanding job organizing the event.
- Chemistry Olympiad, March 2014.
- Third Annual Earth Day walk across the Brooklyn Bridge in April 2014.
- Undergraduate Research Symposium, May 3, 2014, St. John's University.
- National Chemistry Week, October 2014, the New York Hall of Science.

One of the most important areas that the ACS can spearhead is the education of our students. One way to help students become our future professionals is by inviting them to the local subsection and topical group meetings. Students in the area do not really know what the New York section is and how it can be of service to them. This can be improved by using the technology that is available to us. One way would be to develop a presence on any of the social media sites that the younger generation uses. Our current form of communication is a website, but most of the members, especially the students, do not utilize it to its full potential. I would like to encourage the leaders of the subsections and topical groups to reach out to the colleges in their areas to try to include more of the professors and students in their meetings. One of the greatest things we do is the National Chemistry Week event at the Hall of Science. This is something that I think we can capitalize on. We are showing future generations how much fun chemistry can be and how important it is to their everyday lives. A goal of mine is to try to get some of the subsections to host activities of their own during this week. The subsections can reach out to their local schools and do some of the same activities that were performed at the Hall of Science. They could use the institutions in their subsection to assist.

Over the years I have always been very proud of the work that the New York section does for its members. This section has been a great resource for the New York area, both professionally and scientifically. I know we can continue to be a force in the community. We have a lot of expertise, academically and industrially, in several areas of chemistry that can be shared with the community at large. I look forward to working with the Executive Board. I hope the membership will assist in increasing the awareness of the surrounding community, that chemistry is an everyday very important part of our lives!

Dr. Pamela K.Kerrigan
2014 Chair, New York Section

NEW YORK SECTION 2014 SECTION-WIDE CONFERENCE

Please register at: <http://www.newyorkacs.org/meetings/sectionwide/sectionwide2014.php>

Date: Saturday, January 18, 2014

Times: 9:30 AM – 1:00 PM

Place: College of Mount Saint Vincent - Smith Hall, 631 Riverdale Avenue, Riverdale, NY

Cost: Free to all

PROGRAM

9:30 AM **Arrival and Refreshments**

10:00 AM **Greetings from the 2014 Chair of the ACS New York Section.** Dr. Pamela K. Kerrigan

10:10 AM **Award Presentations.**
Service Plaque and Pin to the 2013 New York Section Chair Dr. Philip H. Mark

New York Section Outstanding Service Award for 2013 Dr. Marc A. Walters

Nichols Foundation H.S. Chemistry Teacher Award for 2013 Ms. Mina Haghjoo Armani
Union City High School, New Jersey

10:30 AM **Report from the 2013 Elections Nominating Committee.** Dr. Paris Svoronos,
(Presentation of Candidates) 2014 Chair-elect
ACS New York Section

10:45 AM **Keynote Speaker: Dr. John C. Warner**
President and Chief Technology Officer
Warner Babcock Institute for Green Chemistry, Inc.
Wilmington, MA

"Entropic Control in Materials Design as an Example of Green Chemistry"

The traditional construction of materials is usually driven by classical synthetic transformations involving the making and breaking of covalent bonds. These processes often require high energy input and highly reactive and hazardous materials. In natural systems, one typically encounters synthetic control schemes that are based on entropic forces rather than these human-designed enthalpic manipulations. In natural processes, phase changes and triggered mixing are often employed to direct systems towards or away from equilibrium conditions. The recognition of these "natural tendencies" allows one to design processes that have reduced toxicological and environmental impact. This presentation will describe results in non-covalent derivatization and bioinspired photopolymers that illustrate this shift towards entropic control as an example of green chemistry.

11:45 AM **Coffee Break.** There will be poster presentations by the New York Section Project SEED Students.

12:00 PM **ACS, New York Section Committee Planning Sessions for 2014.**

Educational Activities: (Chemagination, Chemists Celebrate Earth Day, Continuing Education, High School Olympiad, National Chemistry Week, Nichols Foundation Teacher Award, Project SEED, Student Membership)

Chair: Dr. Alison G. Hyslop

Member Affairs: (ACS Fellows, Awards, Employment and Professional Relations, History of the New York Section, *The Indicator*, Membership, Outstanding Service Award)

Chair: Dr. Ralph Stephani

Program Review: (Subsection and Topical Discussion Group Chairs)

Chair: Dr. Anne T. O'Brien

Public Affairs: (Academe and Industrial Relations, Environmental Chemistry, Fund Raising, Government Affairs, Information Technology, Public Relations, Speakers Bureau)

Chair: Dr. Robert P. Nolan

12:45 PM **Reports from the Chairs of the Committee Planning Sessions.**

1:00 PM **Conclusion of the Meeting.** Join with colleagues for lunch at a local restaurant.

To inquire about the Section-wide Conference, please call the New York Section Office at (516) 883-7510 or e-mail Marilyn Jespersen, Office Administrator, at: njesper1@optonline.net

Directions to the College of Mount Saint Vincent are at <http://www.mountsaintvincent.edu/5707.htm>

All are invited to participate. Hope to see you at the Conference


2014 WILLIAM H. NICHOLS MEDAL DISTINGUISHED SYMPOSIUM AND AWARD DINNER

Symposium: New Strategies and Tactics for Complex Molecule Synthesis

Award Recipient: PROFESSOR AMOS B. SMITH, III

Rhodes-Thompson Professor of Chemistry, University of Pennsylvania

Date: Friday, March 28, 2014

Time: 1:00 PM Registration
 1:30 PM – 5:30 PM Symposium
 5:45 PM Reception
 6:45 PM Award Dinner

Place: Crowne Plaza Hotel, White Plains, NY**PROGRAM**

- 1:30 PM Welcome Professor Pamela K. Kerrigan
2014 Chair, ACS, New York Section
The College of Mount Saint Vincent
- 1:35 PM Opening of the Distinguished Symposium Professor Paris Svoronos
2014 Chair-elect, ACS, New York Section
CUNY – Queensborough Community College
- 1:45 PM Natural Product Synthesis Professor Yoshito Kishi
Harvard University, Cambridge, MA

The halichondrins, originally isolated from the marine sponge *Halichondria okadai* by Hirata and Uemura, are polyether macrolides, which have received much attention due to their intriguing structure and extraordinary anti-tumor activity. In this presentation, we will discuss our recent efforts toward a unified total synthesis of the halichondrin class of natural products.

- 2:30 PM The O-Directed Free Radical Hydrostannation Professor Karl J. Hale
Queens University Belfast,
Northern Ireland, UK
 Reaction Mechanism and Applications in
 Complex Molecule Total Synthesis

In 2005, our group reported the first truly reliable method for performing the O-directed free radical hydrostannation on propargylic-allyl-oxygenated alkylacetylenes **1**. The protocol, which utilizes Ph₃SnH and catalytic Et₃B/O₂ in PhMe at room temperature, generally affords vinyl triphenylstannanes of predominant structure **2** in high yield, with excellent levels of stereo- and regio-control. In this lecture, I will show the great utility of this new O-directed free radical hydrostannation process in trisubstituted olefin synthesis, and I will also discuss its highly complex reaction mechanism, which involves multiple reversible stannyl radical addition-elimination and vinylstannane isomerization events all occurring in unison to give **2** as the primary reaction product. I will then show how our group has recently used this methodology to synthesize the frog toxin, (+)-pumiliotoxin B, and the antitumor oxazole, (+)-inthomycin C. The application of this method to a projected synthesis of the antitumor macrolide, (+)-acutiphycin will also be discussed.

3:15 PM Coffee Break

- 3:45 PM Recent Progress in the Synthesis of Professor John L. Wood
Baylor University, Waco, TX
 Complex Natural Products

Recent efforts in our laboratories have focused on the synthesis of several complex natural products. The evolution of synthetic strategies directed toward the phomoidrides and citrinadins will be discussed.

- 4:30 PM Evolution of Anion Relay Chemistry (ARC): Professor Amos B. Smith, III
NICHOLS MEDALIST
 Design, Synthesis and Validation

Anion Relay Chemistry (ARC), a robust multi-component synthetic tactic, permits rapid construction of complex natural and "natural-like" molecules for biomedical applications. By exploiting various anion (i.e., charge) relocation strategies via [1,n]-Brook Rearrangements, the controlled, sequential assembly of architecturally diverse structures

(continued on page 16)

NICHOLS SYMPOSIUM*(continued from page 15)*

can be achieved by virtue of the latent nucleophilicity of the designed bifunctional ARC linchpins, thus comprising a reaction sequence not dissimilar to "living polymerization." Importantly, the iterative ARC protocol can be carried out in a "single flask!"

Recent integration of Anion Relay Chemistry (ARC) with the Takeda and Hiyama reactions has revealed a "new ARC dimension," namely the validation of efficient palladium-catalyzed cross-coupling reactions (CCRs) of aryl and alkenyl organolithium agents with aryl and vinyl halides, that permits near quantitative recovery of the siloxane-based transfer agent. This tactic offers a practical protocol to circumvent undesired processes, such as lithium-halogen exchange.

5:45 PM Social Hour

6:45 PM William H. Nichols Medal Award Dinner

Professor Carl R. Johnson
(Wayne State University)
will introduce the Medalist

More information on the William H. Nichols Medal Events is available on the New York Section's website at <http://www.NewYorkACS.org>.

Tickets may be reserved using the following form, or through the New York Section website using Paypal.

***** RESERVATION FORM *****

**2014 WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM &
MEDAL AWARD BANQUET in honor of Professor Amos B. Smith III**

Return to: ACS, New York Section, c/o Dr. Neil D. Jespersen, Department of Chemistry,
St. John's University, 8000 Utopia Parkway, Jamaica, NY 11439 (516) 883-7510

Please reserve _____ places for the symposium & banquet at \$120/person, ACS member
 _____ places for the symposium only at \$40/person, ACS member
 _____ places for the banquet only at \$110/person, ACS member

_____ places for the symposium & banquet at \$150/person, Non-member
 _____ places for the symposium only at \$60/person, Non-member
 _____ places for the banquet only at \$120/person, Non-member

_____ places for the symposium only at \$25/person, Students, Unemployed
 _____ places for the symposium only complimentary for 50 year + ACS members

(For table reservations of 8 or more, use the ACS member \$120/person rate for combination tickets)
Reserve a table in the name of: _____

Names of guests are: _____ Indicate numbers in your group who choose:

_____ Chicken _____

_____ Filet Mignon _____

_____ Salmon _____

_____ Mail Tickets to:

_____ Name: _____

_____ Address: _____

BANQUET RESERVATION DEADLINE: MARCH 18, 2014

Please make checks payable to:
ACS, NEW YORK SECTION

Check for \$_____ enclosed

New York Meetings

www.newyorkacs.org

NEW YORK SECTION BOARD MEETING DATES FOR 2014

The dates for the Board Meetings of the ACS New York Section for 2014 were chosen and approved at the September 2013 Board Meeting. The meetings are open meetings – all are welcome. If non board members would like to attend the meeting, please let the New York Section office know by emailing Mrs. Marilyn Jespersen at njesper1@optonline.net or calling the office at (516) 883-7510.

The 2014 Board Meetings will be held on the following Fridays at 6:00 PM at the College of Mount Saint Vincent, Riverdale, NY. Dr. Pamela K. Kerrigan will chair the meetings.

Friday, February 28
 Friday, May 2
 Friday, June 13
 Friday September 19
 Friday November 21

Also, please mark your calendar with the dates of the following major events.

Saturday, January 18, Annual Section-wide Conference.

Friday, March 28, William H. Nichols Medal Award Symposium and Dinner

More information will be posted in future issues of the Indicator and on the New York website at <http://www.NewYorkACS.org>.



CHEMICAL MARKETING & ECONOMICS GROUP

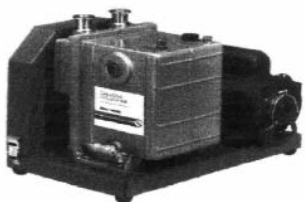
Annual Economic Outlook Luncheon

Speaker: Dr. T. Kevin Swift

Date: Wednesday, January 8, 2014

Place: Yale Club
 New York, NY

We are looking forward to having you join us again. We'll do our best to reserve fair weather for your travels!



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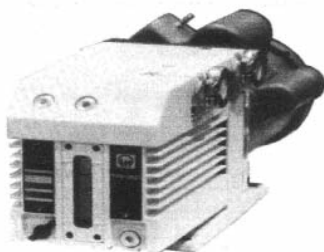
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HIGH SCHOOL TEACHERS TOPICAL GROUP

A Coherent Approach to Energy in High School Physics and Chemistry

Speaker: Larry Dukerich
Dobson High School
Mesa, AZ (ret.)
Arizona State University
Tempe, AZ

Participants will learn how Modeling Instruction has developed a coherent way to represent energy storage and transfer in high school physics and chemistry. Energy is considered an indispensable tool for describing and understanding the world around us. Yet students graduate from high school unable to use energy to describe or explain everyday phenomena. Unfortunately, energy is not treated in a consistent way from course to course in the high school science curriculum. Students are confused by contradictory notions such as "chemical bonds as storehouses of energy" (high energy phosphate bond in ATP) and "bond dissociation energy." From standard potential energy diagrams, they are left with the impression that only exothermic reactions can be spontaneous. In the approach developed in Modeling Instruction in high school physics and chemistry, students are not confronted with a bewildering array of different "forms of energy." Instead they learn that there is only one kind of energy but many ways it can be stored and transferred. Students learn tools to represent qualitative energy interactions analysis in terms of macroscopic and microscopic changes in the system and surroundings. Then, when they encounter the quantitative treatment of work, heat, and energy, the ideas of energy transfer should be relatively straightforward. In this session participants

will practice representing the storage and transfer of energy in a variety of situations students commonly encounter in physics and chemistry and will discuss implications of the use of this approach.

Date: Friday, January 24, 2014

Times: Social and Dinner 5:45 PM

Place: Social and Dinner

George's

89 Greenwich Street (at Rector Street, South-east corner)

New York, NY

Times: Meeting 7:15 PM

Place: United Federation of Teachers

50 or 52 Broadway

New York, NY

Check with security for room.

This is just South of Exchange

Place and the Wall Street Station

on the #4 & #5 subway lines. It is a short walk from the several other subway stations.

Security at UFT requires that you show a picture ID to enter the building. In case of unexpected severe weather, call John Roeder, (212) 497-6500, between 9:00 AM and 2:00 PM to verify that meeting is still on; (516) 385-4698 for other info.

Note: Street parking is free after 7:00 PM. Off street, garage parking is available in the area. There is a "park and lock" garage on Greenwich Street at Edgar Street. Public transportation is strongly recommended.

Jean Delfiner, Co-chair,

jadelfiner@verizon.net

Joan Laredo Liddell, Co-chair,

jlaredoliddell@aol.com



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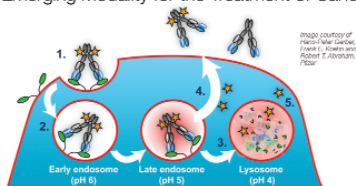
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BIOCHEMICAL TOPICAL GROUP — JOINT MEETING WITH THE NYAS BIOCHEMICAL PHARMA- COLOGY DISCUSSION GROUP



Antibody-Drug Conjugates:

An Emerging Modality for the Treatment of Cancer



Antibody-Drug Conjugates: An Emerging Modality for the Treatment of Cancer

Organizers: Mercedes Beyna, MS
Pfizer

Nahor Haddish-Berhane, PhD
Pfizer

Mauricio Leal, PhD
Pfizer

Puja Sapra, PhD
Pfizer

Dhaval K. Shah, PhD
The State University of
New York at Buffalo

Jennifer Henry, PhD
The New York Academy
of Sciences

Speakers: Peter D. Senter, PhD
Seattle Genetics, Inc.

Ho Sung Cho, PhD
Ambrx, Inc.

Sara Hurvitz, MD
UCLA Medical Center

Dhaval K. Shah, PhD
The State University of
New York at Buffalo

Nahor Haddish-Berhane, PhD
Pfizer

Puja Sapra, PhD
Pfizer

Omar Kabbarah, PhD
Genentech Inc.

Melissa M. Schutten,
DVM, PhD, DACVP
Genentech Inc.

Antibody-drug conjugates (ADCs) promise safer, more effective therapies than standard anti-cancer drugs. This symposium

highlights linker-payload and coupling chemistries, ADC development, biomarker and patient selection, and regulatory perspectives.

Date: Tuesday, January 28, 2014

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

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

Cost: This event has reduced-rate registration for ACS and NYAS members, at \$30 or \$15 (for students and post-docs). Please select the appropriate non-member Registration Category and use the Priority Code ACS. Non-members may attend for a fee of \$85 (corporate), \$65 (non-profit or academic) or \$45 (students and post-docs).

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

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



NY SECTION AND ST. JOSEPH'S COLLEGE — 19TH ANNUAL HS POSTER SESSION

The New York Section of the American Chemical Society and St. Joseph's College present The 19th Annual High School Poster Session at St. Joseph's College, Brooklyn NY, Saturday, February 1, 2014 from 9:00 AM to 1:00 PM.

The annual poster session provides an opportunity for talented high school students from the metropolitan area to compete and be recognized for their research accomplishments.

The program includes:

■ Judging of posters by scientists working in industry and academia.

■ Guest speaker: Cindie Kehlet, Ph.D., Associate Professor of Math and Science, Pratt Institute

■ Certificates to all participants

■ Prizes to the four winning presenters.

For more information or to register visit:

www.sjcnyc.edu/postersession or contact Rhomesia Ramkellowan at rramkellowan@sjcnyc.edu or sjhighschoolpostersession@gmail.com

(continued on page 20)

19TH ANNUAL HS POSTER SESSION

(continued from page 19)

(Include HS Poster Session in the subject line).

Sponsored by The New York Section of the American Chemical Society and St. Joseph's College 245 Clinton Avenue, Brooklyn, NY.

Portable Nuclear Magnetic Resonance for the Investigation of Artist Materials



Featured Keynote

Speaker:

Cindie Kehlet, PhD
Associate Professor of
Math and Science,
Pratt Institute, Brooklyn

Dr. Kehlet was awarded the 2006 Danish Young NMR Researcher Prize for her work in biological solid-state Nuclear

Magnetic Resonance spectroscopy. Also a studio-trained fine artist, she explores the applications of NMR techniques to the science of art conservation.

Pratt's Laboratory for Scientific Study of Art investigates artist materials and their degradation to enhance our ability to preserve art and cultural heritage. The laboratory specializes in non-invasive analysis and works primarily with unilateral Nuclear Magnetic Resonance (NMR). Conventional NMR has so far had limited use in analyzing works of art since it requires that samples to be placed inside the magnet. However, with the development of portable single-sided NMR instruments, measurements can now be performed in a non-invasive and non-destructive manner. With the Profile NMR MOUSE®, it is possible to obtain depth profiles of materials and thereby obtain information on, e.g., material composition and molecular mobility at different depths from the surface of the object.

Date: Saturday, February 1, 2014

Times: 9:00 AM - 1:00 PM

Place: St. Joseph's College
Brooklyn NY

For more information or to register visit:
www.sjcnj.edu/postersession or contact

Rhomesia Ramkellowan at
rramkellowan@sjcnj.edu or
sjchighschoolpostersession@gmail.com

(Include HS Poster Session in the subject line).

**Learn more about the
New York Section at
www.NewYorkACS.org**

LONG ISLAND SUBSECTION

Inorganic/Organic Hybrid Structures for Photovoltaics: Low Cost Roll to Roll Processing of Solar Cells

Speaker: Dr. Wayne E. Jones, Jr.
Department of Chemistry
SUNY

Date: Thursday, February 6, 2014

Times: Coffee/Social 5:30 PM

Seminar 6:00 PM

Place: Queensborough Community
College
Science Building, S-111

Times: Dinner 7:00 PM

Place: Nearby Greek restaurant

Cost: Dinner \$25.00 per person

For updates go to:

[http://www.newyorkacs.org/
sub_island.php](http://www.newyorkacs.org/sub_island.php)



NY NANOSCIENCE DISCUSSION GROUP

2013-2014 Sessions.

*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.

Mark Your Calendars:

Dates: Tuesdays, February 11 and
April 8, 2014

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

Topical Group History:

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



WESTCHESTER CHEMICAL SOCIETY

Special Seminar – “VETI-GEL: A Novel and Biocompatible Hemostatic Agent that Stops Bleeding in Seconds”

Speaker: Joseph Landolina
Suneris

Date: Wednesday, February 12, 2014

Times: Refreshments 5:30 PM

Lecture 6:00 PM

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

Cost: Free and Open to the Public

Further Information: Paul Dillon
PaulWDillon2@hotmail.com
(914) 393-6940

Next Meeting:

Special Seminar – “From the Death of an Icon to the Birth of a Physical Principle for Ultra-sensitive Label-free Bio-sensing”

Speaker: Stephen Arnold

Date: Wednesday, March 19, 2014
Times, Place, Cost same as February.



WESTCHESTER CHEMICAL SOCIETY

On November 13, 2013 Dr. Irina Belozeroва, Postdoctoral Research Associate in the Department of Applied Physics at the Polytechnic Institute of NYU (NYU-Poly), gave a very interesting and informative presentation to the Westchester Chemical Society on the electrochemical detection of thermal transitions (e.g., melting and hybridizing) of DNA bound to a solid gold substrate. The method uses unbound DNA conjugated to an electro-active ferrocenyl moiety. Surface-bound DNA probes, complementary to unbound DNA, are available for hybridization. The application of the

method to high-throughput testing of DNA-binding of drugs, for example, the antibiotic netropsin, was discussed. The talk was based on Dr. Belozeroва's Ph.D. dissertation, under the direction of Professor Rastislav Levicky of NYU-Poly's Department of Chemical and Biomolecular Engineering. Dr. Belozeroва's talk, given at the Westchester Community College in Valhalla, N.Y., was followed by an interesting question and answer, and discussion, session. Several of us, including the speaker, then enjoyed a dinner together at a nearby restaurant. The photo below is of Dr. Belozeroва, her mentor, and the WCS board members attending the meeting.



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.



Joan Laredo-Liddell, Paul Dillon, Rolande Hodel, Irina Belozeroва, Jean Delfiner and Rastislav Levicky

(Photo courtesy of Paul Dillon)

NEW YORK LOCAL SECTION CELEBRATES NATIONAL CHEMISTRY WEEK

By Dr. Ping Furlan
National Chemistry Week Project Leader
New York Local Section

On Sunday, October 27th, 2013 more than 300 volunteers from the major colleges, universities and industries in the New York area joined in the Local Section's effort and celebrated 2013 National Chemistry Week at the New York Hall of Science. More than 80% of the program volunteers were student affiliates of the American Chemical Society or college students taking chemistry courses. Through thirty tables packed with fun-filled and "green" focused hands-on activities, the volunteers demonstrated the values of chemistry in our everyday lives and the importance of using sustainable resources. This largest interactive outreach program of the New York Section, actively engaging over 1,000 museum visitors, especially students in grades K-8, was well enjoyed and well regarded by all who were involved.

In keeping with this year's theme, "Energy: Now and Forever!", a slideshow with images, animations, and videos was created to celebrate various green forms of energy, including solar, hydrogen, water, geothermal and bio-energies, as well as to highlight the section's people and community events. It was projected on a museum's large and prominent screen (22'x12') and was run throughout the day at the site of the program. Through a hands-on approach, volunteers demonstrated how a light bulb can light up by tidal, falling water or ocean-wind energy as well as how a toy boat can move by solar power. Participants learned about searching for and using alternative energies to help use the Earth's resources more efficiently. By means of the light emitting diode (LED) experiment, they learned that unlike the conventional hot incandescent light bulbs that easily burn out, the multi-color LEDs are cool to the touch, allowing LEDs to save energy by minimizing energy losses via heat. All of this helped those involved see the importance of considering these things for ship and building construction to help reduce energy consumption.

Our visitors also enjoyed seeing how a color can be made to appear then disappear, how "magic" sand will not get wet, and how chemistry and science help turn dirty waters clean and ensure clean waters stay clean. They were able to take some things home with them such as "instant snow", "slimy slime", UV bead bracelets, and "fortune telling fish". All were happy to meet "Dr. Met", the New York Mets' mascot, who visited the site, delightfully tried activities at different stations, and cheerfully posed for pictures with the "chemists" of all ages and all backgrounds.

This was a learning experience for both the audience and the college students that participated in the all-day program running from 10:30 a.m. to 4:00 p.m. Our student volunteers expanded their chemistry knowledge, gained some experience teaching and mentoring, and further developed their leadership and teamwork skills. Area faculty, students and chemists had a great opportunity to communicate and exchange ideas with and get to know each other. As the volunteers closed down the program, all were pleased with the day and many agreed – a year in advance – that they would be back for National Chemistry Week 2014!

We would like to extend our warmest thanks to our volunteers as well as the sponsoring colleges, universities, companies and non-profit organizations including: New York Hall of Science, Pepsi, HGS-Maruzen, United States Merchant Marine Academy, American Institute of Chemical Engineers, Polytechnic Institute of New York University, CUNY – Queensborough Community College, Columbia University, St. Joseph's College-New York, Iona College Gaels, Pace University, Aldelphi University, Internation Flavors & Fragrances, Inc., Stony Brook University, St. John's University, New York University, New York Mets, Mettler Toledo, The College of Mount Saint Vincent, The Urban Assembly, and Hofstra University. Their enthusiastic support and strong community spirit made the success of this largest chemical hands-on public event in the area possible.

“Watch how fast this white powder erupts into fluffy snow!” On Sunday, October 27, during the New York Section’s 2013 National Chemistry Week celebration program at NY Hall of Science, participants enjoyed learning about how man-made chemicals, similar to the one in the activity that is capable of rapidly absorbing large amount of water, are used to keep the baby bottoms dry and to convert waste stream, water or sludge into solid phase for easy disposal. This largest outreach program offers an opportunity for the general public to learn about how chemistry positively impacts our everyday lives and a stage for the Section to excite the next generation of scientist with hands-on chemistry fun.



(Photo Courtesy of Ping Furlan)

Call for Nominations

THE SOCIETY FOR APPLIED SPECTROSCOPY – NY SECTION

2014 Gold Medal Award

Nominations are being sought for the 2014 Gold Medal Award of the New York Section of the Society for Applied Spectroscopy. This coveted award was established in 1952 to recognize outstanding contributions to the field of Applied Spectroscopy. The Gold Medal will be presented at a special award symposium, arranged in honor of the awardee, at the 2014 Eastern Analytical Symposium. A nominating letter describing the nominee’s specific accomplishments should be submitted along with a biographical sketch and list of publications **by January 3, 2014**. Please email all materials to Debbie_Peru@colpal.com or mail to Deborah A. Peru, Colgate Palmolive Co., 909 River Road, Piscataway, NJ 08855.

If you have any questions or require more information, you may contact me at (732) 878-7295.

Deborah Peru, NYSAS Secretary
Website: <http://www.nysas.org/>



WCS DISTINGUISHED SCIENTIST AWARD 2014

The Westchester Chemical Society is accepting nominations for the “WCS Distinguished Scientist Award 2014”.

Scientists who live or work in Westchester or the Bronx qualify. Please send a cover letter stating why your nominee should receive the award along with the nominee’s resume **by January 31, 2014** to Dr. Paul Dillon at PaulWDillon2@hotmail.com or 67 Matthes Road, Briarcliff Manor, NY 10510 or to Dr. Peter Corfield at pwrc@earthlink.com.

Call for Volunteers

LIBERTY SCIENCE CENTER

FREE Community Evenings

Volunteers are needed to host a table or do a demo at this event. The dates selected are the prime dates for these events as they are near National Chemistry Week and Earth Day. If we have more volunteers, we can go more days.

Community Evenings are exclusive events hosted throughout the year for all students, teachers and families from NJ’s 31 former Abbott Districts. Held from 5:30 PM until 9:00 PM, families are invited to explore the Science Center’s themed exhibition galleries; experience the excitement of IMAX films* and RealD 3D shows*; and engage in special family programming, live demonstrations and hands-on activities – all at no cost.

Dates: January 22, 2014, February 19, 2014, March 19, 2014, April 30, 2014, May 21, 2014

To Volunteer or if you have questions contact Miriam Gulotta mirjet2@yahoo.com or Jeannette Brown Jebrown@infionline.net.

Professional/Product Directory

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