

# THE Indicator

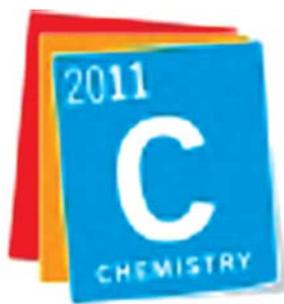
FEBRUARY 2011

Vol. 92 • No. 2

ISSN0019-6924



ACS  
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## International Year of **CHEMISTRY** 2011

*See information on page 20.*

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**Reminder:**  
**Nichols Symposium**  
**March 18, see pages 16-17.**

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### AGENDA | SUNDAY, MAY 1 THROUGH THURSDAY, MAY 5

**Starting Sunday, May 1**  
American Chemical Society  
Short Courses

**Monday, May 2**  
Scholarship Golf Day

**Tuesday, May 3**  
Symposium Day

**Wednesday, May 4 -  
Thursday, May 5**  
Exhibition & Exhibitor  
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The monthly newsletter of the New York &amp; North Jersey Sections of the American Chemical Society. Published jointly by the two sections.

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March	January 15, 2011
April	February 15
May	March 15
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January 2012	November 15, 2011
February	December 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).**

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## February Calendar

### NEW YORK SECTION

**Thursday, February 3, 2011**  
Chemical Marketing & Economics Group  
*See pages 10-11.*

**Wednesday, February 9, 2011**  
Westchester Chemical Society  
*See page 11.*

**Thursday, February 10, 2011**  
Long Island Subsection  
*See page 12.*

**Friday, February 11, 2011**  
NY Section Board Meeting  
*See page 10.*

**Friday, February 11, 2011**  
High School Teachers Topical Group  
*See pages 12.*

**Tuesday, February 22, 2011**  
Biochemical Topical Group  
*See pages 12-13.*

**Tuesday, February 22, 2011**  
MetroWomen Chemists Committee  
*See pages 13 and 18.*

### NORTH JERSEY SECTION

**Thursday, February 3, 2011**  
Careers in Transition  
*See page 18.*

**Thursday, February 3, 2011**  
NoJ Teacher Affiliates Executive Meeting  
*See page 18.*

**Tuesday, February 22, 2011**  
Mass Spectrometry Topical Group  
*See [www.njacs.org](http://www.njacs.org).*

**Friday, February 18, 2011**  
Chromatography Topical Group  
*See [www.njacs.org](http://www.njacs.org).*

**Friday, February 18, 2011**  
NMR Topical Group  
*See [www.njacs.org](http://www.njacs.org).*

**Tuesday, February 22, 2011**  
MetroWomen Chemists Committee  
*See page 18.*

**Monday, February 28, 2011**  
NoJ Executive Committee Meeting  
*See page 18.*



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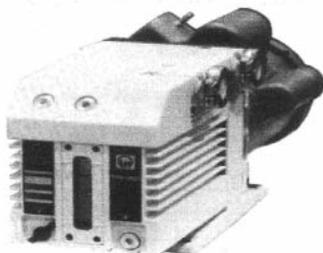
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## THIS MONTH IN CHEMICAL HISTORY

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

It sometimes seems as if talent runs in families. Theatrical examples are familiar; the Douglasses, father and son; the Bridges, father and sons; the Redgraves, father and daughters. And there are examples in science too: the Darwin family boasts several generations of distinguished scientists as does the Huxley family. This month I want to introduce you to a chemist member of an impressive family of American scientists who flourished in the nineteenth century — the Rogers family. The father, Patrick Kerr Rogers, was born in Ireland, trained in medicine in the U.S., and became Professor of Natural Philosophy and Mathematics at the College of William and Mary. Four boys, of the family's seven children, survived infancy. Robert Empie Rogers, the youngest of these, was born in March 1813. He lost his mother to malaria when he was seven, and his father to the same infection when he was fifteen. His two older brothers, James and William, took charge of his education and helped raise the two younger boys, Robert and Henry. All four Rogers boys had distinguished careers. James followed Robert Hare as Professor of Chemistry at the University of Pennsylvania; William was founder and founding President of the Massachusetts Institute of Technology; Henry became Head of the Geological Survey of Pennsylvania and then Professor of Geology at Glasgow University in Scotland. But to return to Robert Rogers.

His first job as a railroad surveyor didn't satisfy Robert, and he enrolled in the medical school at the University of Pennsylvania in 1833, working with Robert Hare, the Professor of Chemistry. Rogers' thesis was on blood chemistry and he was graduated M.D. in 1836. For the next six years he worked with brother Henry on the Geological Survey of Pennsylvania mastering the craft of mineral analysis. He was invited to replace a sick teacher at the University of Virginia in 1841 and the following year became Professor of General and Applied Chemistry at that institution. He collaborated with brother William, then holding the Chair of Geology at Virginia, on researches which they published jointly describing the use of potassium dichromate as an oxidizing agent in the preparation of elemental chlorine and in the conversion of alcohol to acetaldehyde. They also used this oxidant in wet analyses of the amount of carbon in natural graphites and in diamonds (!). With brother James, Robert developed analytical methods for metal ores, and compiled a textbook of chemistry based on works published in England by Gregory and Turner.

When James died in 1852 Robert succeeded him at the University of Pennsylvania. After four years as Professor of Chemistry he was chosen as Dean of the Medical School. During the Civil War Rogers served at a Military Hospital in Philadelphia. In the course of a demonstration of a steam-powered mangle in 1863 Rogers' right hand was crushed and had to be amputated above the wrist. He had a speedy recovery and taught himself to write and to do chemistry with his left hand. His reputation as a chemist and analyst continued to grow. He served as a consultant to the United States Treasury on the refining of precious metals for coinage, and visited mints and assay offices in Philadelphia, New York, and San Francisco. He also consulted for mine owners in the West. In 1877 he moved to the Jefferson Medical College where he taught courses on *materia medica* and chemistry until he retired in 1884. He died in Philadelphia later that same year.

A fascinating, but out-of-print, book by one of the pioneers of chemical history in the U.S., namely Edgar Fahs Smith, is *Chemistry in America* published in 1914. It includes biographical material on all four Rogers brothers, plus a detailed 20 item bibliography of Robert Rogers' publications.

## **FEBRUARY HISTORICAL EVENTS IN CHEMISTRY**

*By Leopold May, The Catholic University of America, Washington, DC*

### **February 3, 1900**

Crompton & Knowles, Inc., was incorporated on this date.

### **February 5, 1914**

Alan L. Hodgkin in 1963 shared the Nobel Prize in Physiology or Medicine with J. C. Eccles and A. F. Huxley for ionic mechanisms involved in excitation and inhibition in the peripheral and central portions of the nerve cell membrane. He was born on this date.

### **February 8, 1777**

Two hundred years ago, Bernard Courtois, who discovered iodine (I, 53) in the liquor from the lixiviation of kelp, was born on this date.

### **February 10, 1840**

One hundred and twenty-five years ago in 1886, Lecoq de Boisbaudran found dysprosium in didymium that Per Teodor Cleve, who was born on this date, had concluded in 1874 had two elements later named neodymium and praseodymium.

### **February 11, 1894**

Izaak M. Kolthoff, who was born on this date, performed important research in analytical chemistry. His book written with E. B. Sandell is a standard reference in this field.

### **February 14, 1961**

Fifty years ago, Lawrencium (Lr, 103) was produced at University of California, Berkeley, on this date.

### **February 16, 1886**

One hundred and twenty-five years ago, Robert R. Williams, Jr., who was born on this date, was a telephone company researcher who in his spare time developed ways to synthesize vitamins. He was a member of the Hall of Fame of Inventors for the Process for Obtaining Vitamins, Patent Number 2,049,988. He isolated thiamine in crystalline form in 1933 and synthesized Vitamin B.

### **February 17, 1838**

Friedrich K. Beilstein, who published what is now known as the standard reference work on organic chemistry and has been updated ever since 1880, was born on this date. It can now be accessed on line.

### **February 19, 1764**

Two hundred years ago in 1811, Gottlieb Sigismund Kirchof applied the first controlled catalytic reaction to produce glucose from starch. He developed a method for refining vegetable oil and established a factory in St. Petersburg capable of producing two tons per day. Also, he experimented with brewing and fermentation and was born on this date.

### **February 20, 1836**

One hundred and seventy-five years ago, Isaac Adams, Jr., who was born on this date, was a pioneer inventor in nickel plating.

### **February 23, 1886**

One hundred and twenty-five years ago on this date, Charles M. Hall was the first to produce electrolytic aluminum in his woodshed laboratory at his family's home.

### **February 26, 1903**

Giulio Natta, who was born on this date, discovered and elucidated stereospecific polymerization and stereoregular polymers; development of commercially important polymerization.

### **February 28, 1814**

Philip Hench shared the Nobel Prize in Medicine in 1950 with Edward Calvin Kendall and Tadeus Reichstein for their discoveries relating to the hormones of the adrenal cortex, their structure and biological effects. He was born on this date.

Additional historical events can be found at Dr. May's website,  
<http://faculty.cua.edu/may/Chemistrycalendar.htm>.

## **A CHEMIST LOOKS AT SKIING**

*By Kevin Olsen, Montclair State University*

“For some ridiculous reason to which I however have no reason to be disloyal... Some person in authority, I don't know who, very likely the astronomer royal... Has decided that although for such a beastly month as February, 28 days as a rule are plenty...”

W.S. Gilbert, *The Pirates of Penzance*

February — a beastly month?!?!

Not for anyone who loves winter sports and especially skiing.

When I was a very young man I had an aunt living in Norway who eschewed all modern technology and still used rabbit skins on the bottoms of her cross country skis. For the rest of, us the sport of skiing uses a plethora of engineered materials, high tech engineering, and even biotechnology. Chemistry makes it all possible.

To anyone standing on bare winter ground and looking up at a snow-covered mountain the most basic ski technology, snowmaking, is immediately obvious. Although there were some earlier experiments with blocks of ice and wood chippers, the basic snowmaking technology we use today emerged in the mid-1950s. Ski area operators in New England had always been proud of the region's reliable snowfall and could usually count on good winter weather. But a few lean years convinced them to install the first snowmaking systems at Mount Ascutney in Vermont. Other pioneer systems were installed at resorts in New Hampshire, New York, and Pennsylvania by the start of the 1957 season. According to the New England Ski Museum of Franconia, New Hampshire, the first snowmaking systems originated with de-icing technology. Throughout the 1940s aviation engineers were experimenting with de-icing systems for aircraft but to test these systems it was first necessary to create ice. The principles of these systems were later adapted to postwar snowmaking.

The basic snowmaking system uses compressed air that is mixed with water and shot out of jets (called “guns”) placed on the ski trails. Mixing with air is critical if the light, flakey consistency of natural snow is to be duplicated. An acre-foot of water (enough water to cover an acre of land with water one foot deep) is 326,000 gallons. An acre of man-made snow one foot deep only contains about 150,000 gallons of water.

The first commercially successful snowmaking systems were of this type and were developed by the Larchmont Engineering Company of Lexington, Massachusetts. The high pressure air (typically 110 psi or 758 kPa) disperses minute water droplets into freezing ambient air. The resulting crystal structure is actually similar to natural snow. Adjusting this produces snowflake lattice structure that is similar to natural snow. By regulating water content the texture of the snow can be controlled. Wetter snow can be laid down as a base and a lighter powdery snow can be added to the top of it. According the Ratnick Industries, a leading manufacturer of snowmaking equipment, a typical air-water snowmaking system can be used at temperatures under 31°F (-.5°C) wet bulb temperature. In conditions of higher humidity, snow can be made at higher temperatures, 36°F (+2.2°C) / 30% relative humidity and 34°F (+1.1°C) / 40% relative humidity.

During the 1930s major department stores in Newark and New York City featured indoor ski slopes where customers could test new equipment before buying. The indoor ski run in Bamberger's was sixty feet long and covered with borax crystals. In the mid 1950s experiments were made with various types of synthetic snows. In Nuremburg, Germany, wastes from a porcelain factory were piled into a 200-foot high hill. Other German ski centers used plastic mats laid down on peat. There was no engineering reason for using peat, it was just thought that it might be softer when a person fell! A ski center in Newton, Massachusetts, used plastic pellets instead of snow and waste from nearby plastics factories was used at Beacon, New York for the ski jump and small practice hill.

*(continued on page 8)*

## **A CHEMIST LOOKS AT SKIING**

*(continued from page 7)*

Also in this period, the standard ski technology, knot-free hickory wood with metal edges, began to be replaced by other materials. Skis made with laminations of hickory and aluminum, or fiberglass, and even plastic were on the market by 1951. It was not until the middle of the 1950s that the Hart Ski Company and its rival, Head Skis, both brought out commercially successful metal skis. Although developed in the United States, metal skis gained international recognition when they were used by the French Ski Team in the 1960 Squaw Valley Olympics. In the mid-1960s Hart was manufacturing 144,000 pairs of skis per year. But by 1969 fiberglass skis were introduced and soon made metal skis obsolete. It was at this time that plastic boots began to replace leather ski boots.

Whatever the tops were made of, the bottom of skis (or ski soles) must be covered with an hydrophobic waxy substance that will cause the ski to glide over the thin layer of water created when the pressure of the ski momentarily melts some snow. Ski waxes lower the surface tension between the water and the ski sole. They also reduce mechanical friction by eliminating surface roughness and irregularities in the sole. Most ski waxes were and still are made from paraffin but in 1985 fluorinated ski waxes became available. In these waxes, hydrogen atoms in the paraffin are completely substituted with fluorine atoms. For example, the wax that had been manufactured by 3M, FC-740, consisted of a nonionic fluoroaliphatic polymeric ester. These waxes have extremely low surface tensions and increased dirt repellence.

Most recreational skis only require an occasional coat of wax because their bottoms are made of a waxy, self lubricating plastic. The first of these materials was introduced in 1957 and sold under the trade name Huski TF-2. The soles were sold not to ski manufacturers, but as kits so that skiers could convert their own equipment to the new technology. The common technology employed today is the sintered base. These are made from polyethylene which is subjected to a heat processing step that creates a thin, highly porous, polymer. This polymer is then laminated onto the base of a ski. The exact composition of the polymer can be modified to create different performance characteristics. Waxes are then added to fill the pores and coat the surface.

Alpine skiing in New Jersey began in 1937 when Austrian emigrant, Hugo Muir, founded the Craigmear ski area near Newfoundland. Lights for night skiing were installed in 1942 and snowmaking followed in 1955. The largest ski areas in the state were both located on Hamburg Mountain in Vernon. Great Gorge and Vernon Valley began operations as separate ski centers but later merged into one operation. Today the combined areas known as Mountain Creek are operated by the Crystal Springs Resort.

By 1967 the Great Gorge ski area only had 90 snowmaking guns and a mere 14 miles of fiberglass pipes. (Today the resort has about 1,000 guns to cover its 41 trails). In 1971 the resort used a Curtis-Wright jet engine to replace multiple 450 horsepower diesel powered compressors that provided air to its 120 snowmaking guns. The \$400,000 Great Gorge system was actually a small installation. Some resorts employed 4,500 pound, 7,000 horsepower Curtis-Wright J-65 jet engines. These were the same engines that were used on the B-57 twin-engine bomber and the A-4 fighter plane. This type of system was thought appropriate for New Jersey where periods of freezing weather do not last as long as they do in New England. Snow must be made quickly and the system allowed Great Gorge to make six inches of snow in 24 hours.

As time went on new snowmaking technologies were introduced that promised to cut down on the expense of providing compressed air from a central station or banks of mountainside compressors. A system made by Germany's Linde Corporation used an electrically powered turbine to run an on-board air compressor and blower fan. The compressor was also used to chill the water and enhance snowmaking capacity. Snow Machines International of Tuxedo, New York, developed the SMI machine at this time. Called a "five and dime" snowmaker because of its low cost, simplicity, and small size, the SMI used a 5 horsepower electric motor to turn fan blades. Water was pumped into the hub of the fan where it traveled out

along the blades and was cooled to between 10 and 15 degrees Fahrenheit by the time it reached the tips. The air stream from the rotating fan froze the water droplets and blew the snow onto the hill. The SMI system could not throw the snow as far as compressed air systems so that snowmaking crews had to reposition them more often, but it was cheaper to operate and did not require high water pressures. The Hedco system, invented by a cloud seeding expert from Bedford, Massachusetts, was also introduced in 1971. It used minute particles injected into the water stream to serve as snowflake nuclei. Like the Linde and SMI systems, a separate supply of compressed air was not required. Another advantage was that the size of the nuclei could be adjusted for different weather conditions.

An alternative to forming snow from a mixture of air and water was tested at four Colorado ski areas in the winter of 1984-85. Snowmax was a bacterium sold by Advanced Genetic Sciences of Berkeley, California. *Pseudomonas syringae* is found on the foliage of many broad leaf plants including vegetables, fruits, and flowers. It has the property of forming tiny ice crystals although at the time scientists with Advanced Genetic Sciences admitted they did not know how. (It was later found that the protein responsible for the process was found in the cell walls.) *Pseudomonas syringae* would continue to produce ice crystals even when dead. Snowmax was a mix of dead bacteria and small particles that provided nuclei around which the bacterium's ice would form. It was applied to the ski trails through underground pipes. The system did not require compressed air and was claimed to be between 20 and 80% more efficient than conventional snowmaking.

The results of preliminary tests were mixed. Winds at the Breckenridge ski resort made effective application difficult but at Copper Mountain the application was more effective. However high winds developed periodically, disturbing the process, and obscuring the results of the tests. Winds were the greatest danger associated with the process. Some scientists in Colorado feared that if the bacteria was blown off the mountain it could damage frost-sensitive crops. The high concentration of the bacterium and the fact that it would be applied in the spring and fall when crops were most vulnerable made the possibility of escape all the more alarming. There was however little concern over human health, *Pseudomonas syringae* is a naturally occurring species and people frequently come into contact with it. Additionally, there were no genetic modifications to the bacterium. Today Snowmax is sold as a protein-based additive for conventional snowmaking systems. It serves as a nucleating agent and also enhances ice crystal formation so that snow can be made at higher temperatures. While some environmental concerns remain, the agent is used widely and there is some evidence that the snow produced with it lasts longer.

An example of the complex snowmaking infrastructure of a modern resort is Windham Mountain, located southwest of Albany, New York. This Catskill Mountains resort claims to have the most snowmaking coverage of any mountain within 200 miles of New York City. The mountain is crisscrossed with a network of 65 miles of pipes supplemented by 25 additional miles of hose. The system can deliver 6,000 gallons of water per minute to the trails pushed by 30,000 cubic feet of air per minute at 110-114 psi.

There has been concern expressed about the use of water for snowmaking systems. In 1994 according to the Colorado State Division of Natural Resources the ski industry used about 2,000 acre-feet of water while irrigated agriculture consumed about 10,000,000 acre-feet. Colorado was worried not about the total volume of water withdrawn from streams in the state for snowmaking. The concern rather, was that large volume withdrawals for short periods of time and from a few streams near ski resorts would harm fish and wildlife in those streams. Most ski resorts today have their own reservoirs for water supply.

So the next time your boss catches you sneaking out of the lab to go skiing, you can quite rightly claim that you are still doing chemistry!

For those readers who hate winter, I will be doing a story on the chemical industries along the Jersey Shore for an upcoming issue.

For More Information:

*Skiing in New Jersey*, by Elizabeth Holste, ISBN: 978-1-4116-6037-3

New England Ski Museum, Franconia, NH, <http://www.skimuseum.org/>

## 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 date of a major New York Section event 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>.

Friday, March 18, 2011

Nichols Symposium and Award Ceremony

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Leader  
BASF Corp.

Today new innovation partnerships are growing along the value chains that create the products we use in our everyday lives. The Sustainability Consortium (TSC) is a group of leading companies, retailers, academics, government and non-governmental organizations striving to create sustainability measurement and reporting standards which will reward innovations that improve environmental and social product attributes. The group plans to develop standards that include both quantitative life-cycle based measurements as well as identify "best practice sustainability performance drivers" which address aspects such as good manufacturing practices. BASF, the first chemical company to become a founding member of TSC, has been utilizing tools both internally and in innovation partnerships to address these factors since 1996 – assessing and optimizing environmental, economic and even social aspects of products and technologies. This presentation will describe what the future may look like as the TSC creates:

- Fertile ground for new open innovation
- Potential models for future sustainability measurements
- Industry-wide reporting standards

Charlene Wall-Warren, North American Sustainability Leader, BASF Corp., leads sustainability programs for BASF in North America. Her role includes identifying new opportunities to communicate and apply BASF's sustainability management systems, measurement tools, and product innovations. Prior to this, she led a company-wide team pursuing opportunities for packaging technologies with environmental and economic benefits, as well as enhanced shelf-appeal. In 2001, she launched BASF's North American Eco-efficiency Analysis program, bringing sustainability measurement and optimization tools to BASF businesses and customers in this region. She is a Board Member of the American Institute of Chemical Engineers (AIChE), and from 2006 to 2008 was the Inaugural Chair for AIChE's Center for Sustainable Technology

Practices. She spent the first ten years of her career as a process and project engineer designing BASF's manufacturing facilities, after graduating in 1992 with a B.S.Ch.E. from Drexel University.

**Date: Thursday, February 3, 2011**

Times: Networking: 11:15 AM  
Lunch: 12:00 noon  
Presentation (webcast): 1:00PM  
Place: Midtown Executive Club  
at Club Quarters  
40 West 45th Street  
between Fifth & Sixth Avenues  
New York, NY

Cost: Luncheon Fees: \$85\* for Members and \$95\* for Non-Members.  
(Members include Paid Members of CM&E or NYSCC or NYSSA.)

Save Now - Early-Bird rates: \$65\* for Members and \$75\* for Non-Members who pay via credit card by on the Friday before the event. Reserve Now.

\* Includes automatic renewal or new membership fees being applied at the special rate of \$20 for 2011. Normally \$50 for non-ACS members.

**Student Fees:** Same luncheon fees as Paid-Members of CM&E.

For presentation only in NY, the fee is \$10 for registrants who pay by Friday prior to the event. Ask for availability of special rates.

**Webcast Fees:** \$30 for all. \$15 discount if you reserve by the Friday before the event, 4 pm ET. This event will be available as a Webcast live (1:00 - 2:00 pm Eastern Time) and also as webcast recording for post-event viewing in the case of those traveling or with scheduling conflicts. Reserve Now: <http://tinyurl.com/cme-feb11>

**Next Meeting**

**“Green Chemistry: Outlook and Opportunities”** (Panel Discussion)

*Moderator:* Doris de Guzman  
Senior Editor  
ICIS Chemical Business and  
ICIS Green Chemicals blogger  
and  
Representatives from major  
chemical companies and  
start-ups involved in green  
chemistry

**Date: Thursday, March 3, 2011**

**WESTCHESTER CHEMICAL SOCIETY**

**Special Seminar – “A Chemist's View of Aromas”**

*Speaker:* Thomas Parliment  
Parliment Consulting  
New City, NY

The aromas of food products are quite complex with typically hundreds of volatile components present. This talk will discuss the thermal as well as biochemical origin of compounds found in aromas and will explore the contribution of these chemicals to the overall character of the food. Examples of characterizing aroma chemicals in foods will be presented. The aromatic composition of selected foods will be discussed in detail and used to demonstrate how aroma research is conducted.

Tom Parliment received a B.S. degree in Chemistry from Lehigh University and a Ph.D. in Food Science from the University of Massachusetts. In his career at Kraft Foods, he studied the aromatic composition of numerous foods such as meat, coffee, baked goods, seafood, fruits, and he has more than 20 US patents and more than 50 publications in these and related areas. He is a member of a number of professional societies, including the American Chemical Society (ACS), Sigma Xi and the New York Institute of Food Technology. He is currently a consultant to the flavor industry.

Tom is past chairman of the New York Chromatography Society, the Flavor Subdivision of the ACS, and the Rockland Chemical Society. He is the co-organizer of four national American Chemical Society Symposia, covering biologically and thermally derived aromas. He has co-edited six flavor-related books.

**Date: Wednesday, February 9, 2011**

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)  
Phone 1-914-524-3313

## LONG ISLAND SUBSECTION

### Nuclear Resonant Inelastic X-ray Scattering

*Speaker:* Dr. Esen Ercan Alp  
Advanced Photon Source  
Argonne National Laboratory

For almost three decades after its discovery, Mössbauer spectroscopy was practiced using suitable radioactive parents decaying into the isotope of interest. For the last two decades, however, several groups around the world started research programs to make use of synchrotron radiation to replace the radioactive parent isotope as a source. Nuclear resonant inelastic x-ray scattering of synchrotron radiation is now a useful tool for investigating thermodynamic properties of organic and inorganic materials in various scientific disciplines including condensed matter physics, materials science, biophysics, geophysics and mineral physics. Today, it is possible to learn about phonon density of states under pressures exceeding megabar, and at temperatures as high as 3000 K. Interesting studies of iron proteins, model compounds like single crystal porphyrins with different ligand substitutions, provides important clues to the mechanisms of enzymes. Study of metallic and network forming glasses or nanoparticles provide new insights into vibrational properties of complex systems. This talk will review the recent trends from development point of view and will try to put some perspective for various opportunities at the APS with respect to optics, different isotopes and sample environments.

**Date:** Thursday, February 10, 2011

**TimeS:** Social 6:00 PM  
Seminar 6:30 PM

**Place:** Hofstra University  
Breslin Hall, Room 103  
(Please note that this is a different room than for recent seminars)

**Cost:** Seminar is free and open to all.  
Dinner: Following the seminar at a nearby restaurant \$25.00

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

## HIGH SCHOOL TEACHERS TOPICAL GROUP

### Free Web 2.0 Tools for the Classroom

*Speaker:* Barbara De Santis  
In Class Support—Technology Affiliation  
Sayreville Public Schools  
Parlin NJ

Free web based tools for easy implementation in the class. Applications include animoto, storybird, Google searches.

**Date:** Friday, February 11, 2011

**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 9:00 AM and 2:00 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.



## BIOCHEMICAL TOPICAL GROUP

### Sirtuins, Longevity and Adaptations to Nutrient Availability

*Organizers:* Anthony Sauve, PhD  
Weill Cornell Medical College

Jennifer Henry, PhD  
The New York Academy of Sciences

*Speakers:* Johan Auwerx, MD, PhD  
Ecole Polytechnique Fédérale  
Lausanne

Leonard Guarente, PhD  
MIT

Anthony Sauve, PhD  
Weill Cornell Medical College

David Sinclair, PhD  
Harvard University

Eric Verdin, MD  
University of California  
San Francisco

Sirtuins are implicated in aging and adaptations to food intake, thus play an important role in low-calorie diets. The symposium reveals discoveries in how sirtuins regulate biological processes, and modulation of their biochemical properties.

**Date:** Tuesday February 22, 2011

**Times:** 1:00 PM – 5:00 PM

**Place:** The New York Academy of Sciences  
7 World Trade Center – 40th floor  
250 Greenwich Street  
New York NY

**Cost:** FREE for ACS and NYAS members. Please use the discount code SPN1-ACS1. Non-members may attend for a fee of \$30 per event; Student Non-members for \$15.

Reserve a seat on-line at:

[www.nyas.org/sirtuins](http://www.nyas.org/sirtuins)

To become a Member of the Academy, visit  
[www.nyas.org/benefits](http://www.nyas.org/benefits)

## METRO WOMEN CHEMISTS COMMITTEE

**Chemistry Demonstration Exchange!**

**Date:** Tuesday, February 22, 2011

(For further information, see under NoJ Meetings, page 18.)



## YOUNGER CHEMISTS COMMITTEE

**The Inaugural NY ACS Younger Chemists Committee (YCC) Research Symposium**

This symposium is an opportunity for undergraduate students, graduate students, post-docs, faculty members, and workers in government and industry in the NYC-metro area to meet fellow scientists and present research. We plan to have oral presentations, a keynote speaker and a poster session highlighting work in analytical chemistry, biochemistry/chemical biology, inorganic chemistry, organic chemistry, physical chemistry and theoretical chemistry. In addition, a networking reception will immediately follow the poster session.

We welcome abstract submissions on all topics of chemistry. The best abstracts will be selected as oral presentations. There will be prizes for the best posters also. To submit an abstract, please request a form at [nyacsyccsymposium@gmail.com](mailto:nyacsyccsymposium@gmail.com) and fill it out by March 1, 2011.

### Schedule:

1:00-1:15

Welcoming remarks from  
*Dr. Hiroko Karan*, NY ACS Chair

1:15-2:00

Oral session I  
Chaired by *Dr. David Cormode*

2:15-3:00

Oral session II  
Chaired by *Ms. Elizabeth Onufrey*

3:15-4:15

Keynote speaker  
*Prof. Ron Breslow*, Columbia University

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(continued on page 14)

**YOUNGER CHEMISTS***(continued from page 13)*

4:15-4:30

Closing remarks from *Prof. Ruben Savizky*

4:30-6:00 — Poster session

6:00-7:30 — Networking reception

**Date: Saturday, March 19, 2011**

**Place:** The Cooper Union  
41 Cooper Square  
(between 6th and 7th Streets)  
New York, NY

If you are interested in attending, please email [nyacsysccsymposium@gmail.com](mailto:nyacsysccsymposium@gmail.com) by **March 15, 2011**.

**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.

**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.

**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 [hftaft@att.net](mailto:hftaft@att.net).

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

**LONG ISLAND SUBSECTION****Events Schedule for 2011****Thursday, February 10**

"Nuclear Resonant Inelastic X-ray Scattering"

*Esen Ercan Alp*

Argonne National Laboratory

Location: Hofstra University

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**Thursday, March 10**

“Ferrates (VI, V, and IV): Green Chemistry Oxidants”

*Virender K. Sharma*

Florida Institute of Technology

Location: Hofstra University

**Friday, April 8**

“11th Annual Chemistry Challenge”

Location: Queensborough Community

College

**Thursday, April 14**

“Heavy Metals and Chronic Disease”

*Christopher Calapai*

C.C. Medical Services

Location: Hofstra University

**Thursday, May 5**

“Characterizing Nanoparticle-Based MRI Contrast Agents”

*Marc Walters*

New York University

Location: Hofstra University

**Thursday, June 2**

“LI-ACS High School Awards”

Location TBA

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

**WESTCHESTER CHEMICAL SOCIETY**

The Westchester Chemical Society met December 8th to listen to Dr. Jack Levine's presentation recounting fifty years of history that had happened right here in our county. The Technicon AutoAnalyzer developed by Technicon, today Siemens Diagnostic, introduced speedy sample analysis into the Clinical Chemistry Laboratory in hospitals. Before this analyzer was made available, patients and doctors alike had to wait 24 hours for results. Jack Levine is an enthusiastic speaker. We enjoyed his talk, his and his wife's company very much.



**Pictured (from left) Peter Corfield, Jack Levine, Paul Dillon, Rolande Hodel, Richard Goodman, Jody Reifenberg.**

*(Photo courtesy of Michael Shakarjian)*

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 **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, isomerism, 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  
 \_\_\_\_\_ places for the symposium & banquet at \$105/person Non-member  
 \_\_\_\_\_ places for the banquet at \$85/person  
 \_\_\_\_\_ places for the symposium at \$40/person, ACS member;  
 \_\_\_\_\_ \$50 Non-member  
 \_\_\_\_\_ (Student or unemployed at \$20/person)

(For table reservations of 8 or more, use the ACS member \$95/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:

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**BANQUET RESERVATION DEADLINE: MARCH 9, 2011**

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 28, 2011

**Time:** 6:00 PM

**Place:** Rutgers University  
Wright-Rieman Labs, Room 260  
Busch Campus, 610 Taylor Road  
Piscataway, NJ 08854

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

Directions can be found using mapquest and the address above. A map of the campus can be found at <http://maps.rutgers.edu/maps/default.aspx?campus=4>.

Reservations: call (732) 463-7271 or email [njacsoffice@aol.com](mailto:njacsoffice@aol.com) prior to **Wednesday, February 23, 2011**.

**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 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, February 3, 2011**, 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 [bill suits@earthlink.net](mailto:bill suits@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, February 3, 2011

**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)



### MASS SPECTROMETRY TOPICAL GROUP

**Date:** Tuesday, February 8, 2011

See [www.njacs.org](http://www.njacs.org) for more information.



### METRO WOMEN CHEMISTS COMMITTEE

#### Chemistry Demonstration Exchange!



Everyone has heard of recipe exchanges, but what about a chemistry demo exchange?!

Please bring along ~30 copies of your favorite kid-friendly chemistry demonstrations to share with others during this fun and interactive meeting! What a fun way to discover new and exciting chemistry demonstrations to share with your students, children, grandchildren or neighborhood kids!

**Date:** Tuesday, February 22, 2011

**Time:** 6:00 PM

**Place:** Fairleigh Dickinson University  
Recreation Center  
Rutherford Room  
Rutherford, NJ

**Cost:** ~ \$27, includes dinner.

Please RSVP & send your demo idea to Amber Charlebois ([charleb@fdu.edu](mailto:charleb@fdu.edu)) by **Friday, February 11, 2011**.

## CHROMATOGRAPHY TOPICAL GROUP

Date: Friday, February 18, 2011

See [www.njacs.org](http://www.njacs.org) for more information.



## NMR TOPICAL GROUP

Date: Friday, February 18, 2011

See [www.njacs.org](http://www.njacs.org) for more information.



## LABORATORY ROBOTICS INTEREST GROUP

### Seventh Annual Student Poster Contest, Mid Atlantic Chapter

The student poster event is open to all high school and college students. All students should submit a poster as a PDF file to Kevin Olsen at Montclair State University by **April 29, 2011** ([olsenk@mail.montclair.edu](mailto:olsenk@mail.montclair.edu)). Ten finalists in the high school division will be selected and invited to present their posters at the LRIG Annual Technology Exhibition on **May 17th**. Each finalist and their faculty adviser will receive traveling

expenses to the meeting, free dinner, and a chance present their work at one of the largest scientific meetings in New Jersey. The Annual Technology Exhibition attracts over 90 laboratory technology vendors and over 400 scientists. Cash prizes will be awarded to the three top posters displayed at the exhibition.

College students selected to present a poster at the meeting will also receive traveling expenses and dinner but will not be eligible to compete for the cash prizes.

Student posters may be on any topic in the biological, physical, or earth sciences. Content related to robotics or automation is NOT required. In lieu of a PDF file, a hard copy of the poster may be mailed to:

Kevin Olsen  
Department of Chemistry and Biochemistry  
Room 359 Richardson Hall  
Montclair State University  
Montclair, NJ, 07043

Date: **Tuesday, May 17, 2011**

Time: 4:00 PM

Place: Hyatt Regency  
New Brunswick, NJ

For more information please contact Kevin Olsen ([olsenk@mail.montclair.edu](mailto:olsenk@mail.montclair.edu)) or 973-655-4076.

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# ACS News



**ACS**  
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## Outreach for the International Year of Chemistry

The ACS Committee on Community Activities invites you to celebrate the International Year of Chemistry!

Host festivals, make presentations at your local school or mall, partner with local civic organizations, and show how chemistry is an international science!

- Develops an awareness of water, its sources, and the importance of water purity with its relevance to sustainability.



### 1<sup>st</sup> Quarter Environmental



- Coincides with Chemists Celebrate Earth Day (CCEd).
- Features viable alternate energy sources as a key aspect of sustainability.

### 2<sup>nd</sup> Quarter Energy



International Year of  
**CHEMISTRY**  
2011



### 3<sup>rd</sup> Quarter Materials

- Focuses on the important aspects of recycling, properties of materials, and nanomaterials.



### 4<sup>th</sup> Quarter Health

- Coincides with National Chemistry Week (NCW).
- Features the positive impact of the chemical sciences on the world as it relates to nutrition, hygiene, and medicine.

Water and the many faces of Chemistry will be included in each theme.



Let us know how we can help your local section have a successful IYC!  
Contact us at [oca@acs.org](mailto:oca@acs.org).

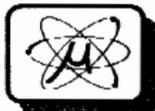


To learn more about IYC go to [www.acs.org/iyc2011](http://www.acs.org/iyc2011).

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## Call for Nominations

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### **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).



### **2011 LIFETIME ACHIEVEMENT AWARD OF THE NORTH JERSEY SECTION**

The biennial award consists of a recognition plaque and \$1000 prize. It recognizes a North Jersey Chemist or chemical engineer over fifty years of age for conspicuous achievements in chemistry, not heretofore recognized by any major scientific awards.

Please submit nominations and supporting letters to Michael Miller, Awards Committee Chair, c/o 4 Cameron Rd, Piscataway, NJ 08854. Telephone (732) 463-3987. Email [Jppenna@aol.com](mailto:Jppenna@aol.com). Nominations must be received by **March 15, 2011**. Visit <http://www.njacs.org/awards.html> for the nomination form and the list of past recipients.



### **METRO WOMEN CHEMISTS COMMITTEE**

#### **2011 Mentorship Award Nominations**

We are seeking nominations for our 2nd Annual Mentorship Award. Please nominate someone you have gained valuable mentorship from or you can self-nominate yourself

if you have had positive influence over other people's lives or careers. The qualified nominees should be ACS members. Nominations should be no more than 300 words. Please send your nomination to Kelly George at [kelly.george@roche.com](mailto:kelly.george@roche.com) no later than **March 15, 2011**.

The award ceremony and dinner will be held in April 2011 at the picturesque Madison campus of Farleigh-Dickinson University.

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## Call for Papers

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### **THE INAUGURAL NY ACS YOUNGER CHEMISTS COMMITTEE (YCC) RESEARCH SYMPOSIUM**

This symposium is an opportunity for undergraduate students, graduate students, post-docs, faculty members, and workers in government and industry in the NYC-metro area to meet fellow scientists and present research. We plan to have oral presentations, a keynote speaker and a poster session highlighting work in analytical chemistry, biochemistry/chemical biology, inorganic chemistry, organic chemistry, physical chemistry and theoretical chemistry. In addition, a networking reception will immediately follow the poster session.

We welcome abstract submissions on all topics of chemistry. The best abstracts will be selected as oral presentations. There will be prizes for the best posters also. To submit an abstract, please request a form at [nyacsyccsymposium@gmail.com](mailto:nyacsyccsymposium@gmail.com) and submit it by **March 1, 2011**.

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## Call for Posters

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### **LABORATORY ROBOTICS INTEREST GROUP**

#### **Seventh Annual Student Poster Contest, Mid Atlantic Chapter**

The student poster event is open to all high school and college students. All students should submit a poster as a PDF file to Kevin Olsen at Montclair State University by **April 29, 2011** ([olsenk@mail.montclair.edu](mailto:olsenk@mail.montclair.edu)).

*See article on page 12.*

## Others

### THE 2011 MIDDLE ATLANTIC REGIONAL MEETING



The 2011 Middle Atlantic Regional Meeting (MARM) of the American Chemical Society will be held May 21-24, 2011 on the campus of the University of Maryland, College Park, hosted by the Chemical Society of Washington. This meeting will feature national and international leaders in the chemical sciences and will include a broad selection of symposia in BIOCHEMISTRY, ORGANIC CHEMISTRY, INORGANIC / MATERIALS CHEMISTRY, ANALYTICAL / PHYSICAL / THEORETICAL CHEMISTRY, and CAREER, EDUCATION and PROFESSIONAL areas. Several Workshops are planned, and there will be events that feature career development, funding opportunities, and education.

Research presentations are open to all, and symposia will include contributed papers selected from those submitted that best represent the symposium topic. Invited speakers for each symposium will include national and international leaders. Graduate students, postdoctoral associates, and young professionals are encouraged to come to increase their visibility, and undergraduate students will find ample opportunity to learn about employment and graduate school opportunities. There will be activities for senior chemists, who will also be available to advise and inform younger chemists.



### AMERICAN INSTITUTE OF CHEMICAL ENGINEERS

#### Officers and New Board Members for 2011

The American Institute of Chemical Engineers (AIChE) announced that Maria K. Burka, program director in the Chemical, Bioengineering, Environmental and Transport Systems Division of the National Science Foundation in Arlington, Virginia, will become president of the 40,000 member organization in 2011. Burka is the second woman to hold the presidency since AIChE's founding in 1908.

Burka succeeds 2010 President Henry T.

"Hank" Kohlbrand, a recently retired executive with The Dow Chemical Company. Joining her on the Board of Directors will be David A. Rosenthal, who will serve as president-elect in 2011 and as president in 2012, and Andre R. Da Costa, who will begin a three-year term as treasurer. Rosenthal is the manager of reliability and asset management for Jacobs Engineering in Houston, Texas. Da Costa is an engineering manager with Chevron Corporation in Bakersfield, California.

Also newly elected to three year terms as directors were: T. Bond Calloway, Jr., alternative energy research manager at Savannah River National Laboratory, in Aiken, South Carolina; Karl V. Jacob, fellow and technical manager for solids processing in Engineering Sciences at The Dow Chemical Company in Midland, Michigan; Freeman Self, a process engineer with Bechtel in Houston, Texas; and Katherine S. Ziemer, associate professor of chemical engineering at Northeastern University in Boston, Massachusetts.



### NJIT OTTO H. YORK DEPARTMENT OF CHEMICAL, BIOLOGICAL AND PHARMACEUTICAL ENGINEERING

#### Graduate Seminar Series – Spring 2011

*Sponsors:* Infineum USA L.P. and  
ConocoPhillips Bayway Refinery

#### Monday, February 21

"Towards Sustainable Energy: Carbon Capture and Storage"

*Professor Ah-Hyung (Alissa) Park*  
Lenfest Junior Professor in Applied Climate Science

Earth and Environmental Engineering  
Columbia University, New York, NY

#### Monday, February 28

"Advanced Population Balance Modeling of Particulate Processes"

*Dr. R. Bertrum Diemer, Jr.*  
Engineering Fellow  
DuPont Company, Wilmington, DE

#### Monday, March 7

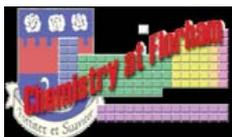
"Microstructure and Rheology Relationships for Concentrated Colloidal Dispersions: Shear Thickening Fluids and Their Applications"

*Professor Norman Wagner*  
Alvin B. and Julia O. Stiles Professor and  
Department Chairperson  
Department of Chemical Engineering  
University of Delaware, Newark, DE

OPEN TO PUBLIC

## FAIRLEIGH DICKINSON UNIVERSITY

Spring 2011  
Seminar Series



### February 15

"Analysis of Drugs of Abuse Using SPME and GCxGC-ToFMS"

*Nicholas H. Snow, Ph.D.*

Analytical Chemistry Professor  
Department of Chemistry and Biochemistry  
Seton Hall University and Director of the  
Center for Academic Industry Partnership

### February 22

"The Dos and Don'ts of Your Job Search"

*Les McQuire, Ph.D.*

Global Program Manager at Novartis,  
Facilitator, Leadership Development  
System at American Chemical Society and  
Councilor at American Chemical Society

### March 1

"A 'Sticky' Problem: The Molecular Basis of Adhesion"

*Anita Brandolini, Ph.D.*

Assistant Professor of Analytical Chemistry,  
School of Theoretical and Applied Science  
Ramapo College, Mahwah, NJ.

### March 8

"The Future of Pharmacy"

*Dr. Ruth Nemire*

Founding dean of the Fairleigh Dickinson  
University School of Pharmacy at Maxwell  
Becton College of Arts and Sciences,  
College at Florham

**Date:** Tuesdays

**Time:** 4:00 PM

**Place:** Fairleigh Dickinson University  
Science Building Room 9  
College at Fordham  
Madison, NJ

Seminar coordinator: Dr. Bill Fordham

973.443.8791

[fordham@fdu.edu](mailto:fordham@fdu.edu)



## ADELPHI UNIVERSITY

2011 Henry Drysdale Dakin Memorial  
Lecture

"Transport of Potassium and Chloride  
across Biological Membranes"

*Speaker:* Professor Roderick MacKinnon  
Rockefeller University, HHMI  
2003 Nobel Laureate in  
Chemistry

Ion channels are responsible for generating electrical impulses and mediating numerous cellular processes. To accomplish their tasks in biology ion channels must exhibit two basic properties, selectivity and gating. Selectivity refers to the property of high fidelity discrimination among similar ions, while gating refers to protein conformational changes that open a channel in response to specific stimuli such as ligand binding or membrane voltage. Recent developments on the molecular principles of selectivity and gating in potassium channels will be presented as well as a new mechanism for the counter transport of chloride ions and protons.

**Date:** Monday, April 4, 2011

**Time:** 7:00 PM

**Place:** University Center Ballroom

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

Travel Directions:

<http://www.adelphi.edu/visitors/directions.php>

Additional Information: Contact Professor  
Stephen Z. Goldberg, (516) 877 4147 or  
[goldberg@adelphi.edu](mailto:goldberg@adelphi.edu)

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