



**Dr. Hiroko I. Karan**  
**2011 New York Section Chair**

- **The New York Section announces the 2011 Nichols Symposium, see pages 12-13.**
- **The ballots for this year's NoJ ACS election is in the mail. Please look for it and vote.**
- **NoJ ACS brings you a half-day symposium on Regulatory-CMC (Chemistry, Manufacturing and Control) on Thursday, December 2. (See page 14.)**

## Education



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The inheritance of different functional states without any change in the sequence of DNA. Molecular mechanisms and biological processes in epigenetic modifications. DNA methylation, histone tails, chromatin structure, nucleosome occupancy, heterochromatin assembly, gene silencing, siRNA and miRNA, cancers and aging.

*Prereq.* – U.G. cell biology and genetics      *Prof. J. Glavy*

##### **COMPUTATIONAL BIOLOGY- Ch 668 (*Monday eve.*)**

Interface of computer technology and biology - molecular sequence analysis, phylogeny generation, structure simulation and modeling of site-directed mutagenesis.

*Prereq.* – Biochemistry      *Prof. N. Murgolo*

#### ***And Also***

Advanced Instrumental Analysis – Ch 660 (*Wed. eve.*)

Advanced Inorganic Chemistry – Ch 610 (*Fri. eve.*)

Kinetics & Thermodynamics – Ch 620 (*Tue. eve.*)

Advanced Physical Chemistry – Ch 520 (*Mon. eve.*)

Biochemistry I – Ch 580 (*Thurs. eve.*)

Biochemical Chemistry – Ch 582 (*Wed. eve.*)

Immunology – Ch 686 (*Tue. eve.*)

Molecular Biology Lab Techniques – Ch 684 (*Sat., 9 AM-12 PM*)

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**THE INDICATOR****Manager / Editor** - LINDA ATKINS

1 Milbark Court West, Homosassa, FL 34446

973-981-4383; Fax 352-503-7613

[linatkins@tampabay.rr.com](mailto:linatkins@tampabay.rr.com)**Advertising Manager** - VINCENT GALE

MBO Services

PO Box 1150, Marshfield, MA 02050-1150

781-837-0424

[vincegale@mboservices.net](mailto:vincegale@mboservices.net)**INDICATOR COMMITTEE****Chair**

DR. LES McQUIRE

17 Crown Drive, Warren, NJ 07059

908-334-5473, [Les@LesMcQuire.org](mailto:Les@LesMcQuire.org)**New York Section Rep.**

DR. NEIL JESPERSEN

Chemistry Dept., St. John's University

8000 Utopia Parkway, Jamaica, NY 11439

718-990-5221, [jespersen@stjohns.edu](mailto:jespersen@stjohns.edu)**North Jersey Section Rep.**

DR. ANITA BRANDOLINI

TAS, Ramapo College, 505 Ramapo Valley Rd.,

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[abrandol@ramapo.edu](mailto:abrandol@ramapo.edu)**Web Masters**

NY Section - DR. BRIAN GIBNEY

[postmaster@newyorkacs.org](mailto:postmaster@newyorkacs.org)

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2490 Sycamore Avenue, Wantagh, NY 11793

516-783-6281; Fax 516-783-7391

[frank.romano@agilent.com](mailto:frank.romano@agilent.com)**Chair-Elect, DR. HIROKO I. KARAN**

Department of Physical, Environmental and

Computer Sciences, Medgar Evers College,

The City University of New York,

1650 Bedford Avenue, Brooklyn, NY 11225

718-270-5168; Fax 718-270-6197

[hiroko@mec.cuny.edu](mailto:hiroko@mec.cuny.edu)**Secretary, DR. MARGARET MANDZIUK**

16 East 8th Street, #4R, New York, NY 10003

212-979-6063

[margaret.mandziuk@gmail.com](mailto:margaret.mandziuk@gmail.com)**Section Office**

St. John's University, Chemistry Dept.

8000 Utopia Parkway, Jamaica, NY 11439

516-883-7510; Fax 516-883-4003

[njesper1@optonline.net](mailto:njesper1@optonline.net)**NORTH JERSEY SECTION**<http://www.njacs.org>**Chair, DR. AMBARISH SINGH**

Bristol-Myers Squibb Company, P.O. Box 5400,

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[asingh.njacs@gmail.com](mailto:asingh.njacs@gmail.com)**Chair-Elect, JIWEN CHEN**

Bristol-Myers Squibb Company, 3B 0.01, 311

Pennington-Rocky Hill Road, Pennington, NJ 08534

609-818-6319

[jiwen.chen@yahoo.com](mailto:jiwen.chen@yahoo.com)**Secretary, BETTYANN HOWSON**

49 Hillside Avenue, Madison, NJ 07940-2612

973-822-2575

[chemphun@optonline.net](mailto:chemphun@optonline.net)**Section Office**

4 Cameron Road, Piscataway, NJ 08854

732-463-7271; [NJACSoffice@aol.com](mailto:NJACSoffice@aol.com)**THE Indicator** 

The monthly newsletter of the New York & North Jersey Sections of the American Chemical Society. Published jointly by the two sections.

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**EDITORIAL DEADLINES**

January 2011	November 15, 2010
February	December 15
March	January 15, 2011
April	February 15
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November	September 15
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*The Indicator* (ISSN0019-6924) is published monthly except July and August by the New York and North Jersey Sections of the American Chemical Society, Office of Publication, 1 Milbark Court West, Homosassa, FL 34446. **Periodicals Postage Paid at Homosassa, Florida and at additional mailing offices.**

**POSTMASTER:** Send address changes to American Chemical Society, Department of Member and Subscriber Services, *THE INDICATOR*, P.O. Box 3337, Columbus, OH 43210, or e-mail: [service@acs.org](mailto:service@acs.org).

All views expressed are those of the editor and contributors and do not necessarily represent the official position of the New York and North Jersey Sections of the American Chemical Society unless so stated. **Subscription price included in dues paid by New York and North Jersey Section members. Distributed electronically to members through the website [www.TheIndicator.org](http://www.TheIndicator.org) and monthly emailings. Non-members are invited to read it online. Members should register their email addresses at [www.acs.org/update](http://www.acs.org/update).**

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

## December Calendar

### NEW YORK SECTION

**Thursday, December 9, 2010**  
Long Island Subsection  
See pages 8-9.

**Wednesday, December 8, 2010**  
Westchester Chemical Society  
See page 9.

**Thursday, December 9, 2010**  
Chemical Marketing & Economics Group  
See pages 9-10.

**Friday, December 17, 2010**  
High School Teachers Topical Group  
See page 10.

### NORTH JERSEY SECTION

**Thursday, December 2, 2010**  
Careers in Transition  
See page 14.

**Thursday, December 2, 2010**  
NoJ Teacher Affiliates Executive Meeting  
See page 14.

**Thursday, December 2, 2010**  
2010 Regulatory CMC Symposium  
See page 14.

**Tuesday, December 7, 2010**  
ChemTAG Meeting  
See page 14.

**Deadline for items to be included in the February 2011 issue of *The Indicator* is December 15, 2010.**

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

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## **THIS MONTH IN CHEMICAL HISTORY**

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

***Prepared for SCALACS, the Journal of the Southern California, Orange County, and San Geronio Sections of the American Chemical Society***

What would you expect to find inside a textbook titled “Engineering Chemistry”? If, like me, you’ve taught chemistry to generations of budding engineers you might guess that there would be an overview of introductory general chemistry plus some materials science, possibly heavy on physical properties, states of matter, and some thermodynamics. I’m afraid I posed a trick question without giving you all the facts. This particular textbook was lent to me by a colleague who is retiring and was moving his books out of his office. This copy of “Engineering Chemistry” 3rd. edition was authored by Thomas B. Stillman M.Sc., Ph.D., Professor of Analytical Chemistry in the Stevens Institute of Technology, and was published by the Chemical Publishing Company of Easton Pa. in 1905. The book is subtitled “A Manual of Quantitative Chemical Analysis for the use of Students, Chemists, and Engineers.

Thomas B. Stillman obtained his B.S. at Rutgers in 1873 (Phi Beta Kappa) and was an assistant at Stevens from 1874-76 while he earned an M.Sc. from Rutgers. He traveled to Wiesbaden in Germany and from 1876-79 worked in the laboratory of Fresenius. To quote from “A History of Analytical Chemistry, H.A. Laitinen and G.W. Ewing eds. (ACS 1977) “Karl Remigius Fresenius (1818 – 1897) is generally recognized as the leader in the development of chemical analysis ... during the second half of the 19th. century.” So Stillman learned from the best. After a period as an independent consultant he joined the faculty of Stevens Institute where he was a productive and successful teacher and author. His “Engineering Chemistry” first appeared in 1900 and is a manual of advanced analytical chemistry applied to the materials used by engineers. It includes 139 engraved illustrations, many of which caught my eye.

In a chapter on the determination of copper in copper sulphate (Stillman’s spelling; when did f replace ph in the name of element number 16 in the U.S.?) the methods include gravimetrically by precipitation as copper oxide; volumetrically with potassium cyanide solution; and as metallic copper by electrolysis. As an alternative to the usual primary cells in this last procedure Stillman suggests the use of Guelcher’s thermoelectric pile, a piece of equipment I had not previously encountered. The pile, which is illustrated, looks somewhat like an old-fashioned radiator. It runs on natural gas which is used to heat the 66 elements of nickel and an antimony alloy. The thermoelectric current is delivered at 4 volts and 3 amperes, and the pile consumes 170 liters of gas per hour. I’m too lazy to calculate the efficiency of this apparatus – but it probably won’t be used as is in an electric car.

The text includes many analyses that you’re unlikely to find in university and college analytical chemistry laboratory classes, except perhaps as special projects: coal and coke; blast-furnace slag; water for locomotive and boiler use; boiler scale; heating power of coal and coke; chimney gases; producer gas; photometry (one of Stillman’s specialties); tin-plate; Portland cement; clay; bricks; asphalt; paper; soap; and oils and petroleum among many others. In nearly 600 pages this book is a tour-de-force of analytical chemistry as practiced in the early 20th. century.

I’ll close with a couple of further nuggets (pardon the pun) from Professor Stillman’s career. In 1908 he made the headlines with his discovery of gold in soil excavated in Hoboken N.J. (no gold mines there currently though!). And in 1906 he hosted at the Hotel Astor in New York “a famous synthetic dinner” at which everything but the meats was synthesized chemically. This captured the attention of the “Good Housekeeping” magazine which has an extended interview with Stillman in 1907 (Vol. 45). You can find it on-line, and it is graced with a splendid photograph of the heavily moustached Professor Stillman in his laboratory.

## **DECEMBER HISTORICAL EVENTS IN CHEMISTRY**

by Leopold May, The Catholic University of America, Washington, DC

### **December 1, 1743**

Martin H. Klaproth, who discovered cerium with J. Jacob Berzelius and William Hisinger, was born on this date. He also discovered zirconium in 1789, uranium from pitchblende in 1789, and chromium that had been discovered previously by N. L. Vauquelin in 1797.

### **December 3, 1886**

Karl Manne Georg Siegbahn, who was a researcher in x ray spectroscopy, was born on this date. In 1924, he was awarded the Nobel Prize in Physics for his discoveries and researching the field of X-ray spectroscopy.

### **December 6, 1835**

One hundred and seventy-five years ago, Rudolf Fittig was born on this date. He synthesized organic compounds, e.g., lactones, with B. C. G. Tollens; synthesized toluene; discovered diphenyl, phenanthrene, 1872, and coumarone, 1883.

### **December 7, 1810**

Two hundred years ago, Theodor Schwann was born. He named and investigated pepsin, 1836, coined the word metabolism; discovered the striated muscle of the upper esophagus and the myelin sheath of peripheral axons, called Schwann cells; and was the founder of modern histology.

### **December 8, 1878**

Eugene C. Bingham, who was born on this date, was a researcher on plastic flow and viscosity.

### **December 10, 1967**

"Project Gasbuggy", the world's first commercial experiment with nuclear mining under New Mexico desert, was started on this date.

### **December 12, 1960**

Fifty years ago, it was announced at meeting of American Nuclear Society that the first pure compound of californium (Cf, 98) was synthesized.

### **December 13, 1935**

Seventy-five years ago on this date, F. Victor Grignard died. He developed the magnesium reagent used in organic chemistry and was awarded the Nobel Prize in 1912 for the discovery of the so-called Grignard reagent, which in recent years has greatly advanced the progress of organic chemistry; shared the prize with Paul Sabatier who received it because for his presence of finely disintegrated metals whereby the progress of organic chemistry has been greatly advanced in recent years. He was born on May 6, 1871.

### **December 16, 1929**

Bruce N. Ames developed the Ames Test, an indicator of carcinogenicity of chemicals that measures the rate of mutation by a chemical in bacteria. He was born on this date.

### **December 17, 1908**

Fifty years ago, Willard F. Libby was awarded the Nobel Prize in Chemistry for his method to use carbon 14 for age determination in archaeology, geology, geophysics, and other branches of science. He was born on this date.

### **December 19, 1949**

Berkelium was discovered by ion exchange chromatography at University of California, Berkeley on this date.

### **December 22, 1903**

Haldan K. Hartline, who was born on this date, performed single-fiber analysis of the optic responses of the vertebrate retina. He was a researcher in night vision in humans. He shared the Nobel Prize in Physiology or Medicine in 1976 with G. Wald and R. Granit, for their discoveries concerning the primary physiological and chemical visual processes in the eye.

### **December 23, 1829**

Paul Schützenberger, a researcher in physiological chemistry, was born on this date. He prepared cellulose acetate in 1865 with Laurent Naudin.

### **December 25, 1761**

In 1791, Rev. William Gregor discovered titanium. He also analyzed minerals and was born on this date.

### **December 25, 1904**

Gerhard Herzberg, researcher on the electronic structure and geometry of molecules and free radicals using spectroscopy, was born on this date. In 1971, he received the Nobel Prize in Chemistry for his contributions to the knowledge of electronic structure and geometry of molecules, particularly free radicals.

Additional historical events can be found at Dr. May's website,

<http://faculty.cua.edu/may/Chemistrycalendar.htm>

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## 2011 New York Section Chair's Message

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It is my great pleasure and honor to serve as the 2011 chair of the New York Section of the American Chemical Society. The New York Section is one of the larger local sections of the ACS and has actively served its industrial, educational and community members for over a century.

The section consists of a governing board, six subsections, topical groups and various committees run by volunteers. The section has been recognized by ACS and received numerous Outstanding Larger Section Awards indicative of the excellent and dedicated volunteers in the New York Section. I invite all members to join in section activities, especially those members who have not had a chance to participate in section programs and activities in recent years.

The year begins with the annual section-wide conference on January 15, 2011. After a presentation of awards such as the Nichols High School Chemistry Teacher Award and Outstanding Service Award and a talk by an invited speaker, there will be several group sessions divided into special interest areas where members can join committees and participate in section-wide program activities. We look forward to new volunteers with ideas to enhance section, subsection and committee activities. Also, I would like to take this opportunity to thank active members who have made a tremendous contribution to the New York Section by their continued support.

Other major events of the year are:

- The William H. Nichols Symposium and Award, March 18, 2011, Crown Plaza Hotel, White Plains, N.Y.
- Chemistry Olympiad, March, 2011 at various High Schools
- Chemagination for High School Chemistry Students, March/April, 2011
- The Undergraduate Research Symposium, April, 2011, College of Mount Saint Vincent
- Frances Sterrette Environmental Symposium, May, 2011, Hofstra University
- National Chemistry Week, October, 2011, New York Hall of Science

As you should be aware, 2011 has been designated by ACS as the International year of Chemistry. We expect to have special symposia, seminars and events hosted by subsections, topical groups and other programs to celebrate the international year of chemistry.

Chemistry is everywhere from nano- to macro-scale and is a central discipline of interdisciplinary and collaborative research. It is indispensable to scientific research and our every day life. Cutting edge chemical knowledge is essential and chemical education plays an important role in the future of chemistry, science and society. Hence, we work with you to support diverse interests and purposes to further the future of the chemical profession and society in general.

The NY section recently redid its website ([www.newyorkacs.org](http://www.newyorkacs.org)). Please log in and check out what is happening in section programs and activities and please participate. We welcome your enthusiasm for the section and please let us hear your suggestions and ideas for section activities ([hiroko@mec.cuny.edu](mailto:hiroko@mec.cuny.edu)).

I look forward to working with you all to make 2011 an exciting and successful year for the New York Section.

Best wishes,  
Hiroko Karan, Ph.D.

2011 Chair of the New York Section of the American Chemical Society

## New York Meetings

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

### NEW YORK SECTION BOARD MEETING DATES FOR 2011

The dates for the Board Meetings of the ACS New York Section for 2011 were chosen and approved at the June 2010 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. Refreshments are served at 6:00 PM and the meeting is held at 6:45 PM.

The 2011 Board Meetings will be held on the following Fridays in the library of St. John's University, 8000 Utopia Parkway, Jamaica, NY. Dr. Hiroko I. Karan will chair the meetings.

Friday, February 11, 2011

Friday, April 8, 2011

Friday, June 3, 2011

Friday, September 23, 2011

Friday, November 18, 2011

Also, please mark your calendars with the dates of the two major New York Section events in 2011. More information will be posted in future issues of *The Indicator* and on the New York Section website at <http://www.NewYorkACS.org>.

Saturday, January 15, 2011

Section-Wide Conference

Friday, March 18, 2011

Nichols Symposium and Award Ceremony

## NOMINATING COMMITTEE MEETS IN DECEMBER

The New York Section's Nominating Committee will meet in December to nominate candidates for the 2011 elections.

Positions available are:

Chair-elect for 2012

Treasurer for 2012 - 2013

Directors-at-Large for 2012

Councilors and Alternate Councilors for 2012 - 2014

If a member of the New York Section wishes to run for office or to suggest a member for consideration by the Nominating Committee, please write to the American Chemical Society, New York Section, Inc., Department of Chemistry, St. John's University, 8000 Utopia Parkway, Jamaica, NY 11439 or send an e-mail to the New York Section office at [njesper1@optonline.net](mailto:njesper1@optonline.net) by **November 25, 2010**.



## LONG ISLAND SUBSECTION

### HOLIDAY PARTY AND 2011 BOARD ELECTIONS

#### Detection of Drugs of Abuse in Beverages and Human Urine

*Speaker:* Dr. Elise Champeil

Department of Sciences

John Jay College of Criminal

Justice, CUNY



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We present how 1H NMR spectroscopy can be used for the forensic identification of club drugs in water based matrices. We used a water suppression method called Pre-saturation Utilizing Relaxation Gradients and Echoes (PURGE) to identify and quantify MDMA (ecstasy) in the urine of users and to recognize gamma-Hydroxybutyric acid (GHB) and gamma-Butyrolactone (GBL) in common alcoholic beverages found in clubs. The PURGE method is a fast, non-destructive, sensitive technique and requires no sample preparation.

Elise Champeil graduated from the Ecole Nationale Supérieure de Chimie in France with an Msc. in Chemical Engineering. She then earned her Ph.D. in Organic Chemistry from Trinity College in Ireland. Currently, Elise is an assistant professor of organic chemistry at John Jay College of Criminal Justice, where she teaches organic chemistry courses to students at all levels. Her research interests include: DNA-mitomycin C adducts formation, detection of drugs of abuse by NMR spectroscopy, molecular modeling, fullerene chemistry, and synthesis of molecular sensors.

**Date:** Thursday, December 9, 2010

**Time:** Board elections 6:00PM  
(please visit [http://www.newyorkacs.org/sub\\_island.php](http://www.newyorkacs.org/sub_island.php) for election details)

Followed by seminar and complimentary buffet dinner

**Place:** Nassau Community College  
CCB Building, Room CCB-252  
Garden City, New York 11530

**Directions:**

[www.ncc.edu/About/directions.htm](http://www.ncc.edu/About/directions.htm)



## **WESTCHESTER CHEMICAL SOCIETY**

### **A Personal Perspective on the Development of the Automated Clinical Chemistry Laboratory**

**Speaker:** Jack Levine  
Siemens Healthcare Diagnostics  
Tarrytown, NY

This talk describes the discovery of the Technicon AutoAnalyzer, its commercialization and its introduction to the Clinical Chemistry Laboratory. Much of this work took place in Westchester County. The successor to Technicon, Siemens Diagnostics

has a major research center in Tarrytown, NY. This and other types of laboratory automation have completely changed the role and activities of the clinical chemistry laboratory by automating routine testing. Although the technology described is over 50 years old, the introduction of new technology is an ongoing challenge to all of us involved in applied chemistry applications. The talk will discuss how a dramatic change in technology affected the role of the Clinical Chemist, what is required to successfully commercialize a new analytical system and how the availability of new test information impacted the role of the clinical laboratory.

Jack Levine is currently a Senior Clinical Consultant for the Siemens Healthcare Diagnostics' Technical Solutions Center in Tarrytown, NY. He joined the Technicon Company in Chauncey, NY in July of 1961 as one of their original 100 US employees and their second Clinical Chemist.

**Date:** Wednesday, December 8, 2010

**Times:** Refreshments 5:30 PM  
Lecture 6:00 PM

**Place:** Westchester Community College  
Gateway Building Room 110  
75 Grasslands Road  
Valhalla, NY 10595

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

For more information, contact Paul Dillon:

E-Mail: [paul.dillon@siemens.com](mailto:paul.dillon@siemens.com)



## **CHEMICAL MARKETING & ECONOMICS GROUP — JOINTLY PLANNED AND ORGANIZED WITH AIChE METRO NEW YORK SECTION**

**Fifth Annual Energy & Resource Conference — a full-day conference — “Emerging Sources of Energy — Challenges and Opportunities”**

*Founding Co-Sponsors:* Metro New York Section of the American Institute of Chemical Engineers, and the Chemical Marketing & Economics Group of the New York Section of the American Chemical Society

### **Session 1**

**“Non-GHG Sources of Electric Power”**

*Brad Roberts*

Executive Director

Electricity Storage Association

(continued on page 10)

## CHEMICAL MARKETING & ECONOMICS GROUP

(continued from page 9)

Laurent F. Paty  
Director of Customer Programs  
and Market Development  
Petra Solar

### Session 2

#### “Alternative Transportation Needs”

*Sabrina Hawkins*  
Chemical Engineer  
Advanced Programs Group  
Propulsion and Controls Div.  
ATK (Alliant Techsystems Inc.)

*Prof. Jay Benziger*  
Dept. of Chemical and Biological  
Engineering  
Princeton University

### Session 3

#### “Resource Nationalism”

*Patricia J. Loferski*  
Platinum-Group Metals Commodity  
Specialist  
U.S. Geological Survey

### Keynote Address

#### “Setting the Stage - Status and Trends”

*Doug May*  
Global Vice President of Energy, Climate  
Change and Alternative Feedstocks  
Dow Chemical Company

### Session 4

#### “Financing Panel”

*Dr. Jacob Wildeson* of BASF, Senior  
Manager, Technology Scouting & Strategy  
at BASF Future Business, as well as BASF  
Venture Capital GmbH

*Laurence Alexander*, Managing Director,  
Equity Research, Jefferies & Company Inc.

*Adam Tkaczuk*, Director of Industry  
Development, Empire State Development  
Corp.

*Dan Nadash*, Principal, Potomac  
Investments (Potomac Energy Fund)

**Date:** Thursday, December 9, 2010

**Times:** 11:00 AM - 2:15 PM  
Networking: 11 AM - 12 noon  
Luncheon: 12 noon - 1:00 PM  
Presentation: 1:00 - 2:15 PM

**Place:** Con Edison Building  
4 Irving Place  
New York, NY

**Fees:** \$75 for Members of CM&E and  
AIChE, Metro NY Section;  
\$100 for Non-Members;

Students \$50 (If reserved by  
Friday, November 5, 2010)

Reserve Now: <http://www.nyacs-cme.org/ER10/Reserve/ER10.html>



## HIGH SCHOOL TEACHERS TOPICAL GROUP

### The Myth of the ‘War of the Currents’ (AC v DC)

*Speaker:* Joseph J. Cunningham  
Adjunct Professor  
Railway Systems  
TCI College of Technology

Legend depicts the origin of the electrical age as a titanic struggle between the direct current electrical system of Thomas Edison and alternating current favored by George Westinghouse and Nikola Tesla. In reality, however, both systems had advantages and limitations; in the short term hybrid systems developed while twelve decades later direct current still has significant and increasing application. Then and now, the selection was (and is) dependent not on rhetoric but on engineering practicality and economic feasibility.

**Date:** Friday, December 17, 2010

**Time:** Social and Dinner — 5:45 PM

**Place:** M&G Pub (Murphy and Gonzales)  
21 Waverly Place (at Green Street,  
North-east corner)  
New York, NY

No reservations required

**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 AM and 2 PM to verify that meeting is still on; 914-961-8882 for other info.

**Note:** Street parking is free after 6:00 PM. 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.

## **EMPLOYMENT AND PROFESSIONAL RELATIONS COMMITTEE OF THE NEW YORK SECTION**

### **To Human Resources Departments in Industry and Academia**

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

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



## **METRO WOMEN CHEMISTS COMMITTEE**

*(See under NoJ Meetings, pages 15-16)*



## **59TH ANNUAL UNDERGRADUATE RESEARCH SYMPOSIUM**

*Sponsored by:* The New York Chemistry Students' Association of the American Chemical Society's New York Section

The symposium provides an excellent opportunity for undergraduate chemistry students in the NY metropolitan area to present the results of their research. The program includes a keynote address, presentation of student papers (15 minute talks to small groups), and a poster session to be followed by a luncheon.



**Left to right: Paul Dillon, Jody Reifenberg, Rolande Hodel, Peter Corfield (all Westchester Chemical Society board members).**

**Date: Saturday, May 7, 2011**  
**Place: College of Mount Saint Vincent**

For more information on the program, go to:

[http://newyorkacs.org/grp\\_students.html](http://newyorkacs.org/grp_students.html)

If you have any questions please contact:  
Barbara Hillery, Co-chair  
[hilleryb@oldwestbury.edu](mailto:hilleryb@oldwestbury.edu)

Joseph Serafin, Co-chair  
[SerafinJ@stjohns.edu](mailto:SerafinJ@stjohns.edu)

Justyna Widera, Co-chair  
[widera@adelphi.edu](mailto:widera@adelphi.edu)

NY Section, Student Affiliate Committee  
Co-chairs Barbara Hillery, Joseph Serafin,  
and Justyna Widera.



## **WESTCHESTER CHEMICAL SOCIETY**

The Westchester Chemical Society held its newly elected board's first meeting for the year at the beautiful - and fully green - Gateway Building on the campus of Westchester Community College in Valhalla, NY. Chair, Dr. Rolande Hodel stepped in when the scheduled speaker had to cancel on short notice.

Dr. Hodel's presentation can be found on her organization's web site [www.AIDSfreeAFRICA.org](http://www.AIDSfreeAFRICA.org) home page directly beneath the donation button on the right hand column. Dr. Hodel's presentation focused on the myth and misconceptions about Africa. Scientific needs and possibilities have to be mapped out carefully, Hodel explains and recommends consulting an expert when planning to implement a successful project.



**Designing and implementing  
an emerging pharmaceutical infrastructure  
in Africa**



**Rolande Hodel**

Westchester Community College Oct. 13, 2010

*(Photos courtesy of Rolande Hodel)*

 **WILLIAM H. NICHOLS MEDAL**  
**DISTINGUISHED SYMPOSIUM AND AWARD BANQUET** 

**Symposium: CHEMISTRY ON THE NANOSCALE**

Award Recipient: PROFESSOR JULIUS REBEK, Jr.  
The Skaggs Institute for Chemical Biology  
Department of Chemistry, The Scripps Research Institute  
LaJolla, CA

**Date:** Friday, March 18, 2011  
**Time:** Registration 1:00 PM  
Symposium 1:30 PM – 5:30 PM  
Reception 5:45 PM  
Award Dinner 6:45 PM  
**Place:** Crowne Plaza Hotel, White Plains, NY

**PROGRAM**

- 1:30 PM **Welcome** Professor Hiroko I. Karan  
2011 Chair, ACS, New York Section  
Medgar Evers College – CUNY
- 1:35 PM **Opening of the Distinguished Symposium** Dr. JaimeLee Iolani Rizzo  
2011 Chair-elect, ACS, New York Section  
Pace University – New York City
- 1:45 PM **Chemical Synthesis Directed to Small Molecule Natural Products and Biologics** Professor Samuel J. Danishefsky  
Memorial Sloan-Kettering Cancer Center  
Columbia University
- General operating perspective in pharma is that small molecule drug targets are fashioned by chemists through various means. The current emphasis is on producing huge libraries for heavy-duty screening. By contrast, biologics are presumed to arise from strictly natural means. The lecture will deal with the very special nature of small molecule natural products in enabling small molecule leads. It will also show that chemical synthesis is now able to think realistically about gaining access to biologic-level targets through chemistry.
- 2:30 PM **Mechanical Forces at the Molecular Scale** Professor Stephen L. Craig  
Duke University
- This talk will present studies of reactions that occur when large, directional forces are funneled from the macroscopic to the molecular scale. The outcomes are often unexpected and/or counterintuitive, including the ability to trap transition states for extended periods of time and molecules that get shorter in response to being pulled. In addition, mechanically active molecules will be presented as the basis for a new class of self-healing polymers, in which mechanical activation of chemical reactions leads to improved structure and properties under conditions that are typically destructive to both.
- 3:15 PM **Coffee Break**
- 3:45 PM **From Molecules to Materials** Professor Colin Nuckolls  
Columbia University
- This talk will develop methods to bridge, both literally and figuratively, the tools for lithography and those for creating complex molecular structures. Through this combination, we create molecular devices that are ultrasensitive sensors and efficient photovoltaic materials.
- 4:30 PM **Molecular Behavior in Small Spaces** Professor Julius Rebek, Jr.  
**NICHOLS MEDALIST**

This lecture follows the course of molecular recognition by synthetic receptors that completely surround their targets: encapsulation complexes. These operate through the proper filling of space and reveal new forms of stereochemistry, iso-

merism, asymmetry, contortions and reactivity of molecules held inside. Capsules with spacers offer a set of molecular devices that operate through compression and expansion of alkanes. An encapsulation complex of anandamide is shown below.

5:45 PM **Social Hour**

6:45 PM **William H. Nichols Medal Award Dinner**

More information on the 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 the form on the New York Section website.

-----  
**RESERVATION FORM**

**2011 WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM & MEDAL AWARD BANQUET**

**in honor of Professor Julius Rebek, Jr.**

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 \$95/person ACS member  
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 \_\_\_\_\_ places for the banquet at \$85/person  
 \_\_\_\_\_ places for the symposium at \$40/person, ACS member;  
 \_\_\_\_\_ \$50 Non-member  
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\_\_\_\_\_ Prime Rib \_\_\_\_\_

\_\_\_\_\_ Salmon \_\_\_\_\_

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## North Jersey Meetings

<http://www.njacs.org>

### NORTH JERSEY EXECUTIVE COMMITTEE MEETING

There will be no North Jersey Executive Committee Meeting in December.



### CAREERS IN TRANSITION GROUP

#### Job Hunting??

Are you aware that the North Jersey Section holds monthly meetings at Fairleigh Dickinson University in Madison to help ACS members? Topics covered at these cost-free workshops are:

- The latest techniques in resume preparation
- Ways for improving a resume
- Answers to frequently asked interview question and
- Conducting an effective job search

The next meeting for the Careers In Transition Group will be held **Thursday, December 2, 2010**, in the Rice Lounge on the first floor of the New Academic Building. The meeting will start at 5:30 PM and end at 9:00. There will be a Dutch-treat dinner. To get the most from the meeting, be sure to bring transparencies of your resume.

Please contact [billsuits@earthlink.net](mailto:billsuits@earthlink.net), if you plan on attending this meeting.



### NJACS TEACHER AFFILIATES

#### Executive Committee Meeting

Meeting dates are subject to change due to school closings or inclement weather.

**Date:** Thursday, December 2, 2010

**Time:** 4:30 PM - 6:30 PM

**Place:** College of St. Elizabeth  
Faculty Lounge/Study  
2nd Floor of Mahoney Library  
Madison, NJ

**Contact:** Mita Chaki

[mchaki@franklinboe.org](mailto:mchaki@franklinboe.org)

### ChemTAG

#### Authentic and Alternative Assessments

**Date:** Tuesday, December 7, 2010

**Time:** 4:00 – 6:00 PM

**Place:** Franklin High School  
500 Elizabeth Avenue  
Somerset, NJ

**Hostess:** Mita Chaki  
[mchaki@franklinboe.org](mailto:mchaki@franklinboe.org)  
732-302-4200



### 2010 REGULATORY-CMC SYMPOSIUM

#### Topics of Current Interest in Regulatory-CMC

##### Agenda

12:15 – 12:45 PM Registration

1:00 - 2:00

#### “Current Pathways for Biosimilar Products”

*Xin Du*

Director, Bristol-Myers Squibb Co.

2:00 - 3:00

#### “Drug Master Files in Regulatory Affairs”

*Satyam Upadrashta*

Executive Director, Forrest Labs

3:00 - 3:15 Break

3:15 - 4:15

#### “Changes in EU Regulations”

*Declan Kelly*

Executive Director, Bristol-Myers Squibb Co.

4:15 - 5:15

#### “Application of QbD concepts and PAT for Real Time Release Testing”

*Beth Kendsersky*

Director, Pfizer

5:30 PM Adjourn

**Date:** Thursday, December 2, 2010

**Place:** Raritan Valley Community College  
Bridgewater, NJ

**Cost:** General \$20.00  
students, retirees etc. \$10.00

Pre-registration is recommended. Deadline is **Wednesday, November 25, 2010**.

Please register and pay online at [www.njacs.org](http://www.njacs.org). The site also has information on directions, maps and parking, etc.

On-site registration allowed but not preferred (cash or check only, no credit card). Please make your check or money order payable to the **North Jersey Section of the ACS**

## **METRO WOMEN CHEMISTS COMMITTEE**

### **LinkedIn , a Powerful Tool to Boost One's Career**

*By Chunlin Zhao*  
(MWCC Co-organizer)

MWCC held a very educational event on the popular social network, LinkedIn on September 29, 2010 at Fairleigh-Dickinson in Madison, NJ. There were over twenty attendees at this event.

Deborah Smith, a certified LinkedIn instructor presented an informative seminar on the fundamentals on this network. She had a lot of interactions with the audience during and after the seminar. During this event, the participants showed great enthusiasm to learn, the willingness to share their experiences on LinkedIn and other social networks such as Blogs, Twitter and Facebook etc.

Deborah shared that LinkedIn is currently the #1 resource used by recruiters to search

for talent, which makes LinkedIn stand out from other social media tools for being a platform for one's career development. Because of this, the organizers and attendees decided that MWCC needs to be registered as a group at LinkedIn. The goal would be to strengthen the connection amongst MWCC members, to facilitate their career development and to boost the growth of MWCC as an organization. Tina Ross from Hoffmann-La Roche volunteered to take the responsibility of registering MWCC at LinkedIn. MWCC welcomes its members and interested parties to sign in by searching for Metro-Women Chemists Committee at <http://www.linkedin.com/>.

At this meeting, we also welcomed Chunlin Zhao to join the MWCC organizing committee. Chunlin Zhao is a medicinal chemist at Hoffmann-La Roche with many years of ACS membership.

At the end of the event, the participants had expressed their appreciation to the committee members for organizing this meaningful

*(continued on page 16)*

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## **Education**

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### **Brooklyn College Offers a New Course for High School Science Teachers**

The Brooklyn College Department of Chemistry, in collaboration with the School of Education, is proud to announce the creation of a new course designed to support New York City's high school science teachers. The course (Chemistry 7450: Chemistry Teaching Laboratory Management) provides hands-on experience for pre- and in-service teachers looking to introduce or upgrade laboratory curricula. Units include an introduction to modern laboratory pedagogy, the "nuts and bolts" of laboratory safety and practice, and information on improvising materials in situations where budgets or facilities may be inadequate. Every student will budget, troubleshoot and implement two experiments as part of the laboratory component of the course.

**The course will run in Spring 2011 on an evening schedule.**

Inquiries should be directed to:

Prof. Mark Kobrak, Chair Department of Chemistry  
Brooklyn College 2900 Bedford Ave. Brooklyn, NY 11210  
V: (718) 951-5758 E-m: [mkobrak@brooklyn.cuny.edu](mailto:mkobrak@brooklyn.cuny.edu)

## METRO WOMEN CHEMISTS

(continued from page 15)

activity and felt that LinkedIn is a powerful tool to brand oneself in an increasingly competitive job market.

As holiday season is approaching, MWCC is planning next social event to celebrate holidays. In addition, Our January 2011 "How to Raise Smart Kids — teaching young kids doing scientific experiments at home (safe ones)". Please check our website <http://www.njacs.org/metrowomen.html> for future events. In the meanwhile, we are welcome new ideas for the themes of our future meetings.



## PROJECT SEED POSTER CONTEST

Union City students captured the top two awards at the 8th Annual SEED Poster Research Competition at the North Jersey Section of the American Chemical Society meeting that took place at Seton Hall University on September 27, 2010.

Top prizes of a laptop and printer went to Anthony Mendoza (a SEED II student) who did his research at Rutgers Engineering School, and Julissa Morero (a SEED I student) who did her research at the University of Medicine and Dentistry of New Jersey.

## SURPRISE

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.

First Place Awards went to: Kevin Erazo who did research at Princeton University; Jacqueline Cruz who did research at Stevens Institute of Technology; Soany Heredia who did research at UMDNJ; Eric Hernandez who did research at Columbia University; Jeffrey Matos who did research at NJIT; Denisse Melgar who did research at St. Peter's College; Emad Miqbel who did research at Rutgers Pharmacy; Kathy Morales who did research at NJIT; Andrea Murgado who did research at NJCU; Caroline Pepaez who did research at Princeton University; Shruti Patel who did research at Rutgers Pharmacy; Emma Russo who did research at Princeton University; Carmen Velez who did research at St. Peter's College; Priscilla Sangama who did research at Rutgers University; and Paola Severino who did research at Princeton University.

Second Place Awards went to: Christine Calache, Peter Yueng, William Calderone, Evelyn Garcia, Nemushi Handunkutti, Frances Martinez, Valentina Osorio, Erika Portero, Marlen Ramirez, Alejandra Reinoza, Christian Ugaz, Nicolas Ugaz, Mervy Michael and Jessica Victor.

Third Place Awards went to: Jacqueline Santana, Mauricio Aristizabal, Mavy Bucheli, Christian Cedeno, Jessica Chavez, Valery Huamani, Felix Mateo, Yara Montoya, Ana Perez, Michelle Perez, Luzmary Sabino and Rebeca Saborit.

Special thanks to: Ron Sirianni, Dr. Armani, Dr. Barrios, Mrs. Marcos, Mr. Amar, Miss Severino and Miss Smith.

Congratulations to all for a job well done.

(Photos on next page courtesy of Union City High School staff member)



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## Call for Nominations

### EDWARD J. MERRILL AWARD FOR OUTSTANDING HIGH SCHOOL CHEMISTRY TEACHER FOR 2011

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 2011.

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 George Gross, [njmoxie1@verizon.net](mailto:njmoxie1@verizon.net).

(continued on page 18)

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## CALL FOR NOMINATIONS

(continued from page 17)

### 2011 BAEKELAND AWARD

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

The North Jersey Section of the American Chemical Society is soliciting nominations for the 2011 Leo Hendrik Baekeland Award. The Award consists of a gold medal and a \$5,000 honorarium. The Section presents the Award biannually to commemorate the technical and industrial achievements of Leo Hendrik Baekeland and to encourage younger chemists to emulate his example. The Award is given in recognition of accomplishments in pure or applied chemistry to an American chemist as characterized by the initiative, creativeness, leadership, and perseverance of the individual (indicated by published or unpublished evidence) and who will be under the age of 40 as of January 1, 2011.

Nominations for the Award should include a letter describing the nominee's achievements, a brief biography, and a list of the nominee's

more important publications. Successful nomination packets include two to three recommendation letters supporting the candidate. Re-nominations are encouraged, provided the age requirement is still met.

Please submit materials **by December 31, 2010, to:**

Dr. Michael M. Miller  
Baekeland Award Committee  
Bristol-Myers Squibb Company  
311 Pennington-Rocky Hill Road  
Pennington, NJ 08534



### WCS DISTINGUISHED SCIENTIST AWARD 2011

The Westchester Chemical Society is accepting nominations for the "WCS Distinguished Scientist Award 2011".

Scientists who live or work in Westchester qualify. Send resume **by January 31, 2011** to Richard Goodmann, 38 Aspinwall Road, Briarcliff Manor, NY 10510.



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## Others

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### **FORMER CHS SCIENCE TEACHER VISITS THE WHITE HOUSE!**

On September 27, **Dr. Lillian A. Rankel**, a former science teacher who worked at Central High School in Hopewell, NJ, from 1996 to July 2010, was invited to the White House to meet with Kareem A. Dale, Special Assistant to the President for Disability Policy. Dr. Rankel, along with other Independence Science, LLC personnel, demonstrated educational products and services that enable students affected by blindness and low vision to experience more hands-on science learning. This informational visit is in response to President Obama's desire to encourage more students to go into the STEM professions (science, technology, engineering and math). Dr. Rankel's work began at CHS in 2005 when she had a blind student in her Honors Chemistry Class. She immediately set about forming contacts and working with other scientists to make all laboratory experiments accessible to her blind student. We applaud Dr. Rankel's efforts to inspire students affected by blindness or low-vision to consider career paths in these areas and we are grateful to have had her as a teacher in our district. We wish her continued success.



### **NOBEL PRIZES IN 2010 INVOLVE CHEMICALS**

By *Leopold May*

The Catholic University of America  
Washington, DC

The Nobel Prize in Chemistry 2010 was for palladium-catalyzed cross couplings in organic synthesis. It was awarded jointly to **Richard F. Heck**, 79, who is retired from the University of Delaware and living in the Philippines, **Akira Suzuki**, 80, Professor Emeritus of Hokkaido University in Sapporo, Japan, and **Ei-ichi Negishi**, 75, Professor of Purdue University for more efficient ways of linking carbon atoms together to build the complex molecules. Cross couplings involve reaction between two chemically distinct partners allowing control over both halves of the resulting molecule. Cross coupling reactions often involve aryl, alkenyl, or alkyl halides or pseudohalides as one reaction partner with a much greater variety in the other reaction partner. This cross-coupling has vastly improved the possibilities for creating complex molecules, for example,

natural products. One reaction is the Suzuki–Miyaura cross coupling of 1-aryltriazenes and boronic acids catalyzed by the polymer-supported Pd–NHC catalyst.

For another chemical composed only of carbons, graphene, the Nobel Prize in Physics was awarded to two Russian-born scientists, **Andre Geim**, 51, a Dutch national and **Konstantin Novoselov**, 36, a dual citizen of Great Britain and Russia. They first worked together in the Netherlands before moving to the University of Manchester, Great Britain, where they reported isolating graphene in 2004. By applying Scotch tape to graphite, they pulled off thin flakes that consist of one, several, or many layers of graphene. To locate the rare one-layer flakes, they deposited the layers on a silicon dioxide substrate of just the right thickness. When they shone light on the substrate, they were able to distinguish the one-layered graphene by its interference fringes. Graphene may find use as a sensor for gases and should find many applications in the electronic industry.

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## Press Release

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### **Siluria Technologies Secures Funding to Advance First Direct, Economic Process for Converting Natural Gas to Chemicals**

**President Alex Tkachenko Presented  
Details at ChemInnovations Conference**

Siluria Technologies, the first company with technology for direct, cost-effective conversion of natural gas into chemicals, materials, and fuels, announced the close of its Series A round of funding. The investment allows the company to optimize its groundbreaking natural-gas-to-materials platform to meet the performance levels required for commercialization. Its technology to create materials from natural gas will first target the \$160 billion annual market for ethylene, the world's largest commodity chemical.

In tandem with this announcement, the company spoke at *Chemical Engineering* magazine's landmark event in Houston, ChemInnovations. Alex Tkachenko, president of Siluria, presented "A Cost-Advantaged Route for Converting Natural Gas to Chemicals" as part of a session dedicated to alternative chemical pathways.

For more information about Siluria's technology, view the process animation at [www.siluria.com](http://www.siluria.com). For more information about ChemInnovations, visit <http://www.cpievent.com/>.

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- http://newyorkacs.org/jobs.html
- http://njacs.org/jobs.html

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