

# THE Indicator

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## **Happy Valentine's Day** Let Them Know How Much They're Loved



*(Photo courtesy of Kathryn Croskey Photography)  
kathryncroskey.com*

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January 2014	November 20, 2013
February	December 20, 2012

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

## February Calendar

### NEW YORK SECTION

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New York Sectionwide Meeting  
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**Tuesday, February 5, 2013**  
Nanoscience Discussion Group  
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**Thursday, February 7, 2013**  
Westchester Chemical Society  
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**Thursday, February 7, 2013**  
Chemical Marketing & Economics Group  
*See page 8.*

**Thursday, February 7, 2013**  
Long Island Subsection Seminar  
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**Friday, February 8, 2013**  
High School Teachers Topical Group  
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**Friday, February 15, 2013**  
New York Section Board Meeting  
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**Thursday, February 28, 2013**  
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*See page 9.*

### NORTH JERSEY SECTION

**Monday, February 11, 2013**  
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**Wednesday, February 20, 2013**  
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**Monday, February 25, 2013**  
North Jersey Executive Committee Meeting  
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**Deadline for items  
to be included in  
the March 2013  
issue of  
*The Indicator* is  
January 20, 2013**

***The Indicator* is posted to the web  
on the 15th of the previous month at  
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## THIS MONTH IN CHEMICAL HISTORY

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

Any in-depth survey of the history of chemistry is incomplete without some consideration of the history of alchemy. In many respects chemistry is a continuation of alchemy, and owes many of its methods and materials to the older (pseudo-scientific?) field of study. This continuity is made vividly clear in a new one volume history of alchemy, "The Secrets of Alchemy" by Lawrence M. Principe of Johns Hopkins University (University of Chicago Press, 2013). Dr. Principe is both a professor of chemistry and of the history of science, and is the highly regarded author of previous books on the history of science and on alchemists. This new book fills a striking vacancy in the history of chemistry. It is both a scholarly and a lively successor to such valuable earlier works like E.J. Holmyard's "Alchemy", published in 1957, and F. Sherwood Taylor's "The Alchemists" first published in 1949.

In the more than half century since these earlier books appeared there has been a lot of new scholarship studying original alchemical texts, some of it by Principe himself, and this new book incorporates the new views of alchemy that have developed. I am probably being foolhardy, but I will try and summarize two millennia of alchemy in a couple of paragraphs. Origins of alchemy in Greco-Egyptian texts show a practical field of techniques, altering properties of common materials to make them resemble more precious substances. Sometimes eminently practical processes were hidden in a cryptic almost mystical language, so that only adepts might understand them. The Arabic conquerors of the Eastern Mediterranean translated many of these recipes into Arabic, and added to them both in practice and in theory. They also began to apply alchemy to medicine. In the 12th. century Western scholars visited Spain to study the works of the Arabs and the Greek texts they were based on (incidentally bringing the works of Plato, Aristotle and others into Western scholarship) and produced the first Latin alchemical manuscripts.

Alchemy flourished in medieval and renaissance Europe, often for the most practical reasons; the transmutation of base metals into precious ones by the action of the Philosopher's Stone hinted at a path to wealth not only for the alchemists, but also for the nobility who were their patrons and who were usually sorely disappointed. The brunt of their disappointment often fell upon the alchemists themselves. With the rise of science and scientific methods in the 17th. and 18th. centuries alchemy was transmuted into chemistry, though a strain of ancient alchemy was still practiced well into the 20th. (and the 21st.?) centuries.

A fascinating and new aspect of Principe's book is the painstaking way in which he explains the actual chemistry that lies behind some alchemical processes. For example the 16th. century alchemist, Basil Valentine, gives a highly allegorical method for producing a medicine, "Sulfur of Antimony" from the toxic element antimony. In Principe's hands and laboratory, after deciphering the text, the steps on this journey from the antimony ore stibnite are reproduced and shown to be reasonable. It appears that Valentine's "Sulfur of Antimony" is actually iron acetate produced when an iron crucible and stirring rod are used in a late step in the process! The baby (antimony) was thrown out with the bathwater.

If you want to read an absorbing short history of alchemy Principe's book is the text of choice. It corrects many errors of interpretation of earlier books and brings modern scholarship to bear on this fascinating field that was one ancestor of modern chemistry.

## NEW YORK SECTION – 2013 SECTION-WIDE CONFERENCE

**Date:** Saturday, February 2, 2013  
**Times:** 9:30AM – 1:00PM  
**Place:** St. John's University, 8000 Utopia Parkway, Jamaica, NY  
 (Please visit <http://www.NewYorkACS.org> for the meeting venue.)  
**Cost:** Free to all

### PROGRAM

- 9:30 AM **Arrival and Refreshments**
- 10:00 AM **Greetings from the 2013 Chair of the ACS New York Section** Dr. Philip H. Mark
- 10:10 AM **Award Presentations**  
 Service Plaque and Pin to the 2012 New York Section Chair Dr. JaimeLee Iolani Rizzo  
 New York Section Outstanding Service Award for 2012 Dr. Stephen Z. Goldberg  
 Nichols Foundation H.S. Chemistry Teacher Award for 2012 Mr. Steven O'Malley  
 Stuyvesant High School in New York, New York
- 10:30 AM **Report from the 2012 Elections Nominating Committee** Dr. Pamela K. Kerrigan  
 (Presentation of Candidates) 2013 Chair-elect of the ACS New York Section
- 10:45 AM **Keynote Speaker** **Dr. Alfredo Mellace**  
 Assistant Professor of Organic Chemistry  
 Nassau Community College, SUNY

#### **Title: Ancient Roman Science and Technology**

Ancient civilizations are often treated as nonchalant discourse of the past about a time that no longer exists. Unfortunately, this allows ambivalence towards the past, potentially closing the door to a period that is fascinating in both art and technology. The focus of this lecture will be the Roman Civilization specifically in the period of the 1st century AD between the time of Augustus and Trajan. Rome will be placed in the context of the ancient world, with respect to its achievements in technology specifically military equipment, links that influenced the way the Roman engineers, smiths, textile manufacturers, leather workers, and artisans designed items and objects, and the breadth and quality of Roman craftsmanship that allowed them to conquer foreign lands and establish the Roman influence on civilization. This presentation will also include the science and technology behind the metallurgy, dye processes, armor production, leatherwork, carpentry, masonry, and siege machine. Furthermore, a discussion of the ancient world would not be complete without relating innate objects such as weapons and armor to the people who wielded them. To this end, the civilization itself and life of the Romans will also be discussed in context to their technology.

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 2013**

**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 Hyslop

**Member Affairs:** (ACS Fellows, Awards, Employment and Professional Relations, History of the New York Section, 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](mailto:njesper1@optonline.net)

Directions are at: <http://www.stjohns.edu/about/general/directions/directions/queens>

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

## New York Meetings

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

### NEW YORK SECTION BOARD MEETING DATES FOR 2013

The dates for the Board Meetings of the ACS New York Section for 2013 were chosen and approved at the November 30, 2012 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](mailto:njesper1@optonline.net) or calling the office at (516) 883-7510.

The 2013 Board Meetings will be held on the following Fridays at 6:30 PM at St. Johns University, D'Angelo Center, Jamaica, NY. Dr. Philip H. Mark will chair the meetings.

#### Friday, February 15

Friday, April 19

Friday, June 7

Friday, September 27

Friday, November 15

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

#### Saturday, February 2, 2013 – Annual Sectionwide Conference

Friday, March 15, 2013 – Nichols Symposium and Award Banquet

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



### WESTCHESTER CHEMICAL SOCIETY

#### Special Seminar – Real-Time in-vivo Imaging of Biological Events with FIONA

*Speaker:* Christopher Randolph Salnave, MS  
Adjunct Lecturer  
St. John's University  
Queens, NY

Myosin VI is an actin based molecular motor that has been known to be involved in cell migration, spermatogenesis, signal transduction and the process of intracellular organelle and vesicle transport. Myosin VI also assists with the stabilization of stereocilia, the mechanosensing organelles in hair cells in the inner ear. Myosin VI is considered to be an unconventional myosin,

because to carry out these physiological processes it moves toward the pointed end of the actin cytoskeleton; in contrast to other characterized myosins. In this study, by using fluorescent labeled endosomes we are able to track myosin VI using Fluorescence Imaging with One Nanometer Accuracy (FIONA) and total internal reflection fluorescence microscopy (TIRFM). As a result of implementing FIONA, backward and forward steps were observed which are consistent with previous mechanistic studies of myosin VI. Data analysis reveals an average forward step of 39.9 nm ( $\pm 1.98$  nm) with  $N = 143$  steps and an average speed of 676 nm/s ( $\pm 147$  nm/s).

Mr. Salnave, M.S. was an interdisciplinary graduate research assistant under the direction of Paul Selvin in the department of Physics at the University of Illinois at Urbana Champaign. In the Selvin lab, he learned how to use and build high resolution fluorescence microscopy instruments and state of the art imaging techniques such as FIONA (fluorescence imaging with one nanometer accuracy). FIONA is a method that shatters the diffraction limit of light and has revolutionized the field of fluorescence microscopy and biophotonics for the past decade. Combining methods of FIONA and total internal reflection microscopy he is able to track detailed molecular motor mechanisms with nanometer precision both in vitro and in vivo. He obtained his M.S. degree in Chemistry from the University of Illinois at Urbana Champaign. He is a recipient of an NIH-Molecular Biophysics training grant and a former member of the Center for the Physics of Living Cells at the University of Illinois at Urbana Champaign. He is currently an Adjunct Lecturer in the department of Chemistry at Saint John's University where he teaches the Introduction to General and Organic Chemistry to incoming freshman and sophomore students. He has aspirations of improving drug therapy and diagnostic assays in the medical and pharmaceutical field.

**Date:** Thursday, February 7, 2013

**Times:** Refreshments 5:30 PM

Lecture 6:00 p.m.

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

**Cost:** Free and open to the public

## NEW YORK NANOSCIENCE DISCUSSION GROUP

*Speakers to be announced.*

Hosted by the Department of Chemistry,  
New York University

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.

Mark your calendars for the next meeting, on **March 26**, when we will celebrate the 10th year of this topical group!

**Date: Tuesday, February 5, 2013**

Times: Refreshments 7:00 PM

Meeting 7:30 PM

Place: New York University Silver Center  
31 Washington Place between  
Washington Square 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))

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



## CHEMICAL MARKETING AND ECONOMICS GROUP

**Luncheon and Webcast — Japan: Life  
Science Innovation**

*Presentations by:* John Keller, Ph.D.

Shionogi, Inc.

Catherine Szadanooff  
Takeda Pharmaceuticals

Alexander Scott  
Eisai Pharmaceuticals

George Rodriguez  
Argeni

Over the last decade, the top Japanese pharmaceutical companies have established themselves as shining global players after a period of rapid international expansion through major strategic acquisitions, an innovative pipeline and partnerships with emerging biotech companies. However, as they face increasing demographic changes, cost pressures of health care systems world-

wide, personalized drugs and demand for more efficient targeting, some questions remain.

- What are the drivers and trends that impact their global innovation strategies?
- What role will vaccines, bio-betters, targeted therapies, drug-diagnostic co-development and new approaches will play in the next decade?
- What are the challenges and opportunities for the industry?

**Date: Thursday, February 7, 2013**

Place: Yale Club

50 Vanderbilt Avenue  
New York, NY

Time: 11:00 AM - 2:00 PM

Cost: Luncheon: \$140 for non-CM&E members in support of STEM education; \$120 for CM&E and NYPF members in support of STEM education; \$90 for non-CM&E members; \$70 for CM&E, Chempharma and NYPF Members Only.

Early-Bird discount of \$20 applicable if you register **by Friday, January 18, 2013.**

Webcast fees: \$50 for STEM support. \$20 for all others. Available as a Webcast recording.

No webcast registrations accepted the day of the event.

**Special Offer:** Webcast recording at no charge for ACS members only. (Must provide membership number next to Job Title).

Venue: The Yale Club in NYC

**No cancellations after February 1, 2013.**

Cancellations are subject to fees. Prices may change without notice.

**Please note:** recent meetings have been oversubscribed. For example, the December 6, 2012 Inaugural Leadership Awards and M&A luncheon was a full house with 180 attendees and over 190 registrations. So, we encourage readers to register early to be sure of having a place at the table.

**S U R P R I S E**

our editor by calling and saying you appreciate the quality and content of our newsletter. Our editor works hard to maintain a publication of interest to our membership. Oh, and by the way, you could also give credit to our advertisers who financially support us.

## LONG ISLAND SUBSECTION

### Board of Directors and Meeting Dates for Spring 2013

The Long Island subsection of the ACS New York section is pleased to announce its Board of Directors for 2013.

Chair: Alfredo Mellace  
 Chair-Elect: Marlon Moreno  
 Past-Chair: John Schmermund  
 Secretary: Terry Brack  
 Treasurer: Philip Mark  
 Directors: David Lloyd, Emily Mundorff, Ralph Stephani, Luis Vargas

Board meetings of the Long Island subsection of the ACS New York section will be held at Nassau Community College, Life Sciences Building, room LS 220C, at 6:30 PM on the following dates.

Thursday, January 31  
**Thursday, February 28**  
 Thursday, March 21  
 Thursday, April 25

Monthly seminars will be held on the following dates, with a social gathering at 6:30 PM followed by the seminar at 7:00 PM.

### Thursday, February 7

Queensborough Community College room TBA  
**Searching for Safer Anti-inflammatory Drugs**

*Speaker:* John Regan  
 Queensborough Community College

Thursday, March 7  
 Hofstra University room and speaker TBA

Thursday, April 4  
 Hofstra University room TBA and speaker

Thursday, May 2  
 Hofstra University room and speaker TBA

The LI-ACS Chemistry Challenge will be held on Friday, April 26th at Queensborough Community College and the High School Awards are scheduled for May.

Please check the LI-ACS webpage at [www.newyorkacs.org/sub\\_island.php](http://www.newyorkacs.org/sub_island.php) for updates.

## HIGH SCHOOL TEACHERS TOPICAL GROUP

### Engineering Failures and Design Principles

*Speaker:* Sheldon Levine  
 Vice President for Marketing and Business Development  
 AeroNav Laboratories  
 College Point, NY

This talk will present well-known engineering failures such as the Millennium Bridge, New Orleans levees, World War II liberty ships, the John Hancock Building, the Leaning Tower of Pisa, DeHavilland Comet jet aircraft, and the Tacoma Narrows Bridge to demonstrate the importance of design principles in preventing failures. It will also present a brief overview of some of the environmental simulation testing equipment in the AeroNav Laboratories facility.

**Date:** Friday, February 8, 2013  
**Time:** Social and Dinner 5:45 PM  
**Place:** No reservations required  
 M&G Pub (Murphy and Gonzales)  
 21 Waverly Place (at Green Street, North-east corner)  
 New York, NY  
**Time:** Meeting 7:15 PM  
**Place:** New York University  
 Silver Center Room 207  
 32 Waverly Place (South-east corner Washington Sq. East)  
 New York, NY

Security at NYU 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: For those who prefer indoor attended parking, it is available at the Melro/Romar Garages. The entrance is on the west side of Broadway just south of 8th Street, directly across from Astor Place. It is a short, easy walk from the garage to the restaurant or meeting room.

Learn more about the New York Section at  
[www.newyorkacs.org](http://www.newyorkacs.org)

## WESTCHESTER CHEMICAL SOCIETY

### Special Seminar — “Modeling Protein-DNA Interactions at Electrified Interfaces”

*Speaker:* Keeshan Williams\*  
The Polytechnic Institute of NYU  
Department of Chemical and  
Biological Engineering  
Brooklyn, NY

Coupling self-assembled monolayer (SAM) techniques with biodiagnostic applications has led to custom made electrochemical sensors that can be produced with relative ease, in multiplexed formats, and at low cost. For example, DNA monolayers have been used to detect complementary sequences within complex sample matrices as well as to elucidate the thermodynamic and kinetic parameters of binding various species (e.g. proteins, small molecules) to DNA. Here, electroactively labeled, double stranded DNA (dsDNA) monolayers are interrogated using alternating current voltammetry (ACV) to monitor association between a transcription factor protein and the monolayer. Various ACV input frequencies are tested to determine those most sensitive to protein binding, and concentration series are performed to generate Langmuir-type binding isotherms for quantitative determination of binding affinities. Because the DNA binding reaction is coupled to protein dimerization in solution a model that accounts for coupling between the two equilibria is needed to fully characterize the experimental data. This presentation will discuss optimization of the experimental approach as well as model-based extraction of thermodynamic parameters for protein-DNA interactions using a classical biomolecular systems derived from bacteriophage lambda.

Mr. Williams received a B.A. degree in Chemistry from Queens College, City University of New York, Flushing, NY, in 2005. Upon graduation, he worked as a Chemist for a materials testing laboratory in College Point, NY. While pursuing his Masters of Science in Chemical Engineering at NYU-Poly he also worked as a Materials Engineer for the Port Authority of New York and New Jersey. In 2008, he started pursuing a Ph.D. degree in Chemical and Biological Engineering at NYU-Poly.

\* *Coauthor:* Rastislav Levicky, Polytechnic Institute of NYU.

**Date:** Thursday, April 11, 2013

**Times:** Refreshments 5:30 PM

Lecture 6:00 p.m.

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

**Cost:** Free and open to the public

For more information, contact Paul Dillon:

E-Mail [PaulWDillon2@hotmail.com](mailto:PaulWDillon2@hotmail.com)

Phone (914) 393-6940

[http://www.newyorkacs.org/sub\\_west.php](http://www.newyorkacs.org/sub_west.php)



## NY SECTION'S SECOND ANNUAL EARTH DAY PARADE

### Walk the Brooklyn Bridge

The New York Section's Second Annual Earth Day Parade, "Walk the Brooklyn Bridge" will be hosted by Pace University on **Saturday, April 20, 2013!**

Dr. JaimeLee Rizzo, 2012 Immediate Past Chair of the Section and Coordinator of the Earth Day Event will organize the parade.

Earth Day was first officially recognized on April 22, 1970 as a way to demonstrate support for a healthy environment, raise awareness about environmental issues, and remind people that we all need to contribute to a sustainable planet. Each year, ACS highlights one of four general topics (water, air, plants/soil or recycling) and chooses a specific "theme name" under the topic to focus the CCED celebration.

This year's theme is, "**Our Earth: Handle with Care!**"

ACS local sections, Student Member Chapters, and divisions are encouraged to take part in the celebration, particularly the annual community event. To register for the "Walk the Brooklyn Bridge, for more information, and to see photos from last year's event please go to our official Earth Day website: <http://www.newyorkacs.org/meetings/EarthDay/CCED.php>

## ACS NY SECTION—61st ANNUAL UNDERGRADUATE RESEARCH SYMPOSIUM (URS)

**Research Adventures in Molecular  
Biophysics: fungal, vegetable and animal tales**



*Keynote Speaker:* Prof. Ruth Stark  
Dept. of Chemistry  
City University of  
New York (CUNY)

The Keynote Address will be followed by original research presentations given by students from colleges and universities throughout the tri-state area.

**Date: Saturday, April 27, 2013.**

Times: 8:00 AM - 3:00 PM

Place: CUNY City College of New York  
New York, NY

Sign up as an attendee at <http://www.newyorkacs.org/meetings/urs/urs.php>

Conference Registration Window:

**February 22, 2013 to March 14, 2013**

E-mail questions to:

[nyacsurs2013@gmail.com](mailto:nyacsurs2013@gmail.com)

## SIGNIFICANT DATES FOR 61st URS

Deadline for Abstract Submission - March 15, 2013

Notification of the abstract acceptance – March 26, 2013

Deadline for Symposium Advanced Registration – March 27, 2013

FREE Registration for student members of the National ACS, faculty mentors who register in advance and sponsors. For non-ACS members and guests, the registration is \$35 in advance. All on-site registration is \$45 for faculty, staff and guests. Checks for the registration fee should be made out to: "NY ACS URS" and sent to:

Prof. Joseph Serafin, St. John's University,  
Department of Chemistry, 333 St. Albert  
Hall, Queens, NY 11439.



## 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 [hessyaft@hotmail.com](mailto:hessyaft@hotmail.com).

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



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## WESTCHESTER CHEMICAL SOCIETY

James (Jim) Freeman, the Director of Assay Development for the ADVIA Centaur® Vitamin D Total assay for Siemens Healthcare Diagnostics in Tarrytown, NY, made a very interesting, informative and enthusiastically received presentation entitled "Vitamin D: Understanding the Technical Challenges in Testing" to the Westchester Chemical Society on December 5th at the Westchester Community College. Jim discussed some of the work he has done on this assay. He noted that Vitamin D, specifically 25(OH)-vitamin D, is a challenging assay to accurately measure. After giving background into why

Vitamin D is interesting clinically, he examined why vitamin D is such a complex test and discussed considerations to keep in mind when comparing different assays and methodologies. In particular, he explored the challenges Vitamin D measurements present to assuring equimolar detection of the important Vitamin D isoforms, while minimizing cross-reactivity to clinically unimportant variants, and to assay standardization, particularly in regard to manufacturer to manufacturer variation. The audience participated in a lively discussion with Jim following his talk. See the photo at the top of the next page of the Westchester Chemical Society board members, along with Jim, after the presentation.



Paul Dillon, Rolande Hodel, Jim Freeman and Peter Corfield at Jim's Westchester Chemical Society Vitamin D Presentation.

*(Photo courtesy of Rolande Hodel)*



The Biochemical Pharmacology  
Discussion Group is proudly  
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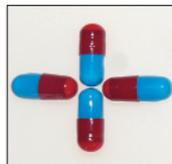
2012-2013  
EVENTS  
CALENDAR

# Biochemical Pharmacology Discussion Group

The **Biochemical Pharmacology Discussion Group** represents a diverse group of scientists from pharmaceutical and biotechnology companies and university and medical research centers interested in biochemistry, molecular biology, biomedical research, and related areas. The group brings together diverse institutions and communities, industrial and academic, to share new and relevant information at the frontiers of research and development.

**MAR 25 2013** **Treatment Resistant Depression: Glutamate, Stress-Hormones and their Role in the Regeneration of Neurons**

Major depression is a devastating illness, and current therapies based upon monoamine neurotransmitters are beneficial for only around 1 in 10 patients. This program reviews a paradigm shift in treatment targeting the glutamatergic neurotransmitter system.

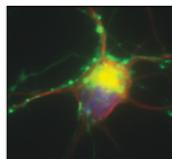


**APR 23 2013** **Targeting Insulin Resistance for Treatment of Alzheimer's Disease: From Laboratory to Clinic**

Insulin resistance and dysregulated insulin signaling have been demonstrated in the brains of AD patients. Current diabetes drugs that improve cognition and brain insulin signaling in rodent AD models are in clinical trials for mild cognitive impairment and AD.

**MAY 24 2013** **Targeting Epigenetic Regulators for Cancer Therapy**

Advances in epigenetics have made clear that many of the heritable changes that contribute to cancer cell transformation occur well beyond the primary DNA sequence. In this symposium, we will review the current understanding of epigenetic regulators in cancer development and the progress in designing effective therapies targeting the epigenome.



**SEP 24 2013** **New Players in Atherosclerosis**

Currently available therapies fail to resolve the full burden of cardiovascular diseases, including atherosclerosis. Understanding the role of key hematopoietic and inflammatory players in this disease process will open avenues into identifying new targets to fight atherosclerosis.



**OCT 4 2013** **The Microbiome in Health, Disease, and Therapeutics: Bugs, Guts and Drugs**

Symbioses between humans and our gut microbiome influence human biology including nutrition, immune function, and even brain development. We will review how these symbiotic relationships impact drug metabolism, new drug development, and a variety of disease states.

Please visit [www.nyas.org/BPDG](http://www.nyas.org/BPDG) for more details and to register for these events.

The events are presented by the **Biochemical Pharmacology Discussion Group** at the **New York Academy of Sciences** and the **New York Chapter of the American Chemical Society**.



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## 2013 WILLIAM H. NICHOLS MEDAL DISTINGUISHED SYMPOSIUM AND AWARD BANQUET



### Symposium: Addressing Cutting Edge Challenges in Catalysis & Energy

*Award Recipient:* **PROFESSOR RICHARD EISENBERG**

Tracy Harris Professor Emeritus at the University of Rochester.

#### PROGRAM

- 1:30 PM Welcome** Professor Philip H. Mark  
2013 Chair, ACS, New York Section  
SUNY - Nassau Community College
- 1:35 PM Opening of the Distinguished Symposium** Professor Pamela K. Kerrigan  
2013 Chair-elect  
ACS, New York Section  
The College of Mount Saint Vincent
- 1:45 PM The Catalytic Conversion of CO<sub>2</sub> to Liquid Fuels** Professor Clifford P. Kubiak  
University of California – San Diego
- Catalysis of the conversion of carbon dioxide to liquid fuels using solar and electrical energy is a critical global challenge that will positively impact the carbon balance by recycling CO<sub>2</sub> as fuels. The importance of catalyst turnover frequency in the overall efficiency of the conversion of solar energy and CO<sub>2</sub> into chemical fuels will be discussed. The state of the art in natural and artificial catalysts for the chemical reduction of CO<sub>2</sub> will be reviewed. The improvement in the activities of several rhenium based catalysts, and infrared spectroelectrochemical studies that probe the mechanism of catalysis will be described. Recent improvements in CO<sub>2</sub> reduction catalyst rates and lifetimes have allowed the photochemical "splitting" of CO<sub>2</sub> to CO and O<sub>2</sub> to be achieved. The importance of proton coupled mechanisms will be discussed with respect to lowering the potentials for CO<sub>2</sub> reduction. The development of nickel complexes as artificial formate dehydrogenases will be described as one means of achieving proton coupled electron transfer in the CO<sub>2</sub>/HCOO<sup>-</sup> couple. The application of Density Functional Theory (DFT) to compute CO<sub>2</sub> binding energies will be reviewed, and the method will be applied to explain the selectivity and activity of the well-studied nickel cyclam CO<sub>2</sub> reduction catalyst system. High resolution XANES spectroscopy has been applied to several CO<sub>2</sub> reduction catalysts to probe their electronic structures and the role of non-innocent ligands in storing electronic charge. Stopped flow kinetics studies of several CO<sub>2</sub> reduction catalysts which show kinetic selectivities for CO<sub>2</sub> vs. H<sup>+</sup> reduction of >35 will be presented, and interpreted in terms of an electronic structural model that favors π-symmetry ground states for CO<sub>2</sub> reduction and α-symmetry ground states for H<sup>+</sup> reduction. The implications of these findings for further catalyst development will be discussed.
- 2:30 PM Strong C-H and C-C Bond Cleavage Reactions Using Homogeneous Transition Metal Complexes** Professor William D. Jones  
University of Rochester
- Over the past 20 years substantial progress has been made in the understanding of the activation of C-H and other strong bonds by reactive metal complexes in low oxidation states. This talk will present an overview of the use of pentamethylcyclopentadienyl and trispyrazolylborate rhodium complexes for the determination of thermodynamic factors that influence the activation of arene and alkane C-H bonds. Insights into bond strengths, kinetic and thermodynamic selectivities, and the nature of the intermediates involved will be examined. The influence of substituent effects on the thermodynamics of bond activations will also be analyzed. Trends in the activation of fluoroaromatic C-H bonds will be presented. Extensions to C-C activation at nickel will also be made, demonstrating critical factors involved in C-C cleavage.
- 3:15 PM Coffee Break**
- 3:45 PM Molecular Constructs as [FeFe]-H<sub>2</sub>ase Enzyme Active Site Biomimetics for Proton Reduction** Professor Marcetta Y. Darensbourg  
Texas A & M University

The structurally unique diiron catalytic unit that exists in the active site of the [FeFe]-H<sub>2</sub>ase is of special interest to biomimetic/synthetic chemists as its construction exploits diatomic CO and CN<sup>-</sup> ligands, perhaps deriving from primordial iron/sulfur chemistry, rather than typical donors covalently bound to a peptide chain. Thus the torsion angles responsible for the mismatch of donor ligand-metal geometric preferences that lead to high rates of catalysis in classical transition metal biocatalysts are minimal in such organometallics. These features, along with the ease of modifying a simple precursor, (μ-S(CH<sub>2</sub>)<sub>3</sub>S)[Fe(CO)<sub>3</sub>]<sub>2</sub>, that has core features of the [FeFe]-H<sub>2</sub>ase enzyme active site (eas), and the possibility to develop base metal catalysts for fuel cell use, have attracted a new coterie of chemists to biomimetic synthesis. They bring the spectroscopic tools and structure/bonding approaches of organometallic chemistry to bear on defining the features that are the primary differences between the eas and the parent model. This lecture will describe approaches to stabilize and isolate the unusual « rotated » structure, and insight gained into Nature's choice of the diiron construct.

4:30 PM **Making Solar Hydrogen**

**Professor Richard Eisenberg  
NICHOLS MEDALIST**

One of this century's greatest scientific and technological challenges is the conversion of sunlight into usable energy in a sustainable and environmentally benign way on a global scale. For light to chemical energy conversion in a designed photosynthetic system, the splitting of water into its constituent elements is the key energy-storing reaction. As with natural photosynthesis, such a system relies on light absorption, charge separation, and catalysis. Recent efforts focus on new catalysts, light absorbers and system compatibility for the visible light-driven generation of hydrogen from aqueous protons. The light absorbers include metal complexes with charge transfer (CT) excited states, organic dyes and semiconductor nanoparticles. As catalysts, different sets of metal complexes have been investigated, including previously unstudied systems that exhibit high activity. The most active systems yet reported for the reductive half of water splitting will be described, as will mechanistic studies of different systems for hydrogen photogeneration.

5:45 PM **Social Hour**

6:45 PM **William H. Nichols Medal Award Dinner  
Professor Harry B. Gray will Introduce the Medalist**

**Date: Friday, March 15, 2013**

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

Place: Crowne Plaza Hotel, White Plains, NY

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

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

\*\*\*\*\* **RESERVATION FORM** \*\*\*\*\*

**2013 WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM &  
MEDAL AWARD BANQUET in honor of Professor Richard Eisenberg**

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 & banquet at \$150/person, Non-member  
 \_\_\_\_\_ places for the banquet only at \$110/person, ACS member  
 \_\_\_\_\_ places for the banquet only at \$120/person, Non-member  
 \_\_\_\_\_ places for the symposium only at \$40/person, ACS member  
 \_\_\_\_\_ places for the symposium only at \$60/person, Non-member  
 \_\_\_\_\_ places for the symposium only at \$25/person, Students and Unemployed

(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 \_\_\_\_\_  
 \_\_\_\_\_ Prime Rib \_\_\_\_\_  
 \_\_\_\_\_ Salmon \_\_\_\_\_

\_\_\_\_\_ Mail Tickets to:  
 \_\_\_\_\_ Name: \_\_\_\_\_  
 \_\_\_\_\_ Address: \_\_\_\_\_  
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**BANQUET RESERVATION DEADLINE: MARCH 5, 2013**

Please make checks payable to:  
 ACS, NEW YORK SECTION

Check for \$ \_\_\_\_\_ enclosed

## North Jersey Meetings

<http://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:** Monday, February 25, 2013

**Time:** 6:00 PM

**Place:** Fairleigh Dickinson University  
Hartman Lounge, The Mansion  
285 Madison Ave  
Madison, NJ

**Cost:** \$5.00 - pizza dinner

Directions can be found using map quest and the address above. A map of the campus can be found at <http://www.fdu.edu/fm.html>.

Parking is available in the Mansion Lot.

Reservations: call (973) 822-2575 or email [njacsoffice@aol.com](mailto:njacsoffice@aol.com) prior to **Wednesday, February 20, 2013**.

Dinner at the Section Meeting is payable at the door. However, if you are not able to attend and did not cancel your reservation, you are responsible for the price of your dinner.



### 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, February 11, 2013

**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](http://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](mailto:billherits@earthlink.net).

See [www.njacs.org](http://www.njacs.org) under the Career tab for Jobs hidden from sight and relevant blogs.



### LABORATORY ROBOTICS INTEREST GROUP

#### Laboratory Automation - A View From the Bench

##### Preliminary Program:

"The Bright and Dark Sides of Fluorescent Nucleic Acid Hybridization Probes"

*Salvatore A. E. Marras, Ph.D.*

Public Health Research Institute  
New Jersey Medical School - University of Medicine & Dentistry of New Jersey

"Surrendering to the Robot Army: Why We Resist Automation in Drug Discovery and Development"

*Lucinda Cohen, Ph.D.*

Director, NJ Discovery Bioanalytical Group  
Merck Research Laboratories

"Transgenic Zebrafish in Microplates, a Novel Screening Method for Environmental Contamination"

*Carlos Molina, Ph.D.*

Dept. of Biology and Molecular Biology  
Montclair State University

"Applications of Laboratory Automation and DoE to Generate Data-Rich Statistical Models of Chemical Reactions for Process Development"

*Victor Rosso* (Principal Author), *Jose Tabora*, *Jacob Janey*, *Vicky Vydra* and *Erik Rubin*

Chemical Development  
Bristol-Myers Squibb, New Brunswick, NJ

Other speakers are scheduled including a scientific representative from the American Cancer Society to talk about future directions in cancer research.

Student Poster: "Design and Evaluation of

a Mobile Phone-Compatible Wireless Electrocardiograph”

Principal Author: *Catherine Wong*

Teacher: Ms. Erin Colfax

Morristown High School

Student Poster: “How Rising Water Temperatures Will Affect *Mytilus galloprovincialis* (Mediterranean blue mussel) Population”

Principal Author: *Naomi Pohl*

Teacher: Erin Colfax

Morristown High School

**Date:** **Wednesday, February 20, 2013,**

**Times:** Doors open at 6:00 PM for a free buffet, networking, and student poster contest.

Technical program 7:00 PM

**Place:** The Hotel Somerset

110 Davidson Avenue  
Somerset, NJ

**Cost:** Meeting is free but pre-registration is requested to insure enough food is ordered for everyone.

To register go to the Mid-Atlantic Chapter Laboratory Robotics Interest Group homepage ([http://lab-robotics.org/mid\\_atlantic/](http://lab-robotics.org/mid_atlantic/)) and follow the meeting links to the registration page.

For information about this meeting, please contact Kevin Olsen. [Olсенk@Mail.Montclair.Edu](mailto:Olсенk@Mail.Montclair.Edu) or (973) 655-4076



## NMR TOPICAL GROUP

**Structural Studies of Small Multidrug Resistance Membrane Proteins by Oriented and Magic-Angle-Spinning Solid-State NMR Spectroscopy in Lipid Bilayers**

**Speaker:** Dr. Nate Traaseth  
Assistant Professor  
Department of Chemistry  
New York University

Multidrug resistance (MDR) is a pervasive clinical problem that reduces the effectiveness of treatment against bacterial infections, viral infections, and cancer. Efflux of drugs across the lipid bilayer by MDR membrane protein transporters is one way in which resistance is conferred to the host organism or cell. To derive a structure/function relationship for this class of proteins, our study uses the small multidrug resistance (SMR) family as a model system for deciphering the mechanism of transport with the

long-term goal of decoding the evolutionary importance of the transporter family. We used solid-state NMR (SSNMR) spectroscopy to study the topology and structure of EmrE in liposomes (magic-angle-spinning or MAS) and magnetically aligned lipid bilayers (oriented SSNMR or O-SSNMR). The MAS experiments were used to map chemical shift perturbations upon drug binding while the O-SSNMR experiments revealed the change in helix orientation upon binding and transport. Together these complementary techniques showed that drug binding perturbs both the structure of EmrE as well as the helical orientations with respect to the lipid bilayer.

Door Prizes!

**Date:** **Wednesday, February 20, 2013**

**Times:** Dinner 6:00 PM

Seminar 7:00 PM

**Place:** Fuji Japanese Sushi & Seafood

1345 US Route 1,  
North Brunswick, NJ

**Cost:** Dinner \$15 (\$5 for Student / postdoc / retired)

No charge for seminar only.

Register online at

<http://www.njacs.org/nmr.html>

or via e-mail to

[luciano.mueller@bms.com](mailto:luciano.mueller@bms.com)



## NMR TOPICAL GROUP

### 2012 Activities

*Co-Chairs:* Charles Pathirana  
Luciano Mueller

NJACS NMR Topical group had a successful and an exciting year. Monthly meetings continued to be held at Fuji Buffet on Route 1 in North Brunswick, NJ. We had seven monthly meetings featuring four speakers from NJ or surrounding areas and three speakers selected by sponsors. In addition to listening to an inspiring seminar, attendees had the opportunity to taste Japanese-Chinese cuisine including a wide selection of sushi while interacting with people who share a common interest in NMR. At every meeting, beverages including soft drinks and wine were available to attendees free of charge. At the end of each meeting, the speaker had the privilege to draw the winning raffle tickets to identify the lucky winners of two door prizes. Our monthly meeting in October was replaced by a mini

(continued on page 18)

## NJACS NMR TOPICAL GROUP

(continued from page 17)

symposium (see below).

January meeting featured ACD labs. Ryan Sasaki, NMR Product Marketing Manager, ACD Labs spoke on "ACD/Spectrus – A Continuing Evolution of Leveraging Chemical and Analytical Knowledge" on **January 18**.

Professor David Rovnyak from Bucknell University, PA was the speaker at the Meeting on **February 15**. His presentation was on "Enabling Enhanced Sensitivity in nD-NMR by Non-Uniform Sampling and Applications."

Dr. Thomas Williamson from Merck & Co. spoke on "What's New in Stereochemical Determination by NMR" at the **March 14th** meeting.

The **May 23rd** meeting was sponsored by Agilent as Agilent Night. Two presenters from Agilent gave presentations to a packed audience. Ron Crouch, Sr. Applications Scientist, presented on "Investigating Quantification Precision with  $^1\text{H}$  and  $^{13}\text{C}$ " and Corey Morcombe, Research Products Manager, presented on "Agilent Update from ENC and On-going Activities for NMR."

At the **June 13th** meeting, Dr. Anuji Abraham from Bristol-Myers Squibb, New Brunswick was the seminar speaker. Her seminar was on "On the Importance of Solid-state NMR in Pharmaceutical Development."

Bruker-Biospin sponsored Bruker Night on **September 19**. At this heavily attended meeting, Senior Applications Scientist at Bruker-Biospin, Dr. Amy Freund, presented a seminar on "An in-depth look at using adiabatic pulses for more than just carbon  $^{180}$  degree pulses: A look at old and new pulses and their many uses from  $^{19}\text{F}$  NMR to multi-site band decoupling."

The highlight of the year was the symposium which hosted an impressive group of world renowned leaders in biological NMR. The 2012 NJ ACS NMR Symposium held on **October 24th** at the Fiber Optics Auditorium at the Busch Campus of Rutgers University focused on NMR in Biomedical Research. Four leaders in the forefront of NMR research made presentations to a crowd of over 100 attendees.

Professor Gaetano Montelione, Jerome and Loraine Aresty Chair from the Center for Advanced Biotechnology and Medicine and Department of Molecular Biology and Biochemistry at Rutgers, The State University of New Jersey, gave an overview of the streamlined tools his team has developed in order to determine high-quality NMR struc-

tures in a high throughput setting. His talk was entitled "Improved Technologies for Protein Structure Determination by Solution NMR." A key feature of the methodology he presented was the ability to selectively refine structurally well-defined segments of a protein. The next talk was presented by Professor James Prestegard, a world expert on NMR in glycoproteins. He is the Eminent Scholar of NMR Spectroscopy and Professor of Chemistry and Biochemistry at University of Georgia. He impressed the audience with a lively presentation entitled "NMR Approaches to the Structure and Dynamics of Glycoproteins." By his talk on "To Isolate or Not? The Sometimes Circuitous Route to the Characterization of Impurities and Degradation Products," Dr. Gary Martin, Sr. Principal Scientist at Merck Research Labs had no trouble persuading the audience that NMR characterization of small molecules can be fraught with serious challenges. The last speaker of the day was Dr. Ad Bax, Chief, Biophysical NMR Spectroscopy, NIH who is one of the world's foremost experts in NMR methodology. In his talk on "pH-Triggered, Activated State Conformations of the Influenza Hemagglutinin Fusion Peptide Probed by NMR," he presented a beautiful illustration of the versatility and power of modern NMR. Utilizing a suite of state of the art NMR methods, he and his coworkers deciphered key events in molecular re-arrangement of membrane associated hemagglutinin which mediate the fusion of influenza viral particle with host cells. The attendees had the opportunity to listen to these exciting presentations and ample time to interact with speakers and fellow attendees over snacks during a mid-symposium break and a generous post-symposium reception sponsored by Cambridge Isotope Laboratories.

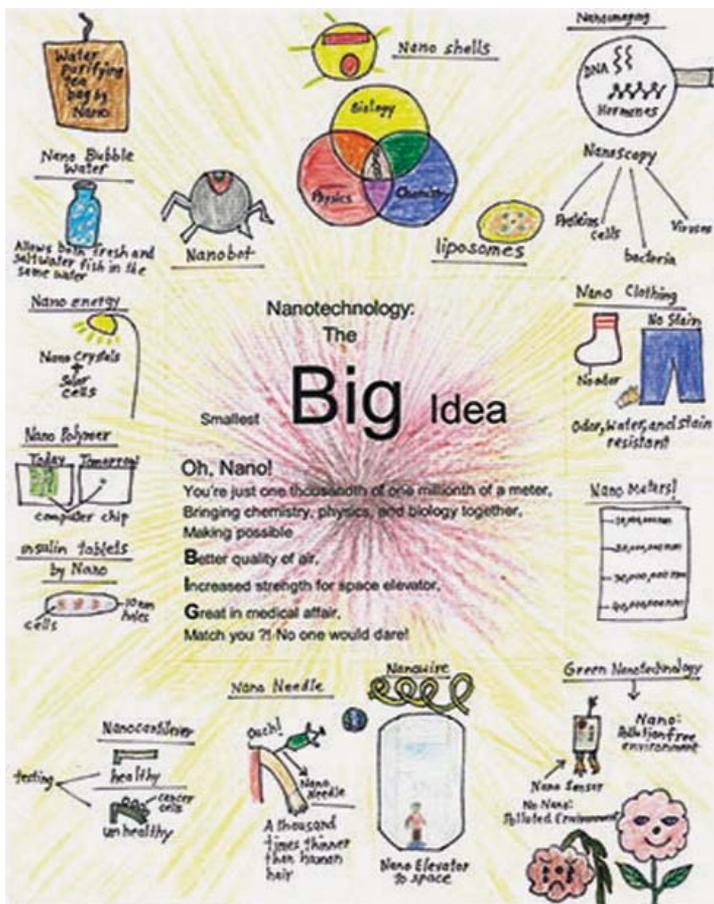
The final meeting of the year was held on **November 14th** at the usual venue in North Brunswick. Dr. Roberto Gil from Carnegie Mellon University, Pittsburgh was the seminar speaker who spoke on "Structural Analysis of Small Organic Molecules Assisted by Residual Dipolar Couplings."

In closing, we wish to acknowledge the contributions from the following sponsors in support of monthly meetings and the October 24 symposium:

ACD Labs, Agilent Technologies, Bruker-Biospin, Cambridge Isotope Laboratories Inc., Fuji Buffet, JEOL USA Inc., Mestrelab Research, New Era Enterprises, Sigma-Aldrich and Wilmad LabGlass.

Charles Pathirana & Luciano Mueller

## NORTH JERSEY SECTION NATIONAL CHEMISTRY WEEK POSTER CONTEST WINNER



One of our entries placed second at her grade level in the national NCW poetry contest — Sunay Dubey, 5th Grade, Martin Luther King Jr. Elementary School.

(Photo courtesy of Bill Suits)

### RESIDENTIAL SCHOOL ON MEDICINAL CHEMISTRY: BIOLOGY AND CHEMISTRY OF DRUG DISCOVERY

The Residential School offers an intensive graduate-level course organized to provide an accelerated program for medicinal chemists, biologists and other industrial and academic scientists who wish to broaden their knowledge of drug discovery and development. The aim of the school is to concentrate on the fundamentals of drug

discovery, spanning initial target selection through clinical development. The five-day program consists of nineteen lectures and five case histories of successful drug discovery and development programs. (See ad on page 20.)

**Date:** June 3-7, 2013

**Place:** Drew University  
Madison, NJ

For more information and application forms visit our website, [www.drew.edu/resmed](http://www.drew.edu/resmed), email [resmed@drew.edu](mailto:resmed@drew.edu), phone (973) 408-3787 or fax (973) 408-3504.

## WANT TO HELP? RETIRED? BETWEEN JOBS?

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Recently retired, in good health and looking for a new way to add value? Join our volunteers. Many are active consultants. Spending a day in our lab helping students provides you with the opportunity to work with these professionals, bright students and share your talents.

Between jobs, actively interviewing and trying to make a good impression? We need you and you need us! HR Executives are favorably impressed when they read your resume and see that you have volunteered at Students 2 Science. Spend time with other professionals and receive free career guidance and coaching.

**Residential School on Medicinal Chemistry:  
Biology and Chemistry of Drug Discovery**  
June 3-7, 2013  
Drew University, Madison, NJ

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

Principles of Med Chemistry	DMPK
Cheminformatics	Toxic Metabolites
Lead Identification	GPCRs
Lead Optimization	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](http://www.drew.edu/resmed)  
e-mail: [resmed@drew.edu](mailto:resmed@drew.edu)  
phone: 973/408-3787; fax: 973/408-3504

The day is fun. Spending the day working with these students really renews your faith in the future. They are smart and energetic, and they appreciate the opportunity to work in an authentic laboratory environment with a real scientific professional like you. You will leave invigorated and optimistic, knowing that you had a positive impact on a young student's life.

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Please take a look at our website, [www.students2science.org](http://www.students2science.org), and call me at (908) 334- 8435 to discuss. I look forward to working with you!



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## Others

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### NJIT — OTTO H. YORK DEPARTMENT OF CHEMICAL, BIOLOGICAL AND PHARMA- CEUTICAL ENGINEERING

#### Graduate Seminar Series — Spring 2013

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#### February 4

Fluid Mixing in the Pharmaceutical Industry,  
"Challenges and Solutions"

*Professor Piero Armenante*  
Dept. of Chemical, Biological and  
Pharmaceutical Engineering, NJIT

#### February 11

"Roles of Computational Analysis to Optimize  
a Wide Range of Polymeric Materials and  
Plant Scale Processes"

*Dr. Steven Arturo*  
Associate Scientist  
The Dow Chemical Company  
Spring House, PA

#### February 18

"Stochastic versus Deterministic: Human  
Health versus Engineering Risk  
Assessments"

*Dr. Jeffrey Lewis*  
Section Head  
Epidemiology and Health Surveillance  
Exxon Mobil Biomedical Science, Inc.  
Clinton, NJ

#### February 25

"Overcoming Pharmaceutical Powder  
Problems through Crystal and Particle  
Engineering"

*Professor Changquan Cahin Sun*  
Department of Pharmaceutics  
College of Pharmacy, Minneapolis, MN

#### March 4

"Downstream Process Development for  
Monoclonal Antibodies"

*Dr. Nihal Tuycu*  
Merck & Co. Inc.  
Department of Chemical Engineering  
Michigan Technological University  
Houghton, MI

#### March 11

"Small Scale Rheology for Screening Scarce  
Materials"

*Professor Eric M. Furst*  
Director, Center for Molecular and  
Engineering Thermodynamics  
University of Delaware, Newark, DE

#### March 25

"Thermochemistry and Elementary Reaction  
Kinetic Models for Reactions of Mercury with  
Halogens, NOx and SOx: Atmospheric and  
Combustion Environments"

*Ms Itsaso Auzmendi-Murua*  
PhD Candidate  
Dept. of Chemical, Biological &  
Pharmaceutical Engineering, NJIT

#### April 1

"An Industry Perspective on Materials  
Characterization Techniques at the  
Molecular, Particulate and Bulk Level in  
Support of Pharmaceutical Product  
Manufacturing"

*Dr. Steven Conway*  
Merck & Co., Inc.  
Whitehouse Station, NJ

#### April 8

"Intermetallic Base-Metal Catalysts for  
Chemoselective Reactions: Viable  
Replacements for Monometallic and  
Bimetallic Precious Metal Catalysts"

*Professor Robert M. Rioux*  
Friedrich G. Heffferich Professor  
Dept of Chemical Engineering  
The Pennsylvania State University.

#### April 15

"Catalysis and the Nature of Mixed Metal  
Oxides at the Nanometer Level"

*Dr. Dario J. Stacchiola*  
Dept. of Chemistry  
Brookhaven National Laboratory.

#### April 22

"TBA"

*Dr. Guang Cao*  
Section Head of the Catalytic Systems  
Section at the Corporate Strategic Research  
Labs  
ExxonMobil Corp

#### April 29

"Nanomaterials for Energy Devices"  
*Professeur Laberty-Robert*  
Polytech Paris Laboratoire de Chimie de la  
Matiere Condensee de Paris UPMC

#### May 6

"Nanoclusters of Boron and Gold"

*Professor Lai-Sheng Wang*  
Dept. of Chemistry  
Brown University

OPEN TO PUBLIC

Times: Refreshments 2:30 PM  
Seminars 2:45 PM  
Place: Room 117, Kupfrian Hall  
NJIT

Seminar Coordinator: Professor Reginald  
Tomkins, 973-596-5656, [tomkinsr@njit.edu](mailto:tomkinsr@njit.edu)

## Call for Nominations

### EDWARD J. MERRILL AWARD FOR OUTSTANDING HIGH SCHOOL CHEMISTRY TEACHER FOR 2013

Now is the time to begin thinking about nominations for the Edward J. Merrill Award, North Jersey Section, for Outstanding High School Chemistry Teacher for the year 2013.

Go to the web site, [njacs.org](http://njacs.org) under education and obtain your preliminary nomination form and guidelines. The full packet takes time to do a good job!

We all know an outstanding high school chemistry teacher. Perhaps one from your town, your son's or daughter's teacher or just one that you have heard about or worked with at some point. The award carries \$500 for the teacher, \$500 in supplies for the teacher's classroom and a plaque to display at home or in the classroom.

Any questions or help needed contact Bettyann Howson, [chemphun@gmail.com](mailto:chemphun@gmail.com).



### WCS DISTINGUISHED SCIENTIST AWARD 2013

The Westchester Chemical Society is accepting nominations for the "WCS Distinguished Scientist Award 2013". 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, 2013** to Dr. Paul Dillon at [PaulWDillon2@hotmail.com](mailto:PaulWDillon2@hotmail.com) or 67 Matthes Road, Briarcliff Manor, NY 10510.



### ACS LOCAL SECTIONS ACTIVITIES – CHEM LUMINARY AWARDS

Dear Local Section Officers and Councilors, The Committee on Local Sections Activities (LSAC) looks forward to receiving your local section's annual report. In addition, LSAC encourages you to nominate your section's activities for any relevant ChemLuminary Awards when submitting your annual report. As you know, annual reports and ChemLuminary self-nominations are entered through FORMS with a submission deadline of **February 15, 2013**.

There are 41 awards available for self-nomination. Each award is sponsored by an ACS Committee, which has established criteria and a selection process for the award. LSAC sponsors four awards and welcomes your submission. The four awards are:

- Best Activity or Program in a Local Section Stimulating Member Involvement
- Local Section Partnership Award
- Most Innovative New Activity or Program Outstanding Performance by a Local Section (one award per section size category)
- Outstanding Performance (this award is based on the total activity of the section including successful section management)

Visit [www.acs.org/chemluminary](http://www.acs.org/chemluminary) for complete lists of past winners since 2007. If you have any questions regarding FORMS or the ChemLuminary Award self-nomination process, please contact [forms@acs.org](mailto:forms@acs.org).

As always, thank you for your service and continued community engagement.



### ACS INTERNATIONAL ACTIVITIES COMMITTEE – 2012 GLOBAL ENGAGEMENT CHEM LUMINARY AWARD

The ACS International Activities Committee (IAC) invites you to self-nominate for the 2012 Global Engagement ChemLuminary Award, which will honor an ACS Local Section in recognition of its efforts in the international realm, particularly in engaging ACS International Chemical Sciences Chapters.

The IAC recognizes that many groups may already be engaged in some of these activities, but desires to see this award promote international engagement both within and outside the traditional realm of the Society, with a particular focus on work associated with International Chapters.

Nominees should provide written evidence of their involvement in as many of the following areas and highlight the international aspect of each:

- Enhance international cooperation by serving as a focal point or information source for activities by ACS International Chapters, national chemical societies,

educational institutions, industry, governmental, and non-governmental organizations.

- Improve the understanding and appreciation of chemistry by the public.
- Promote the role of chemistry in contributing to solutions to global challenges.
- Build capacity by engaging young people with scientific disciplines, especially the scientific method of analysis developed by hypothesis, experiment, analysis, and conclusions.

Self-nominations for the 2012 awards, to be given out during the fall National Meeting in Indianapolis, are now being accepted via FORMS. The deadline for submission is **February 15, 2013**.

If you have any questions regarding FORMS or the ChemLuminary Award self-nomination process, please contact [forms@acs.org](mailto:forms@acs.org).

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## Call for Papers

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### **5TH OCULAR DISEASES AND DRUG DEVELOPMENT CONFERENCE**

**Submit an abstract by Feb 21, 2013**

Leading scientists, researchers, and experts gather to discuss and collaborate on the latest research and discovery, safety assessment, and drugs in development for combating and curing ocular diseases. Age-related macular degeneration (AMD), retina diseases, diabetic retinopathy, glaucoma, DME, etc. are the focus of discussion and discovery at the 5th Ocular Diseases and Drug Development Conference (**March 21-22, 2013** in San Francisco, CA).

Don't miss this opportunity to network in an intimate setting while discussing the latest discoveries and development from top researchers!

To be considered for an oral presentation, please submit an abstract **by February 21, 2013**. Selected presentations will be based on quality of abstract and availability. Presentation slots fill up fast so please submit your abstract ASAP.

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